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3 Abbreviations

Abbreviation	Explanation

4 Blank questionnaire

4.1 Port of (name of port)

Port authority	<i>(write here if you answer the Questionnaire as port authority)</i>
Port operator	<i>(write here if you answer the Questionnaire as port operator)</i>
Date:	
Contact details:	

Please read me first!

Dear Madams and Sirs,

You are viewing a complex Questionnaire on port pricing principles in the Danube Region ports (*hereinafter: Questionnaire*). Its complexity is a result of the attempt to encompass all possible diversities of port governance and operations models in nine different countries along the Danube and a large variety of port pricing models in involved inland waterway and seaports. You will probably note that the port tariffs terminology used in the Questionnaire may not fully reflect the terminology used in your country/port. This is why generic definitions are provided here and you will have an opportunity to adjust and explain a concrete situation in your country/port if it differs from a generic setup used here. Since this Questionnaire encompasses a wide variety of port pricing policies, we kindly encourage you to read it carefully and discuss and fill it together with your (transport?) economists or department in charge of tariff policies. The Questionnaire is given to you with sufficient time before the deadline, so please feel free to take your time filling it. Your best source of information for this Questionnaire is your own experience, knowledge and employees.

The objectives of this Questionnaire are the following:

- to provide an insight into the nature and mechanisms of port tariffs charged by port governing bodies (such as port authorities of whichever form), port operating companies (port/terminal operators) and providers of nautical services (mostly in seaports) such as line handling (berthing/de-berthing, a.k.a. fasting/unfasting), pilotage and towage;
- to identify who finances ports, who charges what and who pays what;
- to attempt to distinguish the nature infrastructure charges (for the use of infrastructure) and service charges (for provision of various services);
- to determine the basis and calculation methodology for each tariff;
- to determine whether the tariffs are calculated on a cost based approach (and what kind of cost), performance based approach, value based approach (i.e. demand based approach), strategic principles, (or on any other);
- to assess the level of autonomy and regulation of tariff settings;
- to determine the level of dynamics of tariffs;

- to determine the existence of regulated tariff ceiling or floor.

The authors of this Questionnaire remain at your service for any type of clarification.

Thank you.

iC consulenten & DIONYSUS Project team

4.1.1 Definitions

Definitions (for the purposes of this Questionnaire)	
Port tariffs	Common term for all types of charges, dues and fees applicable in ports.
Infrastructure fees	Charged for the use of port infrastructure such as water body, anchorage, wet side of the quay, dry side of the quay ¹ , usage of rail or road infrastructure (entrance/exit/parking), vessel laying fee, aids to navigation, etc. These fees are usually charged by the port governing body (e.g. port authority), or concessionaire (depending on the type of concession) and, depending on the country, may be paid by vessel owner/operator (or by agent on their behalf), cargo owner, truck or rail operator. In case of vessel related fees, infrastructure fees are based on carrying capacity of the vessel, Gross Tonnage (GT), Net Tonnage (NT), on vessel length, time spent at berth, actual cargo quantity being loaded/unloaded, etc. Typically charged by port authority (or concessionaire) and paid by the vessel/vehicle owner or cargo owner.
Service fees	Fees charged for the provision of various services, such as loading/unloading (use of cranes and similar transshipment devices), storage, warehousing, yard handling, reception/delivery at gates, etc. Usually charged by port/terminal operator and paid usually by cargo owner (shipper/receiver).
Nautical-technical services fees	Pilotage, towage, line handling (mooring/unmooring or fastening/unfastening), shore-side electricity supply, water supply, etc. Typically charged by service provider or port authority or government (in case of pilotage), and paid by the vessel owner.
Navigation aid fees	Fees charges for the use of navigation aids (NAVAID) such as aids to navigation (AtoN), VTMIS, safety of navigation, lighthouses, navigation buoys, signals, markers, radio beacons, etc. Applicable mostly in seaports.
Economic approach (to pricing)	Based on marginal costs, taking into consideration the effects on all parties, including benefits derived by others. Marginal costs in port are extremely difficult to define, but to put it simply, they represent the change in total cost associated with the unit change in the level of activity ² . However, since marginal costs are not only extremely difficult to define, they are also very difficult to estimate, this approach comes down to favouring the average cost based pricing. In other words, a cost recovery based approach.

¹ In certain cases, this fee may be split in two, whereas the ship owner pays for the usage of the wet side of the quay (berth) and the cargo owner pays for the usage of the dry side of the quay (berth).

² Goss, R.O., Stevens, H. (2001): Marginal Costs in Seaports, *International Journal of Maritime Economics*, Vol. 3, pp.128-138.

Definitions (for the purposes of this Questionnaire)	
Financial approach	Prices set on the basis of accounting costs, to recover fixed and variable costs and to provide an adequate rate of return and certain profit.
Public body approach	Aims to foster local development and economic activities, to maximize throughput, to maintain port services as public good in public interest; often requires subsidies (e.g. to cover at least part of the fixed infrastructure costs).
Cost based pricing	The simplest pricing principle, calculates prices (fees) based on simple cost (fixed, variable or even marginal) recovery, but <u>not including the past investments</u> . Cost based tariffs are used to achieve the marketing objective of maximizing the use of port services and the financial objective of covering the fixed and variable costs of these services.
Cost-plus based pricing	Calculates prices (fees) based on cost (fixed and variable) plus a determined profit margin.
Performance based pricing	Calculates fees based on time efficiency of usage of the service or facility (time a ship spends at berth, time a cargo spends in a base or transit storage, etc.). Promotes efficient behaviour of the users of a facility. Used to achieve the operational objective of maximizing the throughput of port facilities while limiting the level of congestion and to achieve the marketing objective of minimizing the traffic loss owing to congestion.
Value based pricing	Also known as pricing principle based on what-the-traffic-could-bear , but which can be better assessed by the value that users attach to them. Used to meet the financial objective of generating sufficient revenues to cover the ports' costs and the marketing objective of limiting the loss of traffic as a result of generating these revenues.
Strategic port pricing	Used for promotion of specific objectives, such as maximization of use of the facility, attraction of a particular type of cargo, promotion of exports of certain cargoes, etc.
Pricing based on empirical intuition, "what the others do" and past trends	Approximate method which does not necessarily take into account the cost recovery and is believed to provide sufficient contribution for the incomes of the port authority / port operator. Pricing strategy that anticipates the reaction of other ports tariffs resulting from this strategy may or may not satisfy the other previous principles.
Price differentiation	Charging different prices for the same services to different objects of charging ("customers"). For example, charging of berth fees to ships not just according to their physical characteristics, but also according to the type of vessels (e.g. higher fees for tankers, lower for Ro-Ro vessels). Another example is charging different prices of wharfage fees to cargo owners not just according to the tons loaded/unloaded but also according to the value of cargo, or volume they contract with the port operator. Similar method is used for storage fees.



4.1.2 Status of ports

Ports (as physical/infrastructure objects, not simply port companies) in your country have the status of: <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
Strategic assets of transport infrastructure, based on applicable law(s)	
Special importance in the country's development strategies	
Have special legal protection	
Pure profit entities	
Fully privatizable assets (can be sold, including the land)	
No special status	
Other (please explain)	

Table 1: Status of ports

4.1.3 Financing of new investments

Who finances the new investments within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port Authority (own funds)	Port operator	Concessionaire	Rail company	Other (explain in comments)
Port infrastructure								
Internal road infrastructure								
Internal rail infrastructure								
Suprastructure								
Equipment (cranes, etc.)								

Table 2: Financing of new investments

4.1.4 Financing of maintenance of existing assets

Who finances the maintenance of existing assets within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port authority (own funds)	Port operator	Concessionaire	Rail company	Other <i>(explain comments)</i>	in
Port infrastructure									
Internal road infrastructure									
Internal rail infrastructure									
Suprastructure									
Equipment (cranes, etc.)									

Table 3: Financing of maintenance of existing assets

4.1.5 Public subsidies for ports

Do you receive any subsidies (regularly or sometimes) from the public sector? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	Yes				In the past				No
	Through investments	In cash flow	Preferential loans	Other (explain)	Through investments	In cash flow	Preferential loans	Other (explain)	
For port infrastructure									
For port suprastructure									
For port equipment									
For port labour									
For equipment (cranes, etc.)									
Other (explain ³)									

Table 4: Public subsidies for port

³ In the comment section.

4.1.6 Use of revenues/incomes

If you are a public port and if you make any revenues ⁴ /incomes, how are they used?	
<i>(mark the appropriate answer with X, multiple answers allowed)</i>	
To cover fixed and variable costs, the rest transferred to the public (state, municipality...) budget	
To cover only variable costs, the rest transferred to the public (state, municipality...) budget	
Fully transferred to the public (state, municipality...) budget	
Used for further infrastructure investments and/or maintenance	
Used for development projects	
Used for bonuses to the employees	
We make certain revenues but no net positive incomes ⁵	
Other (please explain ⁶)	

Table 5: Use of incomes and revenues

4.1.7 Objectives of port pricing and charging

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives⁷)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Efficient/optimal use of port assets				
Provision of public service ⁸				

⁴ Revenue is the total amount of income generated by the use of infrastructure or services related to the port's primary operations. Income or *net income* is a company's total revenue after all operating costs are deducted or simply *profit*.

⁵ If you select this option, please explain in the comments section on the last page.

⁶ List here and explain in comments section

⁷ For example, port authority cannot have both objectives of public service provision and profit generation for infrastructure fees.

⁸ Where proper functioning of ports is seen as public service or public interest, not necessarily a profitable activity.

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives?)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Cost recovery 1 (operating & maintenance expenses only)				
Cost recovery 2 (1+depreciation)				
Cost recovery 3 (1+2+interest charges on loans)				
Cost recovery 4 (1+2+3+provisions for port development and improvement)				
Cost recovery 5 (1+2+3+4+rate of return)				
Maximising employment				
Minimizing welfare losses				
Maximising throughput				
Pure profit generation (regardless of any expenses) ⁹				
Other (explain)				

Table 6: Port pricing objectives

4.1.8 Approach to port pricing principles

What is your main approach in establishing the port pricing principles? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Economic approach ¹⁰			
Financial approach			
Public body (public good) approach			

Table 7: Approach to port pricing principles

⁹ Usually a port operator's objective in privatized (sold, leased, concessioned) ports where no particular regard is made towards the real cost and where all income from an activity is seen as pure profit (e.g. crane use for loading/unloading).

¹⁰ Please see the definitions

4.1.9 Port pricing principles

On what principles do you base tariffs in your port? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Cost recovery base			
Performance base			
Value (for the user) base			
Empirical intuition and past trends based pricing			

Table 8: Port pricing principles

4.1.10 Standard types of infrastructure fees

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ¹¹	Other (explain)
Berth fees (use of wet side of the quay – ship related)							
Wharfage fees (use of the dry side of the quay – cargo related)							
Navigation aid fees							
Idle ship laying fees (ships not loading/unloading)							
Truck entrance/exit							
Truck parking for loading/unloading at loading/unloading bay							
Truck parking for trucks not loading/unloading							
Train entrance/exit							

¹¹ Shipper or receiver

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ¹¹	Other (explain)
Train use of rail infrastructure for loading/unloading							
Train use of rail infrastructure other than for loading/unloading							
Other (explain)							

Table 9: Standard types of infrastructure fees

4.1.11 Status and unit basis for charging of infrastructure fees

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ¹²	Confidential	Negotiable	Non-negotiable ¹³	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Berth fees (use of wet side of the quay – ship related)					Example: GT and hour used
Wharfage fees (use of the dry side of the quay – cargo related)					
Navigation aid fees					
Idle ship laying fees (ships not loading/unloading)					
Truck entrance/exit					
Truck parking for loading/unloading at loading/unloading bay					
Truck parking for trucks not loading/unloading					
Train entrance/exit					

¹² Published (in any place: black board, info board, web page, regulation, etc.)

¹³ Not „floating“ fees, meaning that their increase or decrease requires an approval/decision or change of regulation by port authority or municipal, provincial or national government

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ¹²	Confidential	Negotiable	Non-negotiable ¹³	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Train use of rail infrastructure for loading/unloading					
Train use of rail infrastructure other than for loading/unloading					
Other (explain)					

Table 10: Status and unit basis for infrastructure fees

4.1.12 Standard types of service fees (cargo related & nautical-technical services)

What are the main/standard service fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if applied in your port	Mark X if service is compulsory	Charged by				Paid by			
			Port authority	Port operator	Tug operator	Government (e.g. for pilots)	Other (explain)	Ship owner	Cargo owner ¹⁴	Other (explain)
Vessel loading/unloading										
Wagon loading/unloading										
Truck loading/unloading										
Warehousing / storage										
Yard handling										
Reception/delivery at the gates										
Other (explain)										
Sea pilotage										
River pilotage										
Towage (port tugs)										
Line handling (fasting/unfasting a vessel)										
Waste removal										
Other (explain)										

Table 11: Standard types of service fees

¹⁴ Shipper or receiver

4.1.13 Status and unit basis for charging of service fees

What is the status of service fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ¹⁵	Confidential	Negotiable	Non-negotiable	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please indicate below)</i>
Vessel loading/unloading					
Wagon loading/unloading					
Truck loading/unloading					
Warehousing / storage					
Yard handling					
Reception/delivery at the gates					
Other (explain)					
Sea pilotage					
River pilotage					
Towage (port tugs)					
Line handling (fasting/unfasting a vessel)					
Waste removal					
Other (explain)					

Table 12: Status and unit basis for charging of service fees

¹⁵ Published (in any place: black board, info board, web page, regulation, etc.)

4.1.14 Price differentiation methods for infrastructure fees

What price differentiation ¹⁶ methods for infrastructure fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Berth fees (use of wet side of the quay – ship related)									
Wharfage fees (use of the dry side of the quay – cargo related)									
Navigation aid fees									
Idle ship laying fees (ships not loading/unloading)									
Truck entrance/exit									
Truck parking for loading/unloading at loading/unloading bay									
Truck parking for trucks not loading/unloading									
Train entrance/exit									
Train use of rail infrastructure for loading/unloading									
Train use of rail infrastructure other than for loading/unloading									
Other (explain)									

Table 13: Price differentiation methods for infrastructure fees

¹⁶ Please see the section of definitions at the beginning

4.1.15 Price differentiation methods for service fees

What price differentiation ¹⁷ methods for service fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Vessel loading/unloading									
Wagon loading/unloading									
Truck loading/unloading									
Warehousing / storage									
Yard handling									
Reception/delivery at the gates									
Other (explain)									
Sea pilotage									
River pilotage									
Towage (port tugs)									
Line handling (fasting/unfasting a vessel)									
Other (explain)									

Table 14: Price differentiation methods for service fees

¹⁷ Ibid.

4.1.16 Setting of infrastructure fees

Who sets the infrastructure fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Berth fees (use of wet side of the quay – ship related)								
Wharfage fees (use of the dry side of the quay – cargo related)								
Navigation aid fees								
Idle ship laying fees (ships not loading/unloading)								
Truck entrance/exit								
Truck parking for loading/unloading at loading/unloading bay								
Truck parking for trucks not loading/unloading								
Train entrance/exit								
Train use of rail infrastructure for loading/unloading								
Train use of rail infrastructure other than for loading/unloading								
Other (explain)								

Table 15: Setting of infrastructure fees

4.1.17 Setting of service fees

Who sets the service fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Vessel loading/unloading								
Wagon loading/unloading								
Truck loading/unloading								
Warehousing / storage								
Yard handling								
Reception/delivery at the gates								
Other (explain)								
Sea pilotage								
River pilotage								
Towage (port tugs)								
Line handling (fasting/unfasting a vessel)								
Other (explain)								

Table 16: Setting of service fees

4.1.18 Regulatory aspects of port tariffs

Regulatory framework for tariffs in your port <i>(mark the appropriate answers with X; any comments in the comment section)</i>	Legal act needed for tariff setting	Regulated minimum (price floor)	Regulated maximum (price cap)	Determined by concession contract	Independent decision of port operator	Other (explain)
Infrastructure fees						
Cargo related service fees						
Nautical-technical service fees						
Other (explain)						

Table 17: Regulatory aspects of port tariffs

4.1.19 Adjustment of port tariffs

How often do you adjust the port tariffs in your port? <i>(mark the appropriate answers with X; multiple answers allowed; any comments in the comment section)</i>	Quarterly	Semesterly	Annually	Multiannual	Do you take into account inflation rates every year?	Other (explain)
Infrastructure fees						
Cargo related service fees						
Nautical-technical service fees						
Other (explain)						

Table 18: Adjustment of port tariffs

4.1.20 Depreciation of port assets

Is the asset subject to depreciation? <i>(mark the appropriate answers with X)</i>	Basis of depreciation							
	<i>(Please fill in only if the asset is subject to depreciation)</i>							
	Mark X where applicable			Period of depreciation (years)	Mark X where applicable			
	Historic or original cost	Present replacement cost	Future replacement cost		Straight line method	Compounded (sinking fund) method	Other (explain)	
Navigation aids								
Capital dredging								
Maintenance dredging								
Breakwaters (seaport)								
Bank protection								
Operational concrete quays								
Non-operational quays								
Steel dolphin piers								
Land								
Filling of land								
Floating cranes								
Quay cranes								
Mobile cranes								
Rubber tyred gantry cranes								
Rail mounted gantry cranes								
Reach stackers								
Forklifts								
Other								

Table 19: Depreciation of port assets

4.1.21 Methodologies for price calculation

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i> Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>
Infrastructure fees <i>(please write your own tariffs below)</i>	
Service fees <i>(please write your own tariffs below)</i>	
Nautical-technical services <i>(please write your own tariffs below)</i>	

Table 20: Methodologies for price calculation

4.1.22 Alternative pricing methods options

Alternative options for pricing of port fees <i>(mark X where you believe that the proposed alternative pricing method is applicable, or for which type of fees you could consider any of the below alternative pricing methods)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Congestion based pricing ¹⁸			
Marginal cost based pricing			
Price differentiation – performance based (on time ¹⁹ and/or volume)			
Price differentiation – based on quality of service ²⁰			
Two-part tariffs 1 (fixed basis + variable time)			
Two-part tariffs 2 (fixed basis plus + variable amount of cargo)			
Cost based pricing (with all its variants)			
Value based pricing			
Auction based pricing – selling port slots forward ²¹			
(Propose yourself)			
...			
...			

Table 21: Alternative port pricing methods

¹⁸ Price increase when congestion degree (demand for port services) is high, decrease when it is low.

¹⁹ This option can maximize throughput and reduce congestion.

²⁰ Based on availability of specialized equipment, dedicated terminals, extended or specialized storage, proximity to production and to markets, depth of access channel, ancillary logistics services, freeport / export processing zone, etc.

²¹ Ports may obtain better information on future demand.

4.1.23 Case study

Please respond to the following simplified case study example (in case of any data are missing, please assume them according to your experience).

Let the following hypothetical cases occur in your port:

- a) Pushed convoy with four barges, each having net tonnage (NT) of 2500 tons, each carrying 1500 tons of wheat, unloads in your port. Pusher has 2800 HP of engine power installed (1 HP = 0.7457 kW). Convoy takes no shore-side power, no water and has no waste to dispose of. Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

- b) Self-propelled barge (MCV), NT = 2800 tons, length overall L_{oa} = 92 m, loads 1200 tons of fertilizers in bulk. After loading, the vessel stays in port for 9 hours, until daylight. No other services are required from the vessel and its crew.

Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

Notes:

Table 22: Case study

4.1.24 Comments

Comments section

(please first state for which table you are giving the comment)

Table 1:

Table 2:

Table n:

Table 23: Comments



5 Austria

5.1 Ennshafen Port

Port authority	Ennshafen OÖ GmbH
Port operator	Ennshafen OÖ GmbH
Date:	1.7.2021
Contact details:	DI Dr. Werner Auer (w.auer@ennshafen.at), Gabriele Ring (g.ring@ennshafen.at)

Please read me first!

Dear Madams and Sirs,

You are viewing a complex Questionnaire on port pricing principles in the Danube Region ports (*hereinafter: Questionnaire*). Its complexity is a result of the attempt to encompass all possible diversities of port governance and operations models in nine different countries along the Danube and a large variety of port pricing models in involved inland waterway and seaports. You will probably note that the port tariffs terminology used in the Questionnaire may not fully reflect the terminology used in your country/port. This is why generic definitions are provided here and you will have an opportunity to adjust and explain a concrete situation in your country/port if it differs from a generic setup used here. Since this Questionnaire encompasses a wide variety of port pricing policies, we kindly encourage you to read it carefully and discuss and fill it together with your (transport?) economists or department in charge of tariff policies. The Questionnaire is given to you with sufficient time before the deadline, so please feel free to take your time filling it. Your best source of information for this Questionnaire is your own experience, knowledge and employees.

The objectives of this Questionnaire are the following:

- to provide an insight into the nature and mechanisms of port tariffs charged by port governing bodies (such as port authorities of whichever form), port operating companies (port/terminal operators) and providers of nautical services (mostly in seaports) such as line handling (berthing/de-berthing, a.k.a. fasting/unfasting), pilotage and towage;
- to identify who finances ports, who charges what and who pays what;
- to attempt to distinguish the nature infrastructure charges (for the use of infrastructure) and service charges (for provision of various services);
- to determine the basis and calculation methodology for each tariff;
- to determine whether the tariffs are calculated on a cost based approach (and what kind of cost), performance based approach, value based approach (i.e. demand based

- approach), strategic principles, (or on any other);
- to assess the level of autonomy and regulation of tariff settings;
 - to determine the level of dynamics of tariffs;
 - to determine the existence of regulated tariff ceiling or floor.

The authors of this Questionnaire remain at your service for any type of clarification.

Thank you.

iC consulenten & DIONYSUS Project team

5.1.1 Definitions

Definitions (for the purposes of this Questionnaire)	
Port tariffs	Common term for all types of charges, dues and fees applicable in ports.
Infrastructure fees	Charged for the use of port infrastructure such as water body, anchorage, wet side of the quay, dry side of the quay ²² , usage of rail or road infrastructure (entrance/exit/parking), vessel laying fee, aids to navigation, etc. These fees are usually charged by the port governing body (e.g. port authority), or concessionaire (depending on the type of concession) and, depending on the country, may be paid by vessel owner/operator (or by agent on their behalf), cargo owner, truck or rail operator. In case of vessel related fees, infrastructure fees are based on carrying capacity of the vessel, Gross Tonnage (GT), Net Tonnage (NT), on vessel length, time spent at berth, actual cargo quantity being loaded/unloaded, etc. Typically charged by port authority (or concessionaire) and paid by the vessel/vehicle owner or cargo owner.
Service fees	Fees charged for the provision of various services, such as loading/unloading (use of cranes and similar transshipment devices), storage, warehousing, yard handling, reception/delivery at gates, etc. Usually charged by port/terminal operator and paid usually by cargo owner (shipper/receiver).
Nautical-technical services fees	Pilotage, towage, line handling (mooring/unmooring or fastening/unfastening), shore-side electricity supply, water supply, etc. Typically charged by service provider or port authority or government (in case of pilotage), and paid by the vessel owner.
Navigation aid fees	Fees charges for the use of navigation aids (NAVAID) such as aids to navigation (AtoN), VTMIS, safety of navigation, lighthouses, navigation buoys, signals, markers, radio beacons, etc. Applicable mostly in seaports.

²² In certain cases, this fee may be split in two, whereas the ship owner pays for the usage of the wet side of the quay (berth) and the cargo owner pays for the usage of the dry side of the quay (berth).

Definitions (for the purposes of this Questionnaire)

Economic approach (to pricing)	Based on marginal costs, taking into consideration the effects on all parties, including benefits derived by others. Marginal costs in port are extremely difficult to define, but to put it simply, they represent the change in total cost associated with the unit change in the level of activity ²³ . However, since marginal costs are not only extremely difficult to define, they are also very difficult to estimate, this approach comes down to favouring the average cost based pricing. In other words, a cost recovery based approach.
Financial approach	Prices set on the basis of accounting costs, to recover fixed and variable costs and to provide an adequate rate of return and certain profit.
Public body approach	Aims to foster local development and economic activities, to maximize throughput, to maintain port services as public good in public interest; often requires subsidies (e.g. to cover at least part of the fixed infrastructure costs).
Cost based pricing	The simplest pricing principle, calculates prices (fees) based on simple cost (fixed, variable or even marginal) recovery, but <u>not including the past investments</u> . Cost based tariffs are used to achieve the marketing objective of maximizing the use of port services and the financial objective of covering the fixed and variable costs of these services.
Cost-plus based pricing	Calculates prices (fees) based on cost (fixed and variable) plus a determined profit margin.
Performance based pricing	Calculates fees based on time efficiency of usage of the service or facility (time a ship spends at berth, time a cargo spends in a base or transit storage, etc.). Promotes efficient behaviour of the users of a facility. Used to achieve the operational objective of maximizing the throughput of port facilities while limiting the level of congestion and to achieve the marketing objective of minimizing the traffic loss owing to congestion.
Value based pricing	Also known as pricing principle based on what-the-traffic-could-bear , but which can be better assessed by the value that users attach to them. Used to meet the financial objective of generating sufficient revenues to cover the ports' costs and the marketing objective of limiting the loss of traffic as a result of generating these revenues.
Strategic port pricing	Used for promotion of specific objectives, such as maximization of use of the facility, attraction of a particular type of cargo, promotion of exports of certain cargoes, etc.

²³ Goss, R.O., Stevens, H. (2001): Marginal Costs in Seaports, *International Journal of Maritime Economics*, Vol. 3, pp.128-138.

Definitions (for the purposes of this Questionnaire)

<p>Pricing based on empirical intuition, “what the others do” and past trends</p>	<p>Approximate method which does not necessarily take into account the cost recovery and is believed to provide sufficient contribution for the incomes of the port authority / port operator. Pricing strategy that anticipates the reaction of other ports tariffs resulting from this strategy may or may not satisfy the other previous principles.</p>
<p>Price differentiation</p>	<p>Charging different prices for the same services to different objects of charging (“customers”). For example, charging of berth fees to ships not just according to their physical characteristics, but also according to the type of vessels (e.g. higher fees for tankers, lower for Ro-Ro vessels). Another example is charging different prices of wharfage fees to cargo owners not just according to the tons loaded/unloaded but also according to the value of cargo, or volume they contract with the port operator. Similar method is used for storage fees.</p>

5.1.2 Status of ports

Ports (as physical/infrastructure objects, not simply port companies) in your country have the status of: <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
Strategic assets of transport infrastructure, based on applicable law(s)	
Special importance in the country's development strategies	X
Have special legal protection	
Pure profit entities	
Fully privatizable assets (can be sold, including the land)	X
No special status (GmbH)	X
Other (please explain)	

Table 24: Status of ports

5.1.3 Financing of new investments

Who finances the new investments within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port Authority (own funds)	Port operator	Concessionaire	Rail company	Other (explain in comments)
Port infrastructure				X				
Internal road infrastructure			X	X				
Internal rail infrastructure				X	X			
Suprastructure				X	X			
Equipment (cranes, etc.)				X	X			

Table 25: Financing of new investments

5.1.4 Financing of maintenance of existing assets

Who finances the maintenance of existing assets within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port authority (own funds)	Port operator	Concessionaire	Rail company	Other <i>(explain in comments)</i>
Port infrastructure				X				
Internal road infrastructure			X	X				
Internal rail infrastructure				X	X			
Suprastructure				X	X			
Equipment (cranes, etc.)				X	X			

Table 26: Financing of maintenance of existing assets

5.1.5 Public subsidies for ports

Do you receive any subsidies (regularly or sometimes) from the public sector? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	Yes				In the past				No
	Through investments	In cash flow	Preferential loans	Other (explain)	Through investments	In cash flow	Preferential loans	Other (explain)	
For port infrastructure		X	X			X	X		
For port suprastructure		X	X			X	X		
For port equipment		X	X			X	X		
For port labour									
For equipment (cranes, etc.)		X	X			X	X		
Other (explain ²⁴)									

Table 27: Public subsidies for port

²⁴ In the comment section.

5.1.6 Use of revenues/incomes

If you are a public port and if you make any revenues ²⁵ /incomes, how are they used? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
To cover fixed and variable costs, the rest transferred to the public (state, municipality...) budget	
To cover only variable costs, the rest transferred to the public (state, municipality...) budget	
Fully transferred to the public (state, municipality...) budget – in future time	(x)
Used for further infrastructure investments and/or maintenance	x
Used for development projects	x
Used for bonuses to the employees	
We make certain revenues but no net positive incomes ²⁶	
Other (please explain ²⁷)	

Table 28: Use of incomes and revenues

5.1.7 Objectives of port pricing and charging

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives²⁸)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Efficient/optimal use of port assets	x	x		
Provision of public service ²⁹				

²⁵ Revenue is the total amount of income generated by the use of infrastructure or services related to the port's primary operations. Income or *net income* is a company's total revenue after all operating costs are deducted or simply *profit*.

²⁶ If you select this option, please explain in the comments section on the last page.

²⁷ List here and explain in comments section

²⁸ For example, port authority cannot have both objectives of public service provision and profit generation for infrastructure fees.

²⁹ Where proper functioning of ports is seen as public service or public interest, not necessarily a profitable activity.

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives²⁸)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Cost recovery 1 (operating & maintenance expenses only)				
Cost recovery 2 (1+depreciation)				
Cost recovery 3 (1+2+interest charges on loans)			X	
Cost recovery 4 (1+2+3+provisions for port development and improvement)				
Cost recovery 5 (1+2+3+4+rate of return)	X	X		
Maximising employment				
Minimizing welfare losses				
Maximising throughput				
Pure profit generation (regardless of any expenses) ³⁰				
Other (explain)				

Table 29: Port pricing objectives

5.1.8 Approach to port pricing principles

What is your main approach in establishing the port pricing principles? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Economic approach ³¹	X	X	X
Financial approach			
Public body (public good) approach			

Table 30: Approach to port pricing principles

³⁰ Usually a port operator's objective in privatized (sold, leased, concessioned) ports where no particular regard is made towards the real cost and where all income from an activity is seen as pure profit (e.g. crane use for loading/unloading).

³¹ Please see the definitions

5.1.9 Port pricing principles

On what principles do you base tariffs in your port? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Cost recovery base			
Performance base			
Value (for the user) base			
Empirical intuition and past trends based pricing	X	X	X

Table 31: Port pricing principles

5.1.10 Standard types of infrastructure fees

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ³²	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X	X			X		
Wharfage fees (use of the dry side of the quay – cargo related)	X	X				X	
Navigation aid fees							
Idle ship laying fees (ships not loading/unloading)	X	X			X		
Truck entrance/exit							
Truck parking for loading/unloading at loading/unloading bay							
Truck parking for trucks not loading/unloading (truck owner)	X	X					X
Train entrance/exit	X			X		X	

³² Shipper or receiver

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ³²	Other (explain)
Train use of rail infrastructure for loading/unloading	X	X	X			X	
Train use of rail infrastructure other than for loading/unloading	X		X			X	
Other (explain)							

Table 32: Standard types of infrastructure fees

5.1.11 Status and unit basis for charging of infrastructure fees

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ³³	Confidential	Negotiable	Non-negotiable ³⁴	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Berth fees (use of wet side of the quay – ship related)	X			X	Ton of cargo
Wharfage fees (use of the dry side of the quay – cargo related)		X		X	Ton of cargo
Navigation aid fees					
Idle ship laying fees (ships not loading/unloading)	X		X		Time used
Truck entrance/exit					
Truck parking for loading/unloading at loading/unloading bay					
Truck parking for trucks not loading/unloading		X	X		Square metres and quality
Train entrance/exit	X			X	Ton of cargo

³³ Published (in any place: black board, info board, web page, regulation, etc.)

³⁴ Not „floating“ fees, meaning that their increase or decrease requires an approval/decision or change of regulation by port authority or municipal, provincial or national government

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ³³	Confidential	Negotiable	Non-negotiable ³⁴	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Train use of rail infrastructure for loading/unloading		X		X	Ton of cargo
Train use of rail infrastructure other than for loading/unloading	X			X	Time and length
Other (explain)					

Table 33: Status and unit basis for infrastructure fees

5.1.12 Standard types of service fees (cargo related & nautical-technical services)

What are the main/standard service fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if applied in your port	Mark X if service is compulsory	Charged by				Paid by			
			Port authority	Port operator	Tug operator	Government (e.g. for pilots)	Other (explain)	Ship owner	Cargo owner ³⁵	Other (explain)
Vessel loading/unloading	X	X	(X)	X					X	
Wagon loading/unloading	X		(X)	X					X	
Truck loading/unloading	X			X					X	
Warehousing / storage	X		X	X					X	
Yard handling	X			X					X	
Reception/delivery at the gates	X			X					X	
Other (explain)										
Sea pilotage										
River pilotage										
Towage (port tugs)										
Line handling (fasting/unfasting a vessel)										
Waste removal	X	X	X					X		
Other (explain)										

Table 34: Standard types of service fees

³⁵ Shipper or receiver

5.1.13 Status and unit basis for charging of service fees

What is the status of service fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ³⁶	Confidential	Negotiable	Non-negotiable	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please indicate below)</i>
Vessel loading/unloading		x	x		Ton of cargo
Wagon loading/unloading		x	x		Ton of cargo
Truck loading/unloading		x	x		Ton of cargo
Warehousing / storage		x	x		Time and quality
Yard handling		x	x		
Reception/delivery at the gates		x	x		
Other (explain)					
Sea pilotage					
River pilotage					
Towage (port tugs)					
Line handling (fasting/unfasting a vessel)					
Waste removal				x	Depends on each case
Other (explain)					

Table 35: Status and unit basis for charging of service fees

³⁶ Published (in any place: black board, info board, web page, regulation, etc.)

5.1.14 Price differentiation methods for infrastructure fees

What price differentiation ³⁷ methods for infrastructure fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X							X	
Wharfage fees (use of the dry side of the quay – cargo related)		X				X			
Navigation aid fees									
Idle ship laying fees (ships not loading/unloading)	X							X	
Truck entrance/exit									
Truck parking for loading/unloading at loading/unloading bay									
Truck parking for trucks not loading/unloading								X	
Train entrance/exit								X	
Train use of rail infrastructure for loading/unloading		X				X			
Train use of rail infrastructure other than for loading/unloading								X	
Other (explain)									

Table 36: Price differentiation methods for infrastructure fees

³⁷ Please see the section of definitions at the beginning

5.1.15 Price differentiation methods for service fees

What price differentiation ³⁸ methods for service fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Vessel loading/unloading		X				X			
Wagon loading/unloading		X				X			
Truck loading/unloading									
Warehousing / storage		X						X	
Yard handling								X	
Reception/delivery at the gates									
Other (explain)									
Sea pilotage									
River pilotage									
Towage (port tugs)									
Line handling (fasting/unfasting a vessel)									
Other (explain)									

Table 37: Price differentiation methods for service fees

³⁸ Ibid.

5.1.16 Setting of infrastructure fees

Who sets the infrastructure fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Berth fees (use of wet side of the quay – ship related)		X						
Wharfage fees (use of the dry side of the quay – cargo related)			X					
Navigation aid fees								
Idle ship laying fees (ships not loading/unloading)		X						
Truck entrance/exit								
Truck parking for loading/unloading at loading/unloading bay								
Truck parking for trucks not loading/unloading			X					
Train entrance/exit					X			
Train use of rail infrastructure for loading/unloading			X		X			
Train use of rail infrastructure other than for loading/unloading					X			
Other (explain)								

Table 38: Setting of infrastructure fees

5.1.17 Setting of service fees

Who sets the service fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Vessel loading/unloading			X		X			
Wagon loading/unloading			X		X			
Truck loading/unloading					X			
Warehousing / storage			X		X			
Yard handling					X			
Reception/delivery at the gates								
Other (explain)								
Sea pilotage								
River pilotage								
Towage (port tugs)								
Line handling (fasting/unfasting a vessel)								
Other (explain)								

Table 39: Setting of service fees

5.1.18 Regulatory aspects of port tariffs

Regulatory framework for tariffs in your port <i>(mark the appropriate answers with X; any comments in the comment section)</i>	Legal act needed for tariff setting	Regulated minimum (price floor)	Regulated maximum (price cap)	Determined by concession contract	Independent decision of port operator	Other (explain)
Infrastructure fees	X					
Cargo related service fees					X	
Nautical-technical service fees					X	
Other (explain)						

Table 40: Regulatory aspects of port tariffs

5.1.19 Adjustment of port tariffs

How often do you adjust the port tariffs in your port? <i>(mark the appropriate answers with X; multiple answers allowed; any comments in the comment section)</i>	Quarterly	Semesterly	Annually	Multiannual	Do you take into account inflation rates every year?	Other (explain)
Infrastructure fees				X		
Cargo related service fees				X		
Nautical-technical service fees				X		
Other (explain)						

Table 41: Adjustment of port tariffs

5.1.20 Depreciation of port assets

Is the asset subject to depreciation? <i>(mark the appropriate answers with X)</i>	Basis of depreciation <i>(Please fill in only if the asset is subject to depreciation)</i>							
	Mark X where applicable			Period of depreciation (years)	Mark X where applicable			
	Historic or original cost	Present replacement cost	Future replacement cost		Straight line method	Compounded (sinking fund) method	Other (explain)	
Navigation aids								
Capital dredging	x	x		50	x			
Maintenance dredging								
Breakwaters (seaport)								
Bank protection								
Operational concrete quays	x	x		50	x			
Non-operational quays	x	x		50	x			
Steel dolphin piers	x	x			x			
Land								
Filling of land	x	x		50	x			
Floating cranes								
Quay cranes	x	x			x			
Mobile cranes	x	x			x			
Rubber tyred gantry cranes								
Rail mounted gantry cranes	x	x			x			
Reach stackers	x	x			x			
Forklifts	x	x			x			
Other								

Table 42: Depreciation of port assets

5.1.21 Methodologies for price calculation

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i>
Infrastructure fees <i>(please write your own tariffs below)</i>	Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>
Wharfage (Ufergeld)	Based on Shipping Act (Schiffahrtsgesetz) and Ordinance of the Federal Ministry of Transport, Innovation and Technology on shipping facilities and other installations and works on waterways ("SchAVO" - Schiffahrtsanlagenverordnung). § 46 "SchAVO" – extract and summary: Costs on average during a period of 5 years for maintenance, operation, interest, payback of construction costs (concerning port basins, mooring equipments, waste and waste oil collection points, sanitary facilities intended for the crew of the ship and drinking water supply, facilities of keeping the port free of ice) are taken for the determination of the tariff.
Demurrage fee (Liegegeld)	The twentieth part of the wharfage
Winter fee (Winterstandsgeld)	Corresponds to the demurrage fee of 20 days
Infrastructure user charge ("IBE" Rail)	Based on Railway act § 67 ff
Service fees <i>(please write your own tariffs below)</i>	
Fee for unloading/loading ("UEE")	empirical based on benchmarks
Nautical-technical services <i>(please write your own tariffs below)</i>	
Drinking water supply fee	Empirical measured + based on public tariffs
Electricity supply fee	Empirical measured + based on public tariffs
Tonnage admeasurement fee	Based on employee costs and time

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i> Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>

Table 43: Methodologies for price calculation

5.1.22 Alternative pricing methods options

Alternative options for pricing of port fees	Infrastructure fees	Service fees (cargo)	Nautical-technical services
<i>(mark X where you believe that the proposed alternative pricing method is applicable, or for which type of fees you could consider any of the below alternative pricing methods)</i>			
Congestion based pricing ³⁹			
Marginal cost based pricing			
Price differentiation – performance based (on time ⁴⁰ and/or volume)	X	X	X
Price differentiation – based on quality of service ⁴¹			
Two-part tariffs 1 (fixed basis + variable time)	X		X
Two-part tariffs 2 (fixed basis plus + variable amount of cargo)	X		X
Cost based pricing (with all its variants)			
Value based pricing			
Auction based pricing – selling port slots forward ⁴²			
(Propose yourself)			
...			
...			

Table 44: Alternative port pricing methods

³⁹ Price increase when congestion degree (demand for port services) is high, decrease when it is low.

⁴⁰ This option can maximize throughput and reduce congestion.

⁴¹ Based on availability of specialized equipment, dedicated terminals, extended or specialized storage, proximity to production and to markets, depth of access channel, ancillary logistics services, freeport / export processing zone, etc.

⁴² Ports may obtain better information on future demand.

5.1.23 Case study

Please respond to the following simplified case study example (in case of any data are missing, please assume them according to your experience).

Let the following hypothetical cases occur in your port:

- c) Pushed convoy with four barges, each having net tonnage (NT) of 2500 tons, each carrying 1500 tons of wheat, unloads in your port. Pusher has 2800 HP of engine power installed (1 HP = 0.7457 kW). Convoy takes no shore-side power, no water and has no waste to dispose of. Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

- 1) Wharfage fee (paid by ship owner, charged by port authority):
loaded tonnage 1500 t x € 0,40 per t = € 600 for each barge
- 2) Fee for vessel unloading (paid by cargo owner, charged by port authority):
loaded tonnage 1500 t x € 0,84 per t = € 1260 for each barge and
- 3) confidential service fees (paid by cargo owner, charged by terminal operator)

- d) Self-propelled barge (MCV), NT = 2800 tons, length overall L_{oa} = 92 m, loads 1200 tons of fertilizers in bulk. After loading, the vessel stays in port for 9 hours, until daylight. No other services are required from the vessel and its crew.

Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

- 1) Wharfage fee (paid by ship owner, charged by port authority):
loaded tonnage 1200 t x € 0,40 per t = € 480
- 2) Fee for vessel unloading (paid by cargo owner, charged by port authority):
loaded tonnage 1200 t x € 0,67 per t = € 804
- 3) confidential service fees (paid by cargo owner, charged by terminal operator)
- 4) no demurrage fee, because after loading/unloading the vessel may stay free in the port till the next day.



Notes:

Table 45: Case study



5.1.24 Comments

Comments section

(please first state for which table you are giving the comment)

Table 1:

Table 2:

Table n:

Table 46: Comments

5.2 Port of Vienna questionnaire

<i>Port authority</i>	Port of Vienna
<i>Port operator</i>	<i>Port of Vienna</i>
<i>Date:</i>	16.09.2021
<i>Contact details:</i>	Marian Timler, MA – Business Development / timler@hafenwien.com

Please read me first!

Dear Madams and Sirs,

You are viewing a complex Questionnaire on port pricing principles in the Danube Region ports (*hereinafter: Questionnaire*). Its complexity is a result of the attempt to encompass all possible diversities of port governance and operations models in nine different countries along the Danube and a large variety of port pricing models in involved inland waterway and seaports. You will probably note that the port tariffs terminology used in the Questionnaire may not fully reflect the terminology used in your country/port. This is why generic definitions are provided here and you will have an opportunity to adjust and explain a concrete situation in your country/port if it differs from a generic setup used here. Since this Questionnaire encompasses a wide variety of port pricing policies, we kindly encourage you to read it carefully and discuss and fill it together with your (transport?) economists or department in charge of tariff policies. The Questionnaire is given to you with sufficient time before the deadline, so please feel free to take your time filling it. Your best source of information for this Questionnaire is your own experience, knowledge and employees.

The objectives of this Questionnaire are the following:

- to provide an insight into the nature and mechanisms of port tariffs charged by port governing bodies (such as port authorities of whichever form), port operating companies (port/terminal operators) and providers of nautical services (mostly in seaports) such as line handling (berthing/de-berthing, a.k.a. fasting/unfasting), pilotage and towage;
- to identify who finances ports, who charges what and who pays what;
- to attempt to distinguish the nature infrastructure charges (for the use of infrastructure) and service charges (for provision of various services);
- to determine the basis and calculation methodology for each tariff;
- to determine whether the tariffs are calculated on a cost based approach (and what kind of cost), performance based approach, value based approach (i.e. demand based approach), strategic principles, (or on any other);
- to assess the level of autonomy and regulation of tariff settings;

- to determine the level of dynamics of tariffs;
- to determine the existence of regulated tariff ceiling or floor.

The authors of this Questionnaire remain at your service for any type of clarification.

Thank you.

iC consulenten & DIONYSUS Project team

5.2.1 Definitions

Definitions (for the purposes of this Questionnaire)	
Port tariffs	Common term for all types of charges, dues and fees applicable in ports.
Infrastructure fees	Charged for the use of port infrastructure such as water body, anchorage, wet side of the quay, dry side of the quay ⁴³ , usage of rail or road infrastructure (entrance/exit/parking), vessel laying fee, aids to navigation, etc. These fees are usually charged by the port governing body (e.g. port authority), or concessionaire (depending on the type of concession) and, depending on the country, may be paid by vessel owner/operator (or by agent on their behalf), cargo owner, truck or rail operator. In case of vessel related fees, infrastructure fees are based on carrying capacity of the vessel, Gross Tonnage (GT), Net Tonnage (NT), on vessel length, time spent at berth, actual cargo quantity being loaded/unloaded, etc. Typically charged by port authority (or concessionaire) and paid by the vessel/vehicle owner or cargo owner.
Service fees	Fees charged for the provision of various services, such as loading/unloading (use of cranes and similar transshipment devices), storage, warehousing, yard handling, reception/delivery at gates, etc. Usually charged by port/terminal operator and paid usually by cargo owner (shipper/receiver).
Nautical-technical services fees	Pilotage, towage, line handling (mooring/unmooring or fastening/unfastening), shore-side electricity supply, water supply, etc. Typically charged by service provider or port authority or government (in case of pilotage), and paid by the vessel owner.
Navigation aid fees	Fees charges for the use of navigation aids (NAVAID) such as aids to navigation (AtoN), VTMIS, safety of navigation, lighthouses, navigation buoys, signals, markers, radio beacons, etc. Applicable mostly in seaports.

⁴³ In certain cases, this fee may be split in two, whereas the ship owner pays for the usage of the wet side of the quay (berth) and the cargo owner pays for the usage of the dry side of the quay (berth).

Definitions (for the purposes of this Questionnaire)

Economic approach (to pricing)	Based on marginal costs, taking into consideration the effects on all parties, including benefits derived by others. Marginal costs in port are extremely difficult to define, but to put it simply, they represent the change in total cost associated with the unit change in the level of activity ⁴⁴ . However, since marginal costs are not only extremely difficult to define, they are also very difficult to estimate, this approach comes down to favouring the average cost based pricing. In other words, a cost recovery based approach.
Financial approach	Prices set on the basis of accounting costs, to recover fixed and variable costs and to provide an adequate rate of return and certain profit.
Public body approach	Aims to foster local development and economic activities, to maximize throughput, to maintain port services as public good in public interest; often requires subsidies (e.g. to cover at least part of the fixed infrastructure costs).
Cost based pricing	The simplest pricing principle, calculates prices (fees) based on simple cost (fixed, variable or even marginal) recovery, but <u>not including the past investments</u> . Cost based tariffs are used to achieve the marketing objective of maximizing the use of port services and the financial objective of covering the fixed and variable costs of these services.
Cost-plus based pricing	Calculates prices (fees) based on cost (fixed and variable) plus a determined profit margin.
Performance based pricing	Calculates fees based on time efficiency of usage of the service or facility (time a ship spends at berth, time a cargo spends in a base or transit storage, etc.). Promotes efficient behaviour of the users of a facility. Used to achieve the operational objective of maximizing the throughput of port facilities while limiting the level of congestion and to achieve the marketing objective of minimizing the traffic loss owing to congestion.
Value based pricing	Also known as pricing principle based on what-the-traffic-could-bear , but which can be better assessed by the value that users attach to them. Used to meet the financial objective of generating sufficient revenues to cover the ports' costs and the marketing objective of limiting the loss of traffic as a result of generating these revenues.
Strategic port pricing	Used for promotion of specific objectives, such as maximization of use of the facility, attraction of a particular type of cargo, promotion of exports of certain cargoes, etc.

⁴⁴ Goss, R.O., Stevens, H. (2001): Marginal Costs in Seaports, *International Journal of Maritime Economics*, Vol. 3, pp.128-138.

Definitions (for the purposes of this Questionnaire)

<p>Pricing based on empirical intuition, “what the others do” and past trends</p>	<p>Approximate method which does not necessarily take into account the cost recovery and is believed to provide sufficient contribution for the incomes of the port authority / port operator. Pricing strategy that anticipates the reaction of other ports tariffs resulting from this strategy may or may not satisfy the other previous principles.</p>
<p>Price differentiation</p>	<p>Charging different prices for the same services to different objects of charging (“customers”). For example, charging of berth fees to ships not just according to their physical characteristics, but also according to the type of vessels (e.g. higher fees for tankers, lower for Ro-Ro vessels). Another example is charging different prices of wharfage fees to cargo owners not just according to the tons loaded/unloaded but also according to the value of cargo, or volume they contract with the port operator. Similar method is used for storage fees.</p>

5.2.2 Status of ports

Ports (as physical/infrastructure objects, not simply port companies) in your country have the status of: <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
Strategic assets of transport infrastructure, based on applicable law(s)	
Special importance in the country's development strategies	X
Have special legal protection	
Pure profit entities	X
Fully privatizable assets (can be sold, including the land)	X
No special status (GmbH)	X
Other (please explain)	

Table 47: Status of ports

5.2.3 Financing of new investments

Who finances the new investments within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port Authority (own funds)	Port operator	Concessionaire	Rail company	Other (explain in comments)
Port infrastructure	X	X	X		X			
Internal road infrastructure					X			
Internal rail infrastructure							X	
Suprastructure					x			
Equipment (cranes, etc.)					x			

Table 48: Financing of new investments

5.2.4 Financing of maintenance of existing assets

Who finances the maintenance of existing assets within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port authority (own funds)	Port operator	Concessionaire	Rail company	Other <i>(explain in comments)</i>
Port infrastructure					X			
Internal road infrastructure					X			
Internal rail infrastructure							X	
Suprastructure					X			
Equipment (cranes, etc.)					X			

Table 49: Financing of maintenance of existing assets

5.2.5 Public subsidies for ports

Do you receive any subsidies (regularly or sometimes) from the public sector? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	Yes				In the past				No
	Through investments	In cash flow	Preferential loans	Other (explain)	Through investments	In cash flow	Preferential loans	Other (explain)	
For port infrastructure		X				X			
For port suprastructure		X				X			
For port equipment		X				X			
For port labour									
For equipment (cranes, etc.)		X				X			
Other (explain ⁴⁵)									

Table 50: Public subsidies for port

⁴⁵ In the comment section.

5.2.6 Use of revenues/incomes

If you are a public port and if you make any revenues ⁴⁶ /incomes, how are they used? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
To cover fixed and variable costs, the rest transferred to the public (state, municipality...) budget	
To cover only variable costs, the rest transferred to the public (state, municipality...) budget	
Fully transferred to the public (state, municipality...) budget	
Used for further infrastructure investments and/or maintenance	X
Used for development projects	X
Used for bonuses to the employees	
We make certain revenues but no net positive incomes ⁴⁷	
Other (please explain ⁴⁸) Fixed transfer Rate to the Owner, annual adjustment	X

Table 51: Use of incomes and revenues

5.2.7 Objectives of port pricing and charging

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives⁴⁹)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Efficient/optimal use of port assets	X	X		
Provision of public service ⁵⁰				

⁴⁶ Revenue is the total amount of income generated by the use of infrastructure or services related to the port's primary operations. Income or *net income* is a company's total revenue after all operating costs are deducted or simply *profit*.

⁴⁷ If you select this option, please explain in the comments section on the last page.

⁴⁸ List here and explain in comments section

⁴⁹ For example, port authority cannot have both objectives of public service provision and profit generation for infrastructure fees.

⁵⁰ Where proper functioning of ports is seen as public service or public interest, not necessarily a profitable activity.

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives⁴⁹)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Cost recovery 1 (operating & maintenance expenses only)				
Cost recovery 2 (1+depreciation)				
Cost recovery 3 (1+2+interest charges on loans)				
Cost recovery 4 (1+2+3+provisions for port development and improvement)				
Cost recovery 5 (1+2+3+4+rate of return)	X	X		
Maximising employment				
Minimizing welfare losses				
Maximising throughput				
Pure profit generation (regardless of any expenses) ⁵¹	X	X		
Other (explain)				

Table 52: Port pricing objectives

5.2.8 Approach to port pricing principles

What is your main approach in establishing the port pricing principles? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Economic approach ⁵²	X	X	
Financial approach			
Public body (public good) approach			X

Table 53: Approach to port pricing principles

⁵¹ Usually a port operator's objective in privatized (sold, leased, concessioned) ports where no particular regard is made towards the real cost and where all income from an activity is seen as pure profit (e.g. crane use for loading/unloading).

⁵² Please see the definitions

5.2.9 Port pricing principles

On what principles do you base tariffs in your port? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Cost recovery base	X	X	X
Performance base			
Value (for the user) base			
Empirical intuition and past trends based pricing	X	X	X

Table 54: Port pricing principles

5.2.10 Standard types of infrastructure fees

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ⁵³	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X		X		X		
Wharfage fees (use of the dry side of the quay – cargo related)	X		X			X	
Navigation aid fees							
Idle ship laying fees (ships not loading/unloading)	X		X		X		
Truck entrance/exit							
Truck parking for loading/unloading at loading/unloading bay							
Truck parking for trucks not loading/unloading (truck owner)	X		X		X		
Train entrance/exit							

⁵³ Shipper or receiver

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ⁵³	Other (explain)
Train use of rail infrastructure for loading/unloading							
Train use of rail infrastructure other than for loading/unloading							
Other (explain)							

Table 55: Standard types of infrastructure fees

5.2.11 Status and unit basis for charging of infrastructure fees

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ⁵⁴	Confidential	Negotiable	Non-negotiable ⁵⁵	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Berth fees (use of wet side of the quay – ship related)	X			X	Ton of cargo
Wharfage fees (use of the dry side of the quay – cargo related)		X	X		Ton of cargo
Navigation aid fees					
Idle ship laying fees (ships not loading/unloading)					
Truck entrance/exit					
Truck parking for loading/unloading at loading/unloading bay					
Truck parking for trucks not loading/unloading		X	X		Square metres and quality
Train entrance/exit					

⁵⁴ Published (in any place: black board, info board, web page, regulation, etc.)

⁵⁵ Not „floating“ fees, meaning that their increase or decrease requires an approval/decision or change of regulation by port authority or municipal, provincial or national government

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ⁵⁴	Confidential	Negotiable	Non-negotiable ⁵⁵	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Train use of rail infrastructure for loading/unloading					
Train use of rail infrastructure other than for loading/unloading					
Other (explain)					

Table 56: Status and unit basis for infrastructure fees

5.2.12 Standard types of service fees (cargo related & nautical-technical services)

What are the main/standard service fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if applied in your port	Mark X if service is compulsory	Charged by				Paid by			
			Port authority	Port operator	Tug operator	Government (e.g. for pilots)	Other (explain)	Ship owner	Cargo owner ⁵⁶	Other (explain)
Vessel loading/unloading	X			X				X		
Wagon loading/unloading	X			X				X		
Truck loading/unloading	X			X				X		
Warehousing / storage	X			X				X		
Yard handling	X			X				X		
Reception/delivery at the gates										
Other (explain)										
Sea pilotage										
River pilotage										
Towage (port tugs)										
Line handling (fasting/unfasting a vessel)										
Waste removal	X		X	X			X			
Other (explain)										

Table 57: Standard types of service fees

⁵⁶ Shipper or receiver

5.2.13 Status and unit basis for charging of service fees

What is the status of service fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ⁵⁷	Confidential	Negotiable	Non-negotiable	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please indicate below)</i>
Vessel loading/unloading		X	X		Ton of cargo
Wagon loading/unloading		X	X		Ton of cargo / per package
Truck loading/unloading		X	X		Ton of cargo / per package
Warehousing / storage		X	X		Time and quality and Tons
Yard handling		X	X		
Reception/delivery at the gates					
Other (explain)					
Sea pilotage					
River pilotage					
Towage (port tugs)					
Line handling (fasting/unfasting a vessel)					
Waste removal		X	X		Depends on each case
Other (explain)					

Table 58: Status and unit basis for charging of service fees

⁵⁷ Published (in any place: black board, info board, web page, regulation, etc.)

5.2.14 Price differentiation methods for infrastructure fees

What price differentiation ⁵⁸ methods for infrastructure fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Berth fees (use of wet side of the quay – ship related)						X			
Wharfage fees (use of the dry side of the quay – cargo related)						X			
Navigation aid fees									
Idle ship laying fees (ships not loading/unloading)	X							X	
Truck entrance/exit									
Truck parking for loading/unloading at loading/unloading bay									
Truck parking for trucks not loading/unloading								X	
Train entrance/exit									
Train use of rail infrastructure for loading/unloading									
Train use of rail infrastructure other than for loading/unloading									
Other (explain)									

Table 59: Price differentiation methods for infrastructure fees

⁵⁸ Please see the section of definitions at the beginning

5.2.15 Price differentiation methods for service fees

What price differentiation ⁵⁹ methods for service fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Vessel loading/unloading		X				X			
Wagon loading/unloading		X				X			
Truck loading/unloading		X				X			
Warehousing / storage		X				X		X	
Yard handling		X				X		X	
Reception/delivery at the gates									
Other (explain)									
Sea pilotage									
River pilotage									
Towage (port tugs)									
Line handling (fasting/unfasting a vessel)									
Other (explain)									

Table 60: Price differentiation methods for service fees

⁵⁹ Ibid.

5.2.16 Setting of infrastructure fees

Who sets the infrastructure fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Berth fees (use of wet side of the quay – ship related)		X						
Wharfage fees (use of the dry side of the quay – cargo related)			X		X			
Navigation aid fees								
Idle ship laying fees (ships not loading/unloading)			X		X			
Truck entrance/exit								
Truck parking for loading/unloading at loading/unloading bay								
Truck parking for trucks not loading/unloading					X			
Train entrance/exit								
Train use of rail infrastructure for loading/unloading								
Train use of rail infrastructure other than for loading/unloading								
Other (explain)								

Table 61: Setting of infrastructure fees

5.2.17 Setting of service fees

Who sets the service fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Vessel loading/unloading			X		X			
Wagon loading/unloading					X			
Truck loading/unloading					X			
Warehousing / storage					X			
Yard handling					X			
Reception/delivery at the gates								
Other (explain)								
Sea pilotage								
River pilotage								
Towage (port tugs)								
Line handling (fasting/unfasting a vessel)								
Other (explain)								

Table 62: Setting of service fees

5.2.18 Regulatory aspects of port tariffs

Regulatory framework for tariffs in your port <i>(mark the appropriate answers with X; any comments in the comment section)</i>	Legal act needed for tariff setting	Regulated minimum (price floor)	Regulated maximum (price cap)	Determined by concession contract	Independent decision of port operator	Other (explain)
Infrastructure fees	X					
Cargo related service fees					X	
Nautical-technical service fees					X	
Other (explain)						

Table 63: Regulatory aspects of port tariffs

5.2.19 Adjustment of port tariffs

How often do you adjust the port tariffs in your port? <i>(mark the appropriate answers with X; multiple answers allowed; any comments in the comment section)</i>	Quarterly	Semesterly	Annually	Multiannual	Do you take into account inflation rates every year?	Other (explain)
Infrastructure fees			X			
Cargo related service fees			X			
Nautical-technical service fees			X			
Other (explain)						

Table 64: Adjustment of port tariffs

5.2.20 Depreciation of port assets

Is the asset subject to depreciation? <i>(mark the appropriate answers with X)</i>	Basis of depreciation <i>(Please fill in only if the asset is subject to depreciation)</i>							
	Mark X where applicable			Period of depreciation (years)	Mark X where applicable			
	Historic or original cost	Present replacement cost	Future replacement cost		Straight line method	Compounded (sinking fund) method	Other (explain)	
Navigation aids								
Capital dredging (no depreciation, expenditure) in Case on filling Land	X	X			20	X		
Maintenance dredging (no depreciation, expenditure)								
Breakwaters (seaport)								
Bank protection								
Operational concrete quays	X		X		40	X		
Non-operational quays	X		X		40	X		
Steel dolphin piers								
Land								
Filling of land	X	X	X	X	20	X		
Floating cranes								
Quay cranes	X	X			20			
Mobile cranes	X	X	X		20			
Rubber tyred gantry cranes								
Rail mounted gantry cranes	X	X			20			
Reach stackers	X	X	X		8			
Forklifts	X	X	X		8			
Other								

Table 65: Depreciation of port assets

5.2.21 Methodologies for price calculation

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i>
Infrastructure fees <i>(please write your own tariffs below)</i>	Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>
Wharfage (Ufergeld)	Based on Shipping Act (Schiffahrtsgesetz) and Ordinance of the Federal Ministry of Transport, Innovation and Technology on shipping facilities and other installations and works on waterways ("SchAVO" - Schiffahrtsanlagenverordnung). § 46 "SchAVO" – extract and summary: Costs on average during a period of 5 years for maintenance, operation, interest, payback of construction costs (concerning port basins, mooring equipments, waste and waste oil collection points, sanitary facilities intended for the crew of the ship and drinking water supply, facilities of keeping the port free of ice) are taken for the determination of the tariff.
Demurrage fee (Liegegeld)	The twentieth part of the wharfage
Winter fee (Winterstandsgeld)	Corresponds to the demurrage fee of 20 days
Infrastructure user charge ("IBE" Rail)	Based on Railway act § 67 ff
Service fees <i>(please write your own tariffs below)</i>	
Fee for unloading/loading ("UEE")	empirical based on benchmarks
Nautical-technical services <i>(please write your own tariffs below)</i>	
Drinking water supply fee	Empirical measured + based on public tariffs
Electricity supply fee	Empirical measured + based on public tariffs
Tonnage admeasurement fee	Based on employee costs and time

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i> Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>

Table 66: Methodologies for price calculation

5.2.22 Alternative pricing methods options

Alternative options for pricing of port fees <i>(mark X where you believe that the proposed alternative pricing method is applicable, or for which type of fees you could consider any of the below alternative pricing methods)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Congestion based pricing ⁶⁰			
Marginal cost based pricing			
Price differentiation – performance based (on time ⁶¹ and/or volume)	X	X	
Price differentiation – based on quality of service ⁶²	X	X	
Two-part tariffs 1 (fixed basis + variable time)	X	X	X
Two-part tariffs 2 (fixed basis plus + variable amount of cargo)	X	X	
Cost based pricing (with all its variants)		X	
Value based pricing		X	
Auction based pricing – selling port slots forward ⁶³			
(Propose yourself)			
...			
...			

Table 67: Alternative port pricing methods

⁶⁰ Price increase when congestion degree (demand for port services) is high, decrease when it is low.

⁶¹ This option can maximize throughput and reduce congestion.

⁶² Based on availability of specialized equipment, dedicated terminals, extended or specialized storage, proximity to production and to markets, depth of access channel, ancillary logistics services, freeport / export processing zone, etc.

⁶³ Ports may obtain better information on future demand.

5.2.23 Case study

Please respond to the following simplified case study example (in case of any data are missing, please assume them according to your experience).

Let the following hypothetical cases occur in your port:

- e) Pushed convoy with four barges, each having net tonnage (NT) of 2500 tons, each carrying 1500 tons of wheat, unloads in your port. Pusher has 2800 HP of engine power installed (1 HP = 0.7457 kW). Convoy takes no shore-side power, no water and has no waste to dispose of. Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

- 4) Berth fee (Ufergeld) (paid by ship owner, charged by port operator):
 loaded tonnage 1500 t x 0,48 € = € 720,- for each barge
- 5) Fee for vessel unloading (paid by cargo owner, charged by port authority):
 loaded tonnage 1500 t x 4 €/per t = € 6000,- for each barge and
- 6) Ancillary expenses (Order must be placed)
- Truck weighing € 0.50 per ton and weighing process
 - Determination of the load weight according to calibrated diving marks, diving mark protocol
 - Sampling of the freight
 - Forwarding insurance € 8,- or 1% of the Invoice amount

- f) Self-propelled barge (MCV), NT = 2800 tons, length overall L_{oa} = 92 m, loads 1200 tons of fertilizers in bulk. After loading, the vessel stays in port for 9 hours, until daylight. No other services are required from the vessel and its crew.
 Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

- 5) Berth fee (Ufergeld) (paid by ship owner, charged by port operator):
 loaded tonnage 1200 t x € 0,48,- per t = € 720,-
- 6) Fee for vessel unloading (paid by cargo owner, charged by port operator):

<p>loaded tonnage 1200 t x € 5,12 to 6,01 (depends on freight quality) per t = € 6144,- to 7212,-</p> <p>7) Ancillary expenses (Order must be placed)</p> <ul style="list-style-type: none">• Truck weighing € 0.50 per ton and weighing process• Determination of the load weight according to calibrated diving marks, diving mark protocol• Sampling of the freight• Forwarding insurance € 8,- or 1% of the Invoice amount <p>8) no demurrage fee, because after loading/unloading the vessel may stay free in the port till the next day.</p>
<p>Notes:</p>

Table 68: Case study

5.2.24 Comments

Comments section

(please first state for which table you are giving the comment)

General Info:

The Port of Vienna has 100% equity, 0% debt.

The three harbor masters of the Port of Vienna are the executive organs of the port authority, which is only available to a limited extent.

The Port of Vienna does not offer any nautical services other than electricity and water supply for the ships.

The port's profit distribution provides a fixed rate, which is annually negotiated. It is distributed to the owner of the port of vienna, the WienHolding GmbH

Dredging is recorded as an expense and therefore has no depreciation or a service life.

Table 69: Comments



6 Slovakia

6.1 Port of Bratislava

Port authority	Verejné prístavy a.s. / Public ports, JSC
Port operator	Slovenska plavba a prístavy a.s.
Date:	19.10.2021
Contact details:	igor.barna@vpas.sk

Please read me first!

Dear Madams and Sirs,

You are viewing a complex Questionnaire on port pricing principles in the Danube Region ports (*hereinafter: Questionnaire*). Its complexity is a result of the attempt to encompass all possible diversities of port governance and operations models in nine different countries along the Danube and a large variety of port pricing models in involved inland waterway and seaports. You will probably note that the port tariffs terminology used in the Questionnaire may not fully reflect the terminology used in your country/port. This is why generic definitions are provided here and you will have an opportunity to adjust and explain a concrete situation in your country/port if it differs from a generic setup used here. Since this Questionnaire encompasses a wide variety of port pricing policies, we kindly encourage you to read it carefully and discuss and fill it together with your (transport?) economists or department in charge of tariff policies. The Questionnaire is given to you with sufficient time before the deadline, so please feel free to take your time filling it. Your best source of information for this Questionnaire is your own experience, knowledge and employees.

The objectives of this Questionnaire are the following:

- to provide an insight into the nature and mechanisms of port tariffs charged by port governing bodies (such as port authorities of whichever form), port operating companies (port/terminal operators) and providers of nautical services (mostly in seaports) such as line handling (berthing/de-berthing, a.k.a. fasting/unfasting), pilotage and towage;
- to identify who finances ports, who charges what and who pays what;
- to attempt to distinguish the nature infrastructure charges (for the use of infrastructure) and service charges (for provision of various services);
- to determine the basis and calculation methodology for each tariff;
- to determine whether the tariffs are calculated on a cost based approach (and what kind of cost), performance based approach, value based approach (i.e. demand based approach), strategic principles, (or on any other);
- to assess the level of autonomy and regulation of tariff settings;
- to determine the level of dynamics of tariffs;

- to determine the existence of regulated tariff ceiling or floor.

The authors of this Questionnaire remain at your service for any type of clarification.

Thank you.

iC consulenten & DIONYSUS Project team

6.1.1 Definitions

Definitions (for the purposes of this Questionnaire)	
Port tariffs	Common term for all types of charges, dues and fees applicable in ports.
Infrastructure fees	Charged for the use of port infrastructure such as water body, anchorage, wet side of the quay, dry side of the quay ⁶⁴ , usage of rail or road infrastructure (entrance/exit/parking), vessel laying fee, aids to navigation, etc. These fees are usually charged by the port governing body (e.g. port authority), or concessionaire (depending on the type of concession) and, depending on the country, may be paid by vessel owner/operator (or by agent on their behalf), cargo owner, truck or rail operator. In case of vessel related fees, infrastructure fees are based on carrying capacity of the vessel, Gross Tonnage (GT), Net Tonnage (NT), on vessel length, time spent at berth, actual cargo quantity being loaded/unloaded, etc. Typically charged by port authority (or concessionaire) and paid by the vessel/vehicle owner or cargo owner.
Service fees	Fees charged for the provision of various services, such as loading/unloading (use of cranes and similar transshipment devices), storage, warehousing, yard handling, reception/delivery at gates, etc. Usually charged by port/terminal operator and paid usually by cargo owner (shipper/receiver).
Nautical-technical services fees	Pilotage, towage, line handling (mooring/unmooring or fastening/unfastening), shore-side electricity supply, water supply, etc. Typically charged by service provider or port authority or government (in case of pilotage), and paid by the vessel owner.
Navigation aid fees	Fees charges for the use of navigation aids (NAVAID) such as aids to navigation (AtoN), VTMS, safety of navigation, lighthouses, navigation buoys, signals, markers, radio beacons, etc. Applicable mostly in seaports.
Economic approach (to pricing)	Based on marginal costs, taking into consideration the effects on all parties, including benefits derived by others. Marginal costs in port are extremely difficult to define, but to put it simply, they represent the change in total cost associated with the unit change in the level of activity ⁶⁵ . However, since marginal costs are not only extremely difficult to define, they are also very difficult to estimate, this approach comes down to favouring the average cost based pricing. In other words, a cost recovery based approach.

⁶⁴ In certain cases, this fee may be split in two, whereas the ship owner pays for the usage of the wet side of the quay (berth) and the cargo owner pays for the usage of the dry side of the quay (berth).

⁶⁵ Goss, R.O., Stevens, H. (2001): Marginal Costs in Seaports, *International Journal of Maritime Economics*, Vol. 3, pp.128-138.

Definitions (for the purposes of this Questionnaire)	
Financial approach	Prices set on the basis of accounting costs, to recover fixed and variable costs and to provide an adequate rate of return and certain profit.
Public body approach	Aims to foster local development and economic activities, to maximize throughput, to maintain port services as public good in public interest; often requires subsidies (e.g. to cover at least part of the fixed infrastructure costs).
Cost based pricing	The simplest pricing principle, calculates prices (fees) based on simple cost (fixed, variable or even marginal) recovery, but <u>not including the past investments</u> . Cost based tariffs are used to achieve the marketing objective of maximizing the use of port services and the financial objective of covering the fixed and variable costs of these services.
Cost-plus based pricing	Calculates prices (fees) based on cost (fixed and variable) plus a determined profit margin.
Performance based pricing	Calculates fees based on time efficiency of usage of the service or facility (time a ship spends at berth, time a cargo spends in a base or transit storage, etc.). Promotes efficient behaviour of the users of a facility. Used to achieve the operational objective of maximizing the throughput of port facilities while limiting the level of congestion and to achieve the marketing objective of minimizing the traffic loss owing to congestion.
Value based pricing	Also known as pricing principle based on what-the-traffic-could-bear , but which can be better assessed by the value that users attach to them. Used to meet the financial objective of generating sufficient revenues to cover the ports' costs and the marketing objective of limiting the loss of traffic as a result of generating these revenues.
Strategic port pricing	Used for promotion of specific objectives, such as maximization of use of the facility, attraction of a particular type of cargo, promotion of exports of certain cargoes, etc.
Pricing based on empirical intuition, "what the others do" and past trends	Approximate method which does not necessarily take into account the cost recovery and is believed to provide sufficient contribution for the incomes of the port authority / port operator. Pricing strategy that anticipates the reaction of other ports tariffs resulting from this strategy may or may not satisfy the other previous principles.
Price differentiation	Charging different prices for the same services to different objects of charging ("customers"). For example, charging of berth fees to ships not just according to their physical characteristics, but also according to the type of vessels (e.g. higher fees for tankers, lower for Ro-Ro vessels). Another example is charging different prices of wharfage fees to cargo owners not just according to the tons loaded/unloaded but also according to the value of cargo, or volume they contract with the port operator. Similar method is used for storage fees.



6.1.2 Status of ports

Ports (as physical/infrastructure objects, not simply port companies) in your country have the status of: <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
Strategic assets of transport infrastructure, based on applicable law(s)	X
Special importance in the country's development strategies	X
Have special legal protection	X
Pure profit entities	
Fully privatizable assets (can be sold, including the land)	
No special status	
Other (please explain)	

Table 70: Status of ports

6.1.3 Financing of new investments

Who finances the new investments within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port Authority (own funds)	Port operator	Concessionaire	Rail company	Other (explain in comments)
Port infrastructure					X			
Internal road infrastructure					X			
Internal rail infrastructure					X			
Suprastructure					X			
Equipment (cranes, etc.)					X			

Table 71: Financing of new investments

6.1.4 Financing of maintenance of existing assets

Who finances the maintenance of existing assets within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port authority (own funds)	Port operator	Concessionaire	Rail company	Other <i>(explain comments)</i>
Port infrastructure					X			
Internal road infrastructure					X			
Internal rail infrastructure					X			
Suprastructure					X			
Equipment (cranes, etc.)					X			

Table 72: Financing of maintenance of existing assets

6.1.5 Public subsidies for ports

Do you receive any subsidies (regularly or sometimes) from the public sector? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	Yes				In the past				No
	Through investments	In cash flow	Preferential loans	Other (explain)	Through investments	In cash flow	Preferential loans	Other (explain)	
For port infrastructure									X
For port suprastructure									X
For port equipment									X
For port labour									X
For equipment (cranes, etc.)									X
Other (explain ⁶⁶)									X

Table 73: Public subsidies for port

⁶⁶ In the comment section.

6.1.6 Use of revenues/incomes

If you are a public port and if you make any revenues ⁶⁷ /incomes, how are they used? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
To cover fixed and variable costs, the rest transferred to the public (state, municipality...) budget	
To cover only variable costs, the rest transferred to the public (state, municipality...) budget	
Fully transferred to the public (state, municipality...) budget	
Used for further infrastructure investments and/or maintenance	X
Used for development projects	
Used for bonuses to the employees	X
We make certain revenues but no net positive incomes ⁶⁸	
Other (please explain ⁶⁹)	

Table 74: Use of incomes and revenues

6.1.7 Objectives of port pricing and charging

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives⁷⁰)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Efficient/optimal use of port assets	X		X	
Provision of public service ⁷¹				
Cost recovery 1 (operating & maintenance expenses only)				

⁶⁷ Revenue is the total amount of income generated by the use of infrastructure or services related to the port's primary operations. Income or *net income* is a company's total revenue after all operating costs are deducted or simply *profit*.

⁶⁸ If you select this option, please explain in the comments section on the last page.

⁶⁹ List here and explain in comments section

⁷⁰ For example, port authority cannot have both objectives of public service provision and profit generation for infrastructure fees.

⁷¹ Where proper functioning of ports is seen as public service or public interest, not necessarily a profitable activity.

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives⁷⁰)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Cost recovery 2 (1+depreciation)				
Cost recovery 3 (1+2+interest charges on loans)				
Cost recovery 4 (1+2+3+provisions for port development and improvement)				
Cost recovery 5 (1+2+3+4+rate of return)				
Maximising employment				
Minimizing welfare losses				
maximising throughput			X	
Pure profit generation (regardless of any expenses) ⁷²		X		
Other (explain)				

Table 75: Port pricing objectives

6.1.8 Approach to port pricing principles

What is your main approach in establishing the port pricing principles? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Economic approach ⁷³			
Financial approach	X	X	X
Public body (public good) approach			

Table 76: Approach to port pricing principles

⁷² Usually a port operator's objective in privatized (sold, leased, concessioned) ports where no particular regard is made towards the real cost and where all income from an activity is seen as pure profit (e.g. crane use for loading/unloading).

⁷³ Please see the definitions

6.1.9 Port pricing principles

On what principles do you base tariffs in your port? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Cost recovery base	X		
Performance base			
Value (for the user) base		X	
Empirical intuition and past trends based pricing			X

Table 77: Port pricing principles

6.1.10 Standard types of infrastructure fees

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ⁷⁴	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X	X					
Wharfage fees (use of the dry side of the quay – cargo related)							
Navigation aid fees							
Idle ship laying fees (ships not loading/unloading)	X	X					
Truck entrance/exit			X				X
Truck parking for loading/unloading at loading/unloading bay							
Truck parking for trucks not loading/unloading	X		X				X
Train entrance/exit	X		X				X

⁷⁴ Shipper or receiver

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ⁷⁴	Other (explain)
Train use of rail infrastructure for loading/unloading	X		X				X
Train use of rail infrastructure other than for loading/unloading	X		X				X
Other (explain)							

Table 78: Standard types of infrastructure fees

6.1.11 Status and unit basis for charging of infrastructure fees

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ⁷⁵	Confidential	Negotiable	Non-negotiable ⁷⁶	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Berth fees (use of wet side of the quay – ship related)	X			X	Example:
Wharfage fees (use of the dry side of the quay – cargo related)					
Navigation aid fees					
Idle ship laying fees (ships not loading/unloading)	X			X	
Truck entrance/exit					
Truck parking for loading/unloading at loading/unloading bay					
Truck parking for trucks not loading/unloading	X		X		TIME USED
Train entrance/exit		X	X		TIME USED

⁷⁵ Published (in any place: black board, info board, web page, regulation, etc.)

⁷⁶ Not „floating“ fees, meaning that their increase or decrease requires an approval/decision or change of regulation by port authority or municipal, provincial or national government

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ⁷⁵	Confidential	Negotiable	Non-negotiable ⁷⁶	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Train use of rail infrastructure for loading/unloading		X	X		NUMBER OF WAGONS
Train use of rail infrastructure other than for loading/unloading		X	X		NUMBER OF WAGONS
Other (explain)					

Table 79: Status and unit basis for infrastructure fees

6.1.12 Standard types of service fees (cargo related & nautical-technical services)

What are the main/standard service fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if applied in your port	Mark X if service is compulsory	Charged by				Paid by			
			Port authority	Port operator	Tug operator	Government (e.g. for pilots)	Other (explain)	Ship owner	Cargo owner ⁷⁷	Other (explain)
Vessel loading/unloading	X			X						X
Wagon loading/unloading	X			X						X
Truck loading/unloading	X			X						X
Warehousing / storage	X			X						X
Yard handling										
Reception/delivery at the gates										
Other (explain)										
Sea pilotage										
River pilotage										
Towage (port tugs)	X			X				X		
Line handling (fasting/unfasting a vessel)										
Waste removal										
Other (explain)										

Table 80: Standard types of service fees

⁷⁷ Shipper or receiver

6.1.13 Status and unit basis for charging of service fees

What is the status of service fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ⁷⁸	Confidential	Negotiable	Non-negotiable	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please indicate below)</i>
Vessel loading/unloading		X	X		QUANTITY
Wagon loading/unloading		X	X		QUANTITY
Truck loading/unloading		X	X		QUANTITY
Warehousing / storage		X	X		QUANTITY /AREA
Yard handling					
Reception/delivery at the gates					
Other (explain)					
Sea pilotage					
River pilotage					
Towage (port tugs)		X		X	NUMBER OF MANOEUVERS
Line handling (fasting/unfasting a vessel)					
Waste removal					
Other (explain)					

Table 81: Status and unit basis for charging of service fees

⁷⁸ Published (in any place: black board, info board, web page, regulation, etc.)

6.1.14 Price differentiation methods for infrastructure fees

What price differentiation ⁷⁹ methods for infrastructure fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Berth fees (use of wet side of the quay – ship related)									
Wharfage fees (use of the dry side of the quay – cargo related)									
Navigation aid fees									
Idle ship laying fees (ships not loading/unloading)									
Truck entrance/exit									
Truck parking for loading/unloading at loading/unloading bay									
Truck parking for trucks not loading/unloading								X	
Train entrance/exit								X	
Train use of rail infrastructure for loading/unloading									X
Train use of rail infrastructure other than for loading/unloading									X
Other (explain)									

Table 82: Price differentiation methods for infrastructure fees

⁷⁹ Please see the section of definitions at the beginning

6.1.15 Price differentiation methods for service fees

What price differentiation ⁸⁰ methods for service fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Vessel loading/unloading		X		X	X	X			
Wagon loading/unloading		X		X	X	X			
Truck loading/unloading		X		X	X	X			
Warehousing / storage		X						X	
Yard handling									
Reception/delivery at the gates									
Other (explain)									
Sea pilotage									
River pilotage									
Towage (port tugs)									X
Line handling (fasting/unfasting a vessel)									
Other (explain)									

Table 83: Price differentiation methods for service fees

⁸⁰ Ibid.

6.1.16 Setting of infrastructure fees

Who sets the infrastructure fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Berth fees (use of wet side of the quay – ship related)								
Wharfage fees (use of the dry side of the quay – cargo related)								
Navigation aid fees								
Idle ship laying fees (ships not loading/unloading)								
Truck entrance/exit								
Truck parking for loading/unloading at loading/unloading bay					X			
Truck parking for trucks not loading/unloading					X			
Train entrance/exit					X			
Train use of rail infrastructure for loading/unloading					X			
Train use of rail infrastructure other than for loading/unloading					X			
Other (explain)								

Table 84: Setting of infrastructure fees

6.1.17 Setting of service fees

Who sets the service fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Vessel loading/unloading					X			
Wagon loading/unloading					X			
Truck loading/unloading					X			
Warehousing / storage					X			
Yard handling								
Reception/delivery at the gates								
Other (explain)								
Sea pilotage								
River pilotage								
Towage (port tugs)					X			
Line handling (fasting/unfasting a vessel)								
Other (explain)								

Table 85: Setting of service fees

6.1.18 Regulatory aspects of port tariffs

Regulatory framework for tariffs in your port <i>(mark the appropriate answers with X; any comments in the comment section)</i>	Legal act needed for tariff setting	Regulated minimum (price floor)	Regulated maximum (price cap)	Determined by concession contract	Independent decision of port operator	Other (explain)
Infrastructure fees					X	
Cargo related service fees					X	
Nautical-technical service fees					X	
Other (explain)						

Table 86: Regulatory aspects of port tariffs

6.1.19 Adjustment of port tariffs

How often do you adjust the port tariffs in your port? <i>(mark the appropriate answers with X; multiple answers allowed; any comments in the comment section)</i>	Quarterly	Semesterly	Annually	Multiannual	Do you take into account inflation rates every year?	Other (explain)
Infrastructure fees			X			
Cargo related service fees			X			
Nautical-technical service fees			X			
Other (explain)						

Table 87: Adjustment of port tariffs

6.1.20 Depreciation of port assets

Is the asset subject to depreciation? (mark the appropriate answers with X)	Basis of depreciation							
	<i>(Please fill in only if the asset is subject to depreciation)</i>							
	Mark X where applicable			Period of depreciation (years)	Mark X where applicable			
	Historic or original cost	Present replacement cost	Future replacement cost		Straight line method	Compounded (sinking fund) method	Other (explain)	
Navigation aids								
Capital dredging								
Maintenance dredging								
Breakwaters (seaport)								
Bank protection								
Operational concrete quays								
Non-operational quays								
Steel dolphin piers								
Land								
Filling of land								
Floating cranes								
Quay cranes								
Mobile cranes								
Rubber tyred gantry cranes								
Rail mounted gantry cranes								
Reach stackers								
Forklifts								
Other								

Table 88: Depreciation of port assets

6.1.21 Methodologies for price calculation

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i> Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>
Infrastructure fees <i>(please write your own tariffs below)</i>	
Service fees <i>(please write your own tariffs below)</i>	
Nautical-technical services <i>(please write your own tariffs below)</i>	

Table 89: Methodologies for price calculation

6.1.22 Alternative pricing methods options

Alternative options for pricing of port fees <i>(mark X where you believe that the proposed alternative pricing method is applicable, or for which type of fees you could consider any of the below alternative pricing methods)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Congestion based pricing ⁸¹		X	
Marginal cost based pricing			
Price differentiation – performance based (on time ⁸² and/or volume)			
Price differentiation – based on quality of service ⁸³			
Two-part tariffs 1 (fixed basis + variable time)			
Two-part tariffs 2 (fixed basis plus + variable amount of cargo)			
Cost based pricing (with all its variants)			
Value based pricing			
Auction based pricing – selling port slots forward ⁸⁴			
(Propose yourself)			
...			
...			

Table 90: Alternative port pricing methods

⁸¹ Price increase when congestion degree (demand for port services) is high, decrease when it is low.

⁸² This option can maximize throughput and reduce congestion.

⁸³ Based on availability of specialized equipment, dedicated terminals, extended or specialized storage, proximity to production and to markets, depth of access channel, ancillary logistics services, freeport / export processing zone, etc.

⁸⁴ Ports may obtain better information on future demand.

6.1.23 Case study

Please respond to the following simplified case study example (in case of any data are missing, please assume them according to your experience).

Let the following hypothetical cases occur in your port:

- g) Pushed convoy with four barges, each having net tonnage (NT) of 2500 tons, each carrying 1500 tons of wheat, unloads in your port. Pusher has 2800 HP of engine power installed (1 HP = 0.7457 kW). Convoy takes no shore-side power, no water and has no waste to dispose of. Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

Unloading:

Tariff: 0,2 Eur/ton (tariff for goods that are not mineral oils)

port fee / barge: 300 Eur

port fees for unloading 4 barges: 1200 Eur + 20 % VAT

Daily stay:

Vessel width: n/a barge width: n/a

Vessel length: n/a barge length: n/a

Tariff: 0,02 Eur / m² / day

Not possible to calculate, necessary data are not provided.

***Transshipment discount:**

301-750 tons – free stay of the vessel for 1 day

751-1200 tons - free stay of the vessel for 2 days

over 1201 tons - free stay of the vessel for 3 days

Since each barge unloaded 1500 tons, no daily fees will be charged for them. Only a tug will pay for stay in the port (0,02 Eur / m² / day)

- h) Self-propelled barge (MCV), NT = 2800 tons, length overall $L_{oa} = 92$ m, loads 1200 tons of fertilizers in bulk. After loading, the vessel stays in port for 9 hours, until daylight. No other services are required from the vessel and its crew.

Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

Loading:

Tariff: 0,2 Eur/ton (tariff for goods that are not mineral oils)

Port fees for loading: 240 Eur + 20 % VAT

Daily stay:

1x self-propelled barge, length 92 m, width n/a

<p>Tariff: 0,02 Eur / m2 / day</p> <p>Number of days: 2 days (daily stay is calculated for each started day)</p> <p>*Transshipment discount:</p> <p>301-750 tons – free stay of the vessel for 1 day</p> <p>751-1200 tons - free stay of the vessel for 2 days</p> <p>over 1201 tons - free stay of the vessel for 3 days</p> <p>Since the vessel has loaded 1200 tons, no daily fees will be charged.</p> <p>Total fees: 240 Eur + 20% VAT</p>
<p>Notes:</p>

Table 91: Case study

6.1.24 Comments

Comments section

(please first state for which table you are giving the comment)

Table 4.1.10 : Fees are payed usually by subject ordering transshipment. Can be cargo broker, carrier, seldom cargo owner.

Table 4.1.14: Number of wagons

Table 4.1.15: Number of manoeuvres

Table 92: Comments



7 Hungary

7.1 Centroport Dunaújváros

Port authority	<i>(write here if you answer the Questionnaire as port authority)</i>
Port operator	Centroport as port operator
Date:	16/09/2021
Contact details:	Capt. Béla Szalma

Please read me first!

Dear Madams and Sirs,

You are viewing a complex Questionnaire on port pricing principles in the Danube Region ports (*hereinafter: Questionnaire*). Its complexity is a result of the attempt to encompass all possible diversities of port governance and operations models in nine different countries along the Danube and a large variety of port pricing models in involved inland waterway and seaports. You will probably note that the port tariffs terminology used in the Questionnaire may not fully reflect the terminology used in your country/port. This is why generic definitions are provided here and you will have an opportunity to adjust and explain a concrete situation in your country/port if it differs from a generic setup used here. Since this Questionnaire encompasses a wide variety of port pricing policies, we kindly encourage you to read it carefully and discuss and fill it together with your (transport?) economists or department in charge of tariff policies. The Questionnaire is given to you with sufficient time before the deadline, so please feel free to take your time filling it. Your best source of information for this Questionnaire is your own experience, knowledge and employees.

The objectives of this Questionnaire are the following:

- to provide an insight into the nature and mechanisms of port tariffs charged by port governing bodies (such as port authorities of whichever form), port operating companies (port/terminal operators) and providers of nautical services (mostly in seaports) such as line handling (berthing/de-berthing, a.k.a. fasting/unfasting), pilotage and towage;
- to identify who finances ports, who charges what and who pays what;
- to attempt to distinguish the nature infrastructure charges (for the use of infrastructure) and service charges (for provision of various services);
- to determine the basis and calculation methodology for each tariff;
- to determine whether the tariffs are calculated on a cost based approach (and what kind of cost), performance based approach, value based approach (i.e. demand based approach), strategic principles, (or on any other);
- to assess the level of autonomy and regulation of tariff settings;
- to determine the level of dynamics of tariffs;

- to determine the existence of regulated tariff ceiling or floor.

The authors of this Questionnaire remain at your service for any type of clarification.

Thank you.

iC consulenten & DIONYSUS Project team

7.1.1 Definitions

Definitions (for the purposes of this Questionnaire)	
Port tariffs	Common term for all types of charges, dues and fees applicable in ports.
Infrastructure fees	Charged for the use of port infrastructure such as water body, anchorage, wet side of the quay, dry side of the quay ⁸⁵ , usage of rail or road infrastructure (entrance/exit/parking), vessel laying fee, aids to navigation, etc. These fees are usually charged by the port governing body (e.g. port authority), or concessionaire (depending on the type of concession) and, depending on the country, may be paid by vessel owner/operator (or by agent on their behalf), cargo owner, truck or rail operator. In case of vessel related fees, infrastructure fees are based on carrying capacity of the vessel, Gross Tonnage (GT), Net Tonnage (NT), on vessel length, time spent at berth, actual cargo quantity being loaded/unloaded, etc. Typically charged by port authority (or concessionaire) and paid by the vessel/vehicle owner or cargo owner.
Service fees	Fees charged for the provision of various services, such as loading/unloading (use of cranes and similar transshipment devices), storage, warehousing, yard handling, reception/delivery at gates, etc. Usually charged by port/terminal operator and paid usually by cargo owner (shipper/receiver).
Nautical-technical services fees	Pilotage, towage, line handling (mooring/unmooring or fastening/unfastening), shore-side electricity supply, water supply, etc. Typically charged by service provider or port authority or government (in case of pilotage), and paid by the vessel owner.
Navigation aid fees	Fees charges for the use of navigation aids (NAVAID) such as aids to navigation (AtoN), VTMS, safety of navigation, lighthouses, navigation buoys, signals, markers, radio beacons, etc. Applicable mostly in seaports.
Economic approach (to pricing)	Based on marginal costs, taking into consideration the effects on all parties, including benefits derived by others. Marginal costs in port are extremely difficult to define, but to put it simply, they represent the change in total cost associated with the unit change in the level of activity ⁸⁶ . However, since marginal costs are not only extremely difficult to define, they are also very difficult to estimate, this approach comes down to favouring the average cost based pricing. In other words, a cost recovery based approach.

⁸⁵ In certain cases, this fee may be split in two, whereas the ship owner pays for the usage of the wet side of the quay (berth) and the cargo owner pays for the usage of the dry side of the quay (berth).

⁸⁶ Goss, R.O., Stevens, H. (2001): Marginal Costs in Seaports, *International Journal of Maritime Economics*, Vol. 3, pp.128-138.

Definitions (for the purposes of this Questionnaire)	
Financial approach	Prices set on the basis of accounting costs, to recover fixed and variable costs and to provide an adequate rate of return and certain profit.
Public body approach	Aims to foster local development and economic activities, to maximize throughput, to maintain port services as public good in public interest; often requires subsidies (e.g. to cover at least part of the fixed infrastructure costs).
Cost based pricing	The simplest pricing principle, calculates prices (fees) based on simple cost (fixed, variable or even marginal) recovery, but <u>not including the past investments</u> . Cost based tariffs are used to achieve the marketing objective of maximizing the use of port services and the financial objective of covering the fixed and variable costs of these services.
Cost-plus based pricing	Calculates prices (fees) based on cost (fixed and variable) plus a determined profit margin.
Performance based pricing	Calculates fees based on time efficiency of usage of the service or facility (time a ship spends at berth, time a cargo spends in a base or transit storage, etc.). Promotes efficient behaviour of the users of a facility. Used to achieve the operational objective of maximizing the throughput of port facilities while limiting the level of congestion and to achieve the marketing objective of minimizing the traffic loss owing to congestion.
Value based pricing	Also known as pricing principle based on what-the-traffic-could-bear , but which can be better assessed by the value that users attach to them. Used to meet the financial objective of generating sufficient revenues to cover the ports' costs and the marketing objective of limiting the loss of traffic as a result of generating these revenues.
Strategic port pricing	Used for promotion of specific objectives, such as maximization of use of the facility, attraction of a particular type of cargo, promotion of exports of certain cargoes, etc.
Pricing based on empirical intuition, "what the others do" and past trends	Approximate method which does not necessarily take into account the cost recovery and is believed to provide sufficient contribution for the incomes of the port authority / port operator. Pricing strategy that anticipates the reaction of other ports tariffs resulting from this strategy may or may not satisfy the other previous principles.
Price differentiation	Charging different prices for the same services to different objects of charging ("customers"). For example, charging of berth fees to ships not just according to their physical characteristics, but also according to the type of vessels (e.g. higher fees for tankers, lower for Ro-Ro vessels). Another example is charging different prices of wharfage fees to cargo owners not just according to the tons loaded/unloaded but also according to the value of cargo, or volume they contract with the port operator. Similar method is used for storage fees.



7.1.2 Status of ports

Ports (as physical/infrastructure objects, not simply port companies) in your country have the status of: <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
Strategic assets of transport infrastructure, based on applicable law(s)	
Special importance in the country's development strategies	X
Have special legal protection	
Pure profit entities	X
Fully privatizable assets (can be sold, including the land)	
No special status	X
Other (please explain)	

Table 93: Status of ports

7.1.3 Financing of new investments

Who finances the new investments within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port Authority (own funds)	Port operator	Concessionaire	Rail company	Other (explain in comments)
Port infrastructure					X	X		
Internal road infrastructure					X	X		
Internal rail infrastructure					X	X		
Suprastructure					X	X		
Equipment (cranes, etc.)					X	X		

Table 94: Financing of new investments

7.1.4 Financing of maintenance of existing assets

Who finances the maintenance of existing assets within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port authority (own funds)	Port operator	Concessionaire	Rail company	Other <i>(explain comments)</i>
Port infrastructure					X	X		
Internal road infrastructure					X	X		
Internal rail infrastructure					X	X		
Suprastructure					X	X		
Equipment (cranes, etc.)					X	X		

Table 95: Financing of maintenance of existing assets

7.1.5 Public subsidies for ports

Do you receive any subsidies (regularly or sometimes) from the public sector? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	Yes				In the past				No
	Through investments	In cash flow	Preferential loans	Other (explain)	Through investments	In cash flow	Preferential loans	Other (explain)	
For port infrastructure									X
For port suprastructure									X
For port equipment									X
For port labour									X
For equipment (cranes, etc.)									X
Other (explain ⁸⁷)									X

Table 96: Public subsidies for port

⁸⁷ In the comment section.

7.1.6 Use of revenues/incomes

If you are a public port and if you make any revenues ⁸⁸ /incomes, how are they used? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
To cover fixed and variable costs, the rest transferred to the public (state, municipality...) budget	
To cover only variable costs, the rest transferred to the public (state, municipality...) budget	
Fully transferred to the public (state, municipality...) budget	
Used for further infrastructure investments and/or maintenance	X
Used for development projects	X
Used for bonuses to the employees	X
We make certain revenues but no net positive incomes ⁸⁹	
Other (please explain ⁹⁰) DIVIDEND	X

Table 97: Use of incomes and revenues

7.1.7 Objectives of port pricing and charging

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives⁹¹)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Efficient/optimal use of port assets	X	X	X	
Provision of public service ⁹²				

⁸⁸ Revenue is the total amount of income generated by the use of infrastructure or services related to the port's primary operations. Income or *net income* is a company's total revenue after all operating costs are deducted or simply *profit*.

⁸⁹ If you select this option, please explain in the comments section on the last page.

⁹⁰ List here and explain in comments section

⁹¹ For example, port authority cannot have both objectives of public service provision and profit generation for infrastructure fees.

⁹² Where proper functioning of ports is seen as public service or public interest, not necessarily a profitable activity.

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives⁹³)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Cost recovery 1 (operating & maintenance expenses only)				
Cost recovery 2 (1+depreciation)				
Cost recovery 3 (1+2+interest charges on loans)				
Cost recovery 4 (1+2+3+provisions for port development and improvement)				
Cost recovery 5 (1+2+3+4+rate of return)				
Maximising employment				
Minimizing welfare losses				
Maximising throughput				
Pure profit generation (regardless of any expenses) ⁹³	X	X	X	
Other (explain)				

Table 98: Port pricing objectives

7.1.8 Approach to port pricing principles

What is your main approach in establishing the port pricing principles? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Economic approach ⁹⁴			
Financial approach	X	X	X
Public body (public good) approach			

Table 99: Approach to port pricing principles

⁹³ Usually a port operator's objective in privatized (sold, leased, concessioned) ports where no particular regard is made towards the real cost and where all income from an activity is seen as pure profit (e.g. crane use for loading/unloading).

⁹⁴ Please see the definitions

7.1.9 Port pricing principles

On what principles do you base tariffs in your port? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Cost recovery base			
Performance base			
Value (for the user) base	X	X	X
Empirical intuition and past trends based pricing			

Table 100: Port pricing principles

7.1.10 Standard types of infrastructure fees

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ⁹⁵	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X				X		
Wharfage fees (use of the dry side of the quay – cargo related)	X		X			X	
Navigation aid fees							
Idle ship laying fees (ships not loading/unloading)	X	X			X		
Truck entrance/exit							
Truck parking for loading/unloading at loading/unloading bay							
Truck parking for trucks not loading/unloading							
Train entrance/exit							

⁹⁵ Shipper or receiver

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ⁹⁵	Other (explain)
Train use of rail infrastructure for loading/unloading	X	X				X	
Train use of rail infrastructure other than for loading/unloading							
Other (explain)							

Table 10I: Standard types of infrastructure fees

7.1.11 Status and unit basis for charging of infrastructure fees

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ⁹⁶	Confidential	Negotiable	Non-negotiable ⁹⁷	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Berth fees (use of wet side of the quay – ship related)	X			X	EUR 0.035/DWCC of the vessel/cday
Wharfage fees (use of the dry side of the quay – cargo related)	X			X	EUR 0,35 pmtto basis cargo
Navigation aid fees					
Idle ship laying fees (ships not loading/unloading)	X			X	50% of port dues
Truck entrance/exit					
Truck parking for loading/unloading at loading/unloading bay					
Truck parking for trucks not loading/unloading					
Train entrance/exit					

⁹⁶ Published (in any place: black board, info board, web page, regulation, etc.)

⁹⁷ Not „floating“ fees, meaning that their increase or decrease requires an approval/decision or change of regulation by port authority or municipal, provincial or national government

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ⁹⁶	Confidential	Negotiable	Non-negotiable ⁹⁷	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Train use of rail infrastructure for loading/unloading		X			on lumpsum basis
Train use of rail infrastructure other than for loading/unloading					
Other (explain)					

Table 102: Status and unit basis for infrastructure fees

7.1.12 Standard types of service fees (cargo related & nautical-technical services)

What are the main/standard service fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if applied in your port	Mark X if service is compulsory	Charged by				Paid by			
			Port authority	Port operator	Tug operator	Government (e.g. for pilots)	Other (explain)	Ship owner	Cargo owner ⁹⁸	Other (explain)
Vessel loading/unloading	X			X					X	
Wagon loading/unloading	X			X					X	
Truck loading/unloading	X			X					X	
Warehousing / storage	X			X					X	
Yard handling										
Reception/delivery at the gates										
Other (explain)										
Sea pilotage										
River pilotage										
Towage (port tugs)	X	X	X					X		
Line handling (fasting/unfasting a vessel)	X		X					X		
Waste removal	X		X					X		
Other (explain)										

Table 103: Standard types of service fees

⁹⁸ Shipper or receiver

7.1.13 Status and unit basis for charging of service fees

What is the status of service fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ⁹⁹	Confidential	Negotiable	Non-negotiable	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please indicate below)</i>
Vessel loading/unloading		X	X		EUR/mto of cargo
Wagon loading/unloading		X	X		EUR/mto of cargo
Truck loading/unloading		X	X		EUR/mto of cargo
Warehousing / storage		X	X		EUR/hold/cday
Yard handling					
Reception/delivery at the gates					
Other (explain)					
Sea pilotage					
River pilotage					
Towage (port tugs)	X			X	EUR/barge (one shift)
Line handling (fasting/unfasting a vessel)					
Waste removal					
Other (explain)					

Table 104: Status and unit basis for charging of service fees

⁹⁹ Published (in any place: black board, info board, web page, regulation, etc.)

7.1.14 Price differentiation methods for infrastructure fees

What price differentiation ¹⁰⁰ methods for infrastructure fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X								
Wharfage fees (use of the dry side of the quay – cargo related)		X			X	X			
Navigation aid fees									
Idle ship laying fees (ships not loading/unloading)	X							X	
Truck entrance/exit									
Truck parking for loading/unloading at loading/unloading bay		X			X	X			
Truck parking for trucks not loading/unloading									
Train entrance/exit									
Train use of rail infrastructure for loading/unloading									Lumpsum
Train use of rail infrastructure other than for loading/unloading									
Other (explain)									

Table 105: Price differentiation methods for infrastructure fees

¹⁰⁰ Please see the section of definitions at the beginning

7.1.15 Price differentiation methods for service fees

What price differentiation ¹⁰¹ methods for service fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Vessel loading/unloading		X			X	X			
Wagon loading/unloading		X			X	X			
Truck loading/unloading		X			X	X			
Warehousing / storage		X				X		X	
Yard handling									
Reception/delivery at the gates									
Other (explain)									
Sea pilotage									
River pilotage									
Towage (port tugs)									No. of shifts
Line handling (fasting/unfasting a vessel)									
Other (explain)									

Table 106: Price differentiation methods for service fees

¹⁰¹ Ibid.

7.1.16 Setting of infrastructure fees

Who sets the infrastructure fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Berth fees (use of wet side of the quay – ship related)			X					
Wharfage fees (use of the dry side of the quay – cargo related)			X					
Navigation aid fees								
Idle ship laying fees (ships not loading/unloading)			X					
Truck entrance/exit								
Truck parking for loading/unloading at loading/unloading bay								
Truck parking for trucks not loading/unloading								
Train entrance/exit								
Train use of rail infrastructure for loading/unloading								
Train use of rail infrastructure other than for loading/unloading								
Other (explain)								

Table 107: Setting of infrastructure fees

7.1.17 Setting of service fees

Who sets the service fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Vessel loading/unloading					X			
Wagon loading/unloading			X					
Truck loading/unloading					X			
Warehousing / storage					X			
Yard handling								
Reception/delivery at the gates								
Other (explain)								
Sea pilotage								
River pilotage								
Towage (port tugs)			X					
Line handling (fasting/unfasting a vessel)								
Other (explain)								

Table 108: Setting of service fees

7.1.18 Regulatory aspects of port tariffs

Regulatory framework for tariffs in your port <i>(mark the appropriate answers with X; any comments in the comment section)</i>	Legal act needed for tariff setting	Regulated minimum (price floor)	Regulated maximum (price cap)	Determined by concession contract	Independent decision of port operator	Other (explain)
Infrastructure fees					X	
Cargo related service fees					X	
Nautical-technical service fees					X	
Other (explain)						

Table 109: Regulatory aspects of port tariffs

7.1.19 Adjustment of port tariffs

How often do you adjust the port tariffs in your port? <i>(mark the appropriate answers with X; multiple answers allowed; any comments in the comment section)</i>	Quarterly	Semesterly	Annually	Multiannual	Do you take into account inflation rates every year?	Other (explain)
Infrastructure fees			X			
Cargo related service fees			X			
Nautical-technical service fees			X			
Other (explain)						

Table 110: Adjustment of port tariffs

7.1.20 Depreciation of port assets

Is the asset subject to depreciation? <i>(mark the appropriate answers with X)</i>	Basis of depreciation							
	<i>(Please fill in only if the asset is subject to depreciation)</i>							
	Mark X where applicable			Period of depreciation (years)	Mark X where applicable			
	Historic or original cost	Present replacement cost	Future replacement cost		Straight line method	Compounded (sinking fund) method	Other (explain)	
Navigation aids								
Capital dredging								
Maintenance dredging	X				X			
Breakwaters (seaport)								
Bank protection								
Operational concrete quays								
Non-operational quays								
Steel dolphin piers								
Land								
Filling of land								
Floating cranes								
Quay cranes	X				X			
Mobile cranes								
Rubber tyred gantry cranes								
Rail mounted gantry cranes								
Reach stackers								
Forklifts	X				X			
Other								

Table III: Depreciation of port assets

7.1.21 Methodologies for price calculation

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i> Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>
Infrastructure fees <i>(please write your own tariffs below)</i>	
Port dues	EUR 0.035/DWCC of the vessel/cday
Berth dues	EUR 0,35 pmto basis cargo
Service fees <i>(please write your own tariffs below)</i>	
Direct loading grain	EUR 2,-pmto
Indirect loading grain	EUR 2,50 pmto
Nautical-technical services <i>(please write your own tariffs below)</i>	

Table 112: Methodologies for price calculation

7.1.22 Alternative pricing methods options

Alternative options for pricing of port fees <i>(mark X where you believe that the proposed alternative pricing method is applicable, or for which type of fees you could consider any of the below alternative pricing methods)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Congestion based pricing ¹⁰²			
Marginal cost based pricing			
Price differentiation – performance based (on time ¹⁰³ and/or volume)		X	
Price differentiation – based on quality of service ¹⁰⁴			
Two-part tariffs 1 (fixed basis + variable time)			
Two-part tariffs 2 (fixed basis plus + variable amount of cargo)			
Cost based pricing (with all its variants)		X	
Value based pricing			
Auction based pricing – selling port slots forward ¹⁰⁵			
(Propose yourself)			
...			
...			

Table 113: Alternative port pricing methods

¹⁰² Price increase when congestion degree (demand for port services) is high, decrease when it is low.

¹⁰³ This option can maximize throughput and reduce congestion.

¹⁰⁴ Based on availability of specialized equipment, dedicated terminals, extended or specialized storage, proximity to production and to markets, depth of access channel, ancillary logistics services, freeport / export processing zone, etc.

¹⁰⁵ Ports may obtain better information on future demand.

7.1.23 Case study

Please respond to the following simplified case study example (in case of any data are missing, please assume them according to your experience).

Let the following hypothetical cases occur in your port:

- i) Pushed convoy with four barges, each having net tonnage (NT) of 2500 tons, each carrying 1500 tons of wheat, unloads in your port. Pusher has 2800 HP of engine power installed (1 HP = 0.7457 kW). Convoy takes no shore-side power, no water and has no waste to dispose of. Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

Port dues: $4 \text{ barges} \times 2.500 \text{ DWCC} \times \text{EUR } 0,035 = \text{EUR } 350,-/\text{day}$

Berth dues: $4 \times 1.500 \text{ mto} \times \text{EUR } 0,35 = \text{EUR } 2.100,-$

- j) Self-propelled barge (MCV), NT = 2800 tons, length overall $L_{oa} = 92 \text{ m}$, loads 1200 tons of fertilizers in bulk. After loading, the vessel stays in port for 9 hours, until daylight. No other services are required from the vessel and its crew.

Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

Port dues: $\text{DWCC } 2.800 \times \text{EUR } 0,035 = \text{EUR } 98,-/\text{day}$

Berth dues: $1.200 \text{ mto} \times \text{EUR } 0,35 = \text{EUR } 420,-$

Notes:

Table 114: Case study

7.1.24 Comments

Comments section

(please first state for which table you are giving the comment)

Table 1:

Table 2:

Table n:

Table 115: Comments

7.2 Port of Budapest-Csepel

Port authority	Freeport of Budapest Logistics Ltd.
Port operator	(write here if you answer the Questionnaire as port operator)
Date:	10/09/2021
Contact details:	Valéria Molnár

Please read me first!

Dear Madams and Sirs,

You are viewing a complex Questionnaire on port pricing principles in the Danube Region ports (*hereinafter: Questionnaire*). Its complexity is a result of the attempt to encompass all possible diversities of port governance and operations models in nine different countries along the Danube and a large variety of port pricing models in involved inland waterway and seaports. You will probably note that the port tariffs terminology used in the Questionnaire may not fully reflect the terminology used in your country/port. This is why generic definitions are provided here and you will have an opportunity to adjust and explain a concrete situation in your country/port if it differs from a generic setup used here. Since this Questionnaire encompasses a wide variety of port pricing policies, we kindly encourage you to read it carefully and discuss and fill it together with your (transport?) economists or department in charge of tariff policies. The Questionnaire is given to you with sufficient time before the deadline, so please feel free to take your time filling it. Your best source of information for this Questionnaire is your own experience, knowledge and employees.

The objectives of this Questionnaire are the following:

- to provide an insight into the nature and mechanisms of port tariffs charged by port governing bodies (such as port authorities of whichever form), port operating companies (port/terminal operators) and providers of nautical services (mostly in seaports) such as line handling (berthing/de-berthing, a.k.a. fasting/unfasting), pilotage and towage;
- to identify who finances ports, who charges what and who pays what;
- to attempt to distinguish the nature infrastructure charges (for the use of infrastructure) and service charges (for provision of various services);
- to determine the basis and calculation methodology for each tariff;
- to determine whether the tariffs are calculated on a cost based approach (and what kind of cost), performance based approach, value based approach (i.e. demand based approach), strategic principles, (or on any other);
- to assess the level of autonomy and regulation of tariff settings;
- to determine the level of dynamics of tariffs;
- to determine the existence of regulated tariff ceiling or floor.

The authors of this Questionnaire remain at your service for any type of clarification.
Thank you.

iC consulenten & DIONYSUS Project team

7.2.1 Definitions

Definitions (for the purposes of this Questionnaire)	
Port tariffs	Common term for all types of charges, dues and fees applicable in ports.
Infrastructure fees	Charged for the use of port infrastructure such as water body, anchorage, wet side of the quay, dry side of the quay ¹⁰⁶ , usage of rail or road infrastructure (entrance/exit/parking), vessel laying fee, aids to navigation, etc. These fees are usually charged by the port governing body (e.g. port authority), or concessionaire (depending on the type of concession) and, depending on the country, may be paid by vessel owner/operator (or by agent on their behalf), cargo owner, truck or rail operator. In case of vessel related fees, infrastructure fees are based on carrying capacity of the vessel, Gross Tonnage (GT), Net Tonnage (NT), on vessel length, time spent at berth, actual cargo quantity being loaded/unloaded, etc. Typically charged by port authority (or concessionaire) and paid by the vessel/vehicle owner or cargo owner.
Service fees	Fees charged for the provision of various services, such as loading/unloading (use of cranes and similar transshipment devices), storage, warehousing, yard handling, reception/delivery at gates, etc. Usually charged by port/terminal operator and paid usually by cargo owner (shipper/receiver).
Nautical-technical services fees	Pilotage, towage, line handling (mooring/unmooring or fastening/unfastening), shore-side electricity supply, water supply, etc. Typically charged by service provider or port authority or government (in case of pilotage), and paid by the vessel owner.

¹⁰⁶ In certain cases, this fee may be split in two, whereas the ship owner pays for the usage of the wet side of the quay (berth) and the cargo owner pays for the usage of the dry side of the quay (berth).

Definitions (for the purposes of this Questionnaire)

Navigation aid fees	Fees charges for the use of navigation aids (NAVAID) such as aids to navigation (AtoN), VTMISS, safety of navigation, lighthouses, navigation buoys, signals, markers, radio beacons, etc. Applicable mostly in seaports.
Economic approach (to pricing)	Based on marginal costs, taking into consideration the effects on all parties, including benefits derived by others. Marginal costs in port are extremely difficult to define, but to put it simply, they represent the change in total cost associated with the unit change in the level of activity ¹⁰⁷ . However, since marginal costs are not only extremely difficult to define, they are also very difficult to estimate, this approach comes down to favouring the average cost based pricing. In other words, a cost recovery based approach.
Financial approach	Prices set on the basis of accounting costs, to recover fixed and variable costs and to provide an adequate rate of return and certain profit.
Public body approach	Aims to foster local development and economic activities, to maximize throughput, to maintain port services as public good in public interest; often requires subsidies (e.g. to cover at least part of the fixed infrastructure costs).
Cost based pricing	The simplest pricing principle, calculates prices (fees) based on simple cost (fixed, variable or even marginal) recovery, but <u>not including the past investments</u> . Cost based tariffs are used to achieve the marketing objective of maximizing the use of port services and the financial objective of covering the fixed and variable costs of these services.
Cost-plus based pricing	Calculates prices (fees) based on cost (fixed and variable) plus a determined profit margin.
Performance based pricing	Calculates fees based on time efficiency of usage of the service or facility (time a ship spends at berth, time a cargo spends in a base or transit storage, etc.). Promotes efficient behaviour of the users of a facility. Used to achieve the operational objective of maximizing the throughput of port facilities while limiting the level of congestion and to achieve the marketing objective of minimizing the traffic loss owing to congestion.
Value based pricing	Also known as pricing principle based on what-the-traffic-could-bear , but which can be better assessed by the value that users attach to them. Used to meet the financial objective of generating sufficient revenues to cover the ports' costs and the marketing objective of limiting the loss of traffic as a result of generating these revenues.

¹⁰⁷ Goss, R.O., Stevens, H. (2001): Marginal Costs in Seaports, *International Journal of Maritime Economics*, Vol. 3, pp.128-138.

Definitions (for the purposes of this Questionnaire)

Strategic port pricing	Used for promotion of specific objectives, such as maximization of use of the facility, attraction of a particular type of cargo, promotion of exports of certain cargoes, etc.
Pricing based on empirical intuition, “what the others do” and past trends	Approximate method which does not necessarily take into account the cost recovery and is believed to provide sufficient contribution for the incomes of the port authority / port operator. Pricing strategy that anticipates the reaction of other ports tariffs resulting from this strategy may or may not satisfy the other previous principles.
Price differentiation	Charging different prices for the same services to different objects of charging (“customers”). For example, charging of berth fees to ships not just according to their physical characteristics, but also according to the type of vessels (e.g. higher fees for tankers, lower for Ro-Ro vessels). Another example is charging different prices of wharfage fees to cargo owners not just according to the tons loaded/unloaded but also according to the value of cargo, or volume they contract with the port operator. Similar method is used for storage fees.

7.2.2 Status of ports

Ports (as physical/infrastructure objects, not simply port companies) in your country have the status of: <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
Strategic assets of transport infrastructure, based on applicable law(s)	X
Special importance in the country's development strategies	X
Have special legal protection	
Pure profit entities	
Fully privatizable assets (can be sold, including the land)	
No special status	
Other (please explain)	

Table 116: Status of ports

7.2.3 Financing of new investments

Who finances the new investments within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port Authority (own funds)	Port operator	Concessionaire	Rail company	Other (explain in comments)
Port infrastructure	X					X		
Internal road infrastructure	X					X		
Internal rail infrastructure	X					X		
Suprastructure						X		
Equipment (cranes, etc.)					X	X		

Table 117: Financing of new investments

7.2.4 Financing of maintenance of existing assets

Who finances the maintenance of existing assets within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port authority (own funds)	Port operator	Concessionaire	Rail company	Other <i>(explain comments)</i>	in
Port infrastructure						X			
Internal road infrastructure						X			
Internal rail infrastructure						X			
Suprastructure						X			
Equipment (cranes, etc.)					X	X			

Table 118: Financing of maintenance of existing assets

7.2.5 Public subsidies for ports

Do you receive any subsidies (regularly or sometimes) from the public sector? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	Yes				In the past				No
	Through investments	In cash flow	Preferential loans	Other (explain)	Through investments	In cash flow	Preferential loans	Other (explain)	
For port infrastructure				X				X	
For port suprastructure				X				X	
For port equipment				X				X	
For port labour									X
For equipment (cranes, etc.)				X				X	
Other (explain ¹⁰⁸)									

Table 119: Public subsidies for port

¹⁰⁸ In the comment section.

7.2.6 Use of revenues/incomes

If you are a public port and if you make any revenues ¹⁰⁹ /incomes, how are they used?	
<i>(mark the appropriate answer with X, multiple answers allowed)</i>	
To cover fixed and variable costs, the rest transferred to the public (state, municipality...) budget	
To cover only variable costs, the rest transferred to the public (state, municipality...) budget	
Fully transferred to the public (state, municipality...) budget	
Used for further infrastructure investments and/or maintenance	X
Used for development projects	X
Used for bonuses to the employees	
We make certain revenues but no net positive incomes ¹¹⁰	
Other (please explain ¹¹¹)	

Table 120: Use of incomes and revenues

7.2.7 Objectives of port pricing and charging

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives¹¹²)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Efficient/optimal use of port assets	X	X	X	
Provision of public service ¹¹³				

¹⁰⁹ Revenue is the total amount of income generated by the use of infrastructure or services related to the port's primary operations. Income or *net income* is a company's total revenue after all operating costs are deducted or simply *profit*.

¹¹⁰ If you select this option, please explain in the comments section on the last page.

¹¹¹ List here and explain in comments section

¹¹² For example, port authority cannot have both objectives of public service provision and profit generation for infrastructure fees.

¹¹³ Where proper functioning of ports is seen as public service or public interest, not necessarily a profitable activity.

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives¹¹²)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Cost recovery 1 (operating & maintenance expenses only)				
Cost recovery 2 (1+depreciation)				
Cost recovery 3 (1+2+interest charges on loans)				
Cost recovery 4 (1+2+3+provisions for port development and improvement)				
Cost recovery 5 (1+2+3+4+rate of return)				
Maximising employment				
Minimizing welfare losses				
Maximising throughput				
Pure profit generation (regardless of any expenses) ¹¹⁴				
Other (explain)				

Table 121: Port pricing objectives

7.2.8 Approach to port pricing principles

What is your main approach in establishing the port pricing principles? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Economic approach ¹¹⁵			
Financial approach	x	x	x
Public body (public good) approach			

Table 122: Approach to port pricing principles

¹¹⁴ Usually a port operator's objective in privatized (sold, leased, concessioned) ports where no particular regard is made towards the real cost and where all income from an activity is seen as pure profit (e.g. crane use for loading/unloading).

¹¹⁵ Please see the definitions

7.2.9 Port pricing principles

On what principles do you base tariffs in your port? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Cost recovery base	X	X	X
Performance base			
Value (for the user) base			
Empirical intuition and past trends based pricing			

Table 123: Port pricing principles

7.2.10 Standard types of infrastructure fees

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ¹¹⁶	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X	X			X		
Wharfage fees (use of the dry side of the quay – cargo related)	X	X				X	
Navigation aid fees	X	X			X		
Idle ship laying fees (ships not loading/unloading)	X	X			X		
Truck entrance/exit							
Truck parking for loading/unloading at loading/unloading bay							
Truck parking for trucks not loading/unloading	X	X					X
Train entrance/exit							

¹¹⁶ Shipper or receiver

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ¹⁶	Other (explain)
Train use of rail infrastructure for loading/unloading	X	X					X
Train use of rail infrastructure other than for loading/unloading	X	X					X
Other (explain)							

Table 124: Standard types of infrastructure fees

7.2.11 Status and unit basis for charging of infrastructure fees

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ¹⁷	Confidential	Negotiable	Non-negotiable ¹⁸	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Berth fees (use of wet side of the quay – ship related)	X				Ship length
Wharfage fees (use of the dry side of the quay – cargo related)	X				ton of cargo loaded/unloaded
Navigation aid fees					
Idle ship laying fees (ships not loading/unloading)					
Truck entrance/exit					
Truck parking for loading/unloading at loading/unloading bay					
Truck parking for trucks not loading/unloading	X				
Train entrance/exit					

¹⁷ Published (in any place: black board, info board, web page, regulation, etc.)

¹⁸ Not „floating“ fees, meaning that their increase or decrease requires an approval/decision or change of regulation by port authority or municipal, provincial or national government

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ¹⁷	Confidential	Negotiable	Non-negotiable ¹⁸	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Train use of rail infrastructure for loading/unloading	x				
Train use of rail infrastructure other than for loading/unloading	x				
Other (explain)					

Table 125: Status and unit basis for infrastructure fees

7.2.12 Standard types of service fees (cargo related & nautical-technical services)

What are the main/standard service fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if applied in your port	Mark X if service is compulsory	Charged by				Paid by			
			Port authority	Port operator	Tug operator	Government (e.g. for pilots)	Other (explain)	Ship owner	Cargo owner ¹¹⁹	Other (explain)
Vessel loading/unloading	X			X				X		
Wagon loading/unloading	X			X				X	X	
Truck loading/unloading	X			X				X	X	
Warehousing / storage	X			X				X		
Yard handling										
Reception/delivery at the gates										
Other (explain)										
Sea pilotage										
River pilotage										
Towage (port tugs)	X		X	X			X			
Line handling (fasting/unfasting a vessel)	X		X				X			
Waste removal										
Other (explain)										

Table 126: Standard types of service fees

¹¹⁹ Shipper or receiver

7.2.13 Status and unit basis for charging of service fees

What is the status of service fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ¹²⁰	Confidential	Negotiable	Non-negotiable	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please indicate below)</i>
Vessel loading/unloading	X				
Wagon loading/unloading		X			
Truck loading/unloading		X			
Warehousing / storage		X			
Yard handling					
Reception/delivery at the gates					
Other (explain)					
Sea pilotage					
River pilotage					
Towage (port tugs)	X				
Line handling (fasting/unfasting a vessel)	X				
Waste removal					
Other (explain)					

Table 127: Status and unit basis for charging of service fees

¹²⁰ Published (in any place: black board, info board, web page, regulation, etc.)

7.2.14 Price differentiation methods for infrastructure fees

What price differentiation ¹²¹ methods for infrastructure fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X							X	
Wharfage fees (use of the dry side of the quay – cargo related)						X			
Navigation aid fees									
Idle ship laying fees (ships not loading/unloading)								X	
Truck entrance/exit									
Truck parking for loading/unloading at loading/unloading bay									
Truck parking for trucks not loading/unloading								X	
Train entrance/exit									
Train use of rail infrastructure for loading/unloading						X			
Train use of rail infrastructure other than for loading/unloading								X	
Other (explain)									

Table 128: Price differentiation methods for infrastructure fees

¹²¹ Please see the section of definitions at the beginning

7.2.15 Price differentiation methods for service fees

What price differentiation ¹²² methods for service fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Vessel loading/unloading	X								
Wagon loading/unloading						X			
Truck loading/unloading						X			
Warehousing / storage			X			X		X	
Yard handling									
Reception/delivery at the gates									
Other (explain)									
Sea pilotage									
River pilotage									
Towage (port tugs)									X
Line handling (fasting/unfasting a vessel)								X	
Other (explain)									

Table 129: Price differentiation methods for service fees

¹²² Ibid.

7.2.16 Setting of infrastructure fees

Who sets the infrastructure fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Berth fees (use of wet side of the quay – ship related)			X					
Wharfage fees (use of the dry side of the quay – cargo related)			X					
Navigation aid fees								
Idle ship laying fees (ships not loading/unloading)			X					
Truck entrance/exit								
Truck parking for loading/unloading at loading/unloading bay								
Truck parking for trucks not loading/unloading			X					
Train entrance/exit								
Train use of rail infrastructure for loading/unloading			X					
Train use of rail infrastructure other than for loading/unloading			X					
Other (explain)								

Table 130: Setting of infrastructure fees

7.2.17 Setting of service fees

Who sets the service fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Vessel loading/unloading					X			
Wagon loading/unloading					X			
Truck loading/unloading					X			
Warehousing / storage					X			
Yard handling								
Reception/delivery at the gates								
Other (explain)								
Sea pilotage								
River pilotage								
Towage (port tugs)			X					
Line handling (fasting/unfasting a vessel)			X					
Other (explain)								

Table 131: Setting of service fees

7.2.18 Regulatory aspects of port tariffs

Regulatory framework for tariffs in your port <i>(mark the appropriate answers with X; any comments in the comment section)</i>	Legal act needed for tariff setting	Regulated minimum (price floor)	Regulated maximum (price cap)	Determined by concession contract	Independent decision of port operator	Other (explain)
Infrastructure fees	X					
Cargo related service fees					X	
Nautical-technical service fees	X					
Other (explain)						

Table 132: Regulatory aspects of port tariffs

7.2.19 Adjustment of port tariffs

How often do you adjust the port tariffs in your port? <i>(mark the appropriate answers with X; multiple answers allowed; any comments in the comment section)</i>	Quarterly	Semesterly	Annually	Multiannual	Do you take into account inflation rates every year?	Other (explain)
Infrastructure fees			X			
Cargo related service fees			X			
Nautical-technical service fees			X			
Other (explain)						

Table 133: Adjustment of port tariffs

7.2.20 Depreciation of port assets

Is the asset subject to depreciation? <i>(mark the appropriate answers with X)</i>	Basis of depreciation						
	<i>(Please fill in only if the asset is subject to depreciation)</i>						
	Mark X where applicable			Period of depreciation (years)	Mark X where applicable		
	Historic or original cost	Present replacement cost	Future replacement cost		Straight line method	Compounded (sinking fund) method	Other (explain)
Navigation aids							
Capital dredging							
Maintenance dredging							
Breakwaters (seaport)							
Bank protection							
Operational concrete quays							
Non-operational quays							
Steel dolphin piers							
Land							
Filling of land							
Floating cranes							
Quay cranes	X	X		X			
Mobile cranes							
Rubber tyred gantry cranes							
Rail mounted gantry cranes							
Reach stackers							
Forklifts							
Other							

Table 134: Depreciation of port assets

7.2.21 Methodologies for price calculation

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i> Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>
Infrastructure fees <i>(please write your own tariffs below)</i>	
Port using fees, for every started day Fee/day Vessels with max. length of 90 m 35 € Vessels with max. length between 90-110 m 55 € Vessels with max. length of over 110 m 65 € Other floating units up to 50 m max. 120 € Other floating units over 50 m 230 € Wintering fee 1.5 times the port using fees	
Service fees <i>(please write your own tariffs below)</i>	
Wharfage Fee/tonne Based on the weight of the loaded and unloaded goods 0,39€	

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i>
<p>but at least (per vessel) 110 €</p> <p>Passenger vehicles loaded in Ro-Ro port, per tonne 0,45€</p> <p>but at least (per vessel) 115 €</p> <p>Other vehicles loaded in Ro-Ro port, per tonne 1€</p> <p>but at least (per vessel) 160 €</p>	<p>Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i></p>
<p>Other vessel service fees</p> <p>Request for a tugboat for the purpose of non-ship transportation (pushing) between the 1638,3 and 1641,9 rkm Danube berths and wharfs or between these berths and a commercial port basin, every hour 150 €</p> <p>Request for a tugboat at wharf, loading docks for help with water pumping, loading cargo or other similar activities, for every started hour 150 €</p>	
<p>Vessel operation (without watchman services) between 6 am - 6 pm, or 6 pm - 6 am, for every started 12 hour period, per vessel operator 110 €</p> <p>Vessel operation (without watchman services) between 6</p>	

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i> Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>
<p>am - 10 pm, for every time period started, per vessel operator 160 €</p> <p>Equalizing (for every started hour) * 92 €</p> <p>Overhead lifting fee (per closing lid and operations)* 11 €</p> <p>* The fee will be charged by the operator of the port's loading area.</p> <p>Costs relating to water drawing per cubic meter 1 €</p> <p>Costs relating to electricity drawing per kilowatt hour 0,35 €</p> <p>Availability fee relating to supply water and electricity (single-time) 10 €</p>	
<p>Nautical-technical services (please write your own tariffs below)</p>	
<p>Pushing fees</p> <p>Within port basin, or quay, berth 205 €</p> <p>Between two commercial port basins 290 €</p>	

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i> Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>
Pushing of vessel intended for loading cargo at loading docks 105 € Removal from loading area due to fast vessel transfer (rapid maneuver) 50 € Between Petróleum basin and a commercial port basin 350 € Between the 1638,3 and 1641,9 rkm area Danube berths and wharfs or between these berths and a commercial port basin 395 €	

Table 135: Methodologies for price calculation

7.2.22 Alternative pricing methods options

Alternative options for pricing of port fees <i>(mark X where you believe that the proposed alternative pricing method is applicable, or for which type of fees you could consider any of the below alternative pricing methods)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Congestion based pricing ¹²³			
Marginal cost based pricing			
Price differentiation – performance based (on time ¹²⁴ and/or volume)			
Price differentiation – based on quality of service ¹²⁵			
Two-part tariffs 1 (fixed basis + variable time)			
Two-part tariffs 2 (fixed basis plus + variable amount of cargo)			
Cost based pricing (with all its variants)	X	X	X
Value based pricing			
Auction based pricing – selling port slots forward ¹²⁶			
(Propose yourself)			
...			
...			

Table 136: Alternative port pricing methods

¹²³ Price increase when congestion degree (demand for port services) is high, decrease when it is low.

¹²⁴ This option can maximize throughput and reduce congestion.

¹²⁵ Based on availability of specialized equipment, dedicated terminals, extended or specialized storage, proximity to production and to markets, depth of access channel, ancillary logistics services, freeport / export processing zone, etc.

¹²⁶ Ports may obtain better information on future demand.

7.2.23 Case study

Please respond to the following simplified case study example (in case of any data are missing, please assume them according to your experience).

Let the following hypothetical cases occur in your port:

- k) Pushed convoy with four barges, each having net tonnage (NT) of 2500 tons, each carrying 1500 tons of wheat, unloads in your port. Pusher has 2800 HP of engine power installed (1 HP = 0.7457 kW). Convoy takes no shore-side power, no water and has no waste to dispose of. Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

Port using fee: Unloading takes 5 days: 3 days charge free, 2 days: 95m barge, 55Eur/day

Subtotal: 110Eur

Wharfage:

4x1500tons unloaded, 0,39/ton: 2340 Eur

Total: 110+2340= 2450 Eur

- l) Self-propelled barge (MCV), NT = 2800 tons, length overall L_{oa} = 92 m, loads 1200 tons of fertilizers in bulk. After loading, the vessel stays in port for 9 hours, until daylight. No other services are required from the vessel and its crew.

Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

Port usage fee: free, as loading/unloading less than 3 days

Wharfage: 1200 tons unloaded, 0,39/ton: 468 Eur

Notes:

Table 137: Case study



8 Croatia

8.1 Port of (Vukovar) questionnaire

Port authority	Port Authority Vukovar
Port operator	All port concessionaire
Date:	
Contact details:	

Please read me first!

Dear Madams and Sirs,

You are viewing a complex Questionnaire on port pricing principles in the Danube Region ports (*hereinafter: Questionnaire*). Its complexity is a result of the attempt to encompass all possible diversities of port governance and operations models in nine different countries along the Danube and a large variety of port pricing models in involved inland waterway and seaports. You will probably note that the port tariffs terminology used in the Questionnaire may not fully reflect the terminology used in your country/port. This is why generic definitions are provided here and you will have an opportunity to adjust and explain a concrete situation in your country/port if it differs from a generic setup used here. Since this Questionnaire encompasses a wide variety of port pricing policies, we kindly encourage you to read it carefully and discuss and fill it together with your (transport?) economists or department in charge of tariff policies. The Questionnaire is given to you with sufficient time before the deadline, so please feel free to take your time filling it. Your best source of information for this Questionnaire is your own experience, knowledge and employees.

The objectives of this Questionnaire are the following:

- to provide an insight into the nature and mechanisms of port tariffs charged by port governing bodies (such as port authorities of whichever form), port operating companies (port/terminal operators) and providers of nautical services (mostly in seaports) such as line handling (berthing/de-berthing, a.k.a. fasting/unfasting), pilotage and towage;
- to identify who finances ports, who charges what and who pays what;
- to attempt to distinguish the nature infrastructure charges (for the use of infrastructure) and service charges (for provision of various services);
- to determine the basis and calculation methodology for each tariff;
- to determine whether the tariffs are calculated on a cost based approach (and what kind of cost), performance based approach, value based approach (i.e. demand based approach), strategic principles, (or on any other);

- to assess the level of autonomy and regulation of tariff settings;
- to determine the level of dynamics of tariffs;
- to determine the existence of regulated tariff ceiling or floor.

The authors of this Questionnaire remain at your service for any type of clarification.

Thank you.

iC consulenten & DIONYSUS Project team

8.1.1 Definitions

Definitions (for the purposes of this Questionnaire)	
Port tariffs	Common term for all types of charges, dues and fees applicable in ports.
Infrastructure fees	Charged for the use of port infrastructure such as water body, anchorage, wet side of the quay, dry side of the quay ¹²⁷ , usage of rail or road infrastructure (entrance/exit/parking), vessel laying fee, aids to navigation, etc. These fees are usually charged by the port governing body (e.g. port authority), or concessionaire (depending on the type of concession) and, depending on the country, may be paid by vessel owner/operator (or by agent on their behalf), cargo owner, truck or rail operator. In case of vessel related fees, infrastructure fees are based on carrying capacity of the vessel, Gross Tonnage (GT), Net Tonnage (NT), on vessel length, time spent at berth, actual cargo quantity being loaded/unloaded, etc. Typically charged by port authority (or concessionaire) and paid by the vessel/vehicle owner or cargo owner.
Service fees	Fees charged for the provision of various services, such as loading/unloading (use of cranes and similar transshipment devices), storage, warehousing, yard handling, reception/delivery at gates, etc. Usually charged by port/terminal operator and paid usually by cargo owner (shipper/receiver).
Nautical-technical services fees	Pilotage, towage, line handling (mooring/unmooring or fastening/unfastening), shore-side electricity supply, water supply, etc. Typically charged by service provider or port authority or government (in case of pilotage), and paid by the vessel owner.
Navigation aid fees	Fees charges for the use of navigation aids (NAVAID) such as aids to navigation (AtoN), VTMIS, safety of navigation, lighthouses, navigation buoys, signals, markers, radio beacons, etc. Applicable mostly in seaports.

¹²⁷ In certain cases, this fee may be split in two, whereas the ship owner pays for the usage of the wet side of the quay (berth) and the cargo owner pays for the usage of the dry side of the quay (berth).

Definitions (for the purposes of this Questionnaire)

Economic approach (to pricing)	Based on marginal costs, taking into consideration the effects on all parties, including benefits derived by others. Marginal costs in port are extremely difficult to define, but to put it simply, they represent the change in total cost associated with the unit change in the level of activity ¹²⁸ . However, since marginal costs are not only extremely difficult to define, they are also very difficult to estimate, this approach comes down to favouring the average cost based pricing. In other words, a cost recovery based approach.
Financial approach	Prices set on the basis of accounting costs, to recover fixed and variable costs and to provide an adequate rate of return and certain profit.
Public body approach	Aims to foster local development and economic activities, to maximize throughput, to maintain port services as public good in public interest; often requires subsidies (e.g. to cover at least part of the fixed infrastructure costs).
Cost based pricing	The simplest pricing principle, calculates prices (fees) based on simple cost (fixed, variable or even marginal) recovery, but <u>not including the past investments</u> . Cost based tariffs are used to achieve the marketing objective of maximizing the use of port services and the financial objective of covering the fixed and variable costs of these services.
Cost-plus based pricing	Calculates prices (fees) based on cost (fixed and variable) plus a determined profit margin.
Performance based pricing	Calculates fees based on time efficiency of usage of the service or facility (time a ship spends at berth, time a cargo spends in a base or transit storage, etc.). Promotes efficient behaviour of the users of a facility. Used to achieve the operational objective of maximizing the throughput of port facilities while limiting the level of congestion and to achieve the marketing objective of minimizing the traffic loss owing to congestion.
Value based pricing	Also known as pricing principle based on what-the-traffic-could-bear , but which can be better assessed by the value that users attach to them. Used to meet the financial objective of generating sufficient revenues to cover the ports' costs and the marketing objective of limiting the loss of traffic as a result of generating these revenues.
Strategic port pricing	Used for promotion of specific objectives, such as maximization of use of the facility, attraction of a particular type of cargo, promotion of exports of certain cargoes, etc.

¹²⁸ Goss, R.O., Stevens, H. (2001): Marginal Costs in Seaports, *International Journal of Maritime Economics*, Vol. 3, pp.128-138.

Definitions (for the purposes of this Questionnaire)

<p>Pricing based on empirical intuition, “what the others do” and past trends</p>	<p>Approximate method which does not necessarily take into account the cost recovery and is believed to provide sufficient contribution for the incomes of the port authority / port operator. Pricing strategy that anticipates the reaction of other ports tariffs resulting from this strategy may or may not satisfy the other previous principles.</p>
<p>Price differentiation</p>	<p>Charging different prices for the same services to different objects of charging (“customers”). For example, charging of berth fees to ships not just according to their physical characteristics, but also according to the type of vessels (e.g. higher fees for tankers, lower for Ro-Ro vessels). Another example is charging different prices of wharfage fees to cargo owners not just according to the tons loaded/unloaded but also according to the value of cargo, or volume they contract with the port operator. Similar method is used for storage fees.</p>

8.1.2 Status of ports

Ports (as physical/infrastructure objects, not simply port companies) in your country have the status of: <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
Strategic assets of transport infrastructure, based on applicable law(s)	X
Special importance in the country's development strategies	X
Have special legal protection	
Pure profit entities	
Fully privatizable assets (can be sold, including the land)	
No special status	
Other (please explain)	

Table 138: Status of ports

8.1.3 Financing of new investments

Who finances the new investments within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port Authority (own funds)	Port operator	Concessionaire	Rail company	Other (explain in comments)
Port infrastructure	X							
Internal road infrastructure	X							
Internal rail infrastructure	X							
Suprastructure					X	X		
Equipment (cranes, etc.)					X	X		

Table 139: Financing of new investments

8.1.4 Financing of maintenance of existing assets

Who finances the maintenance of existing assets within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port authority (own funds)	Port operator	Concessionaire	Rail company	Other <i>(explain in comments)</i>
Port infrastructure	X							
Internal road infrastructure	X							
Internal rail infrastructure	X							
Suprastructure					X	X		
Equipment (cranes, etc.)					X	X		

Table 140: Financing of maintenance of existing assets

8.1.5 Public subsidies for ports

Do you receive any subsidies (regularly or sometimes) from the public sector? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	Yes				In the past				No
	Through investments	In cash flow	Preferential loans	Other (explain)	Through investments	In cash flow	Preferential loans	Other (explain)	
For port infrastructure									X
For port suprastructure									X
For port equipment									X
For port labour									X
For equipment (cranes, etc.)									X
Other (explain ¹²⁹)									X

Table 141: Public subsidies for port

¹²⁹ In the comment section.

8.1.6 Use of revenues/incomes

If you are a public port and if you make any revenues ¹³⁰ /incomes, how are they used? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
To cover fixed and variable costs, the rest transferred to the public (state, municipality...) budget	
To cover only variable costs, the rest transferred to the public (state, municipality...) budget	
Fully transferred to the public (state, municipality...) budget	X
Used for further infrastructure investments and/or maintenance	
Used for development projects	
Used for bonuses to the employees	
We make certain revenues but no net positive incomes ¹³¹	
Other (please explain ¹³²)	

Table 142: Use of incomes and revenues

8.1.7 Objectives of port pricing and charging

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives¹³³)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Efficient/optimal use of port assets				
Provision of public service ¹³⁴	X			

¹³⁰ Revenue is the total amount of income generated by the use of infrastructure or services related to the port's primary operations. Income or *net income* is a company's total revenue after all operating costs are deducted or simply *profit*.

¹³¹ If you select this option, please explain in the comments section on the last page.

¹³² List here and explain in comments section

¹³³ For example, port authority cannot have both objectives of public service provision and profit generation for infrastructure fees.

¹³⁴ Where proper functioning of ports is seen as public service or public interest, not necessarily a profitable activity.

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives¹³³)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Cost recovery 1 (operating & maintenance expenses only)				
Cost recovery 2 (1+depreciation)				
Cost recovery 3 (1+2+interest charges on loans)				
Cost recovery 4 (1+2+3+provisions for port development and improvement)				
Cost recovery 5 (1+2+3+4+rate of return)				
Maximising employment				
Minimizing welfare losses				
Maximising throughput				
Pure profit generation (regardless of any expenses) ¹³⁵				
Other (explain)				

Table 143: Port pricing objectives

8.1.8 Approach to port pricing principles

What is your main approach in establishing the port pricing principles? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Economic approach ¹³⁶			
Financial approach		X	X
Public body (public good) approach	X		

¹³⁵ Usually a port operator's objective in privatized (sold, leased, concessioned) ports where no particular regard is made towards the real cost and where all income from an activity is seen as pure profit (e.g. crane use for loading/unloading).

¹³⁶ Please see the definitions

Table 144: Approach to port pricing principles

8.1.9 Port pricing principles

On what principles do you base tariffs in your port? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Cost recovery base			
Performance base			
Value (for the user) base		X	X
Empirical intuition and past trends based pricing			

Table 145: Port pricing principles

8.1.10 Standard types of infrastructure fees

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ¹³⁷	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X	X			X		
Wharfage fees (use of the dry side of the quay – cargo related)							
Navigation aid fees							
Idle ship laying fees (ships not loading/unloading)	X	X			X		
Truck entrance/exit							
Truck parking for loading/unloading at loading/unloading bay							
Truck parking for trucks not loading/unloading	X		X				Truck owner

¹³⁷ Shipper or receiver

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ¹³⁷	Other (explain)
Train entrance/exit							
Train use of rail infrastructure for loading/unloading							
Train use of rail infrastructure other than for loading/unloading							
Other (explain)	X		X		X		Towing service

Table 146: Standard types of infrastructure fees

8.1.11 Status and unit basis for charging of infrastructure fees

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ¹³⁸	Confidential	Negotiable	Non-negotiable ¹³⁹	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Berth fees (use of wet side of the quay – ship related)	X			X	Example: GT and hour used
Wharfage fees (use of the dry side of the quay – cargo related)					
Navigation aid fees					
Idle ship laying fees (ships not loading/unloading)	X			X	
Truck entrance/exit					
Truck parking for loading/unloading at loading/unloading bay	X				

¹³⁸ Published (in any place: black board, info board, web page, regulation, etc.)

¹³⁹ Not „floating“ fees, meaning that their increase or decrease requires an approval/decision or change of regulation by port authority or municipal, provincial or national government

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ¹³⁸	Confidential	Negotiable	Non-negotiable ¹³⁹	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Truck parking for trucks not loading/unloading	X				
Train entrance/exit					
Train use of rail infrastructure for loading/unloading					
Train use of rail infrastructure other than for loading/unloading					
Other (explain)	X				Towing service

Table 147: Status and unit basis for infrastructure fees

8.1.12 Standard types of service fees (cargo related & nautical-technical services)

What are the main/standard service fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if applied in your port	Mark X if service is compulsory	Charged by				Paid by			
			Port authority	Port operator	Tug operator	Government (e.g. for pilots)	Other (explain)	Ship owner	Cargo owner ¹⁴⁰	Other (explain)
Vessel loading/unloading	X			X					X	
Wagon loading/unloading	X			X					X	
Truck loading/unloading	X			X					X	
Warehousing / storage	X			X					X	
Yard handling	X			X					X	
Reception/delivery at the gates										
Other (explain)										
Sea pilotage										
River pilotage										
Towage (port tugs)	X			X				X		
Line handling (fasting/unfasting a vessel)										
Waste removal										
Other (explain)										

Table 148: Standard types of service fees

¹⁴⁰ Shipper or receiver

8.1.13 Status and unit basis for charging of service fees

What is the status of service fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ¹⁴¹	Confidential	Negotiable	Non-negotiable	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please indicate below)</i>
Vessel loading/unloading	X				
Wagon loading/unloading	X				
Truck loading/unloading	X				
Warehousing / storage	X				
Yard handling		X			
Reception/delivery at the gates					
Other (explain)					
Sea pilotage					
River pilotage					
Towage (port tugs)	X				
Line handling (fasting/unfasting a vessel)					
Waste removal					
Other (explain)					

Table 149: Status and unit basis for charging of service fees

¹⁴¹ Published (in any place: black board, info board, web page, regulation, etc.)

8.1.14 Price differentiation methods for infrastructure fees

What price differentiation ¹⁴² methods for infrastructure fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Berth fees (use of wet side of the quay – ship related)		X							
Wharfage fees (use of the dry side of the quay – cargo related)									Indivisible 24 hour day and indivisible meter of vessel length
Navigation aid fees									
Idle ship laying fees (ships not loading/unloading)									
Truck entrance/exit									
Truck parking for loading/unloading at loading/unloading bay									
Truck parking for trucks not loading/unloading	X							X	
Train entrance/exit									
Train use of rail infrastructure for loading/unloading									
Train use of rail infrastructure other than for loading/unloading									
Other (explain)									Towing service

¹⁴² Please see the section of definitions at the beginning

What price differentiation ¹⁴² methods for infrastructure fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (Volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
									per vessel

Table 150: Price differentiation methods for infrastructure fees

8.1.15 Price differentiation methods for service fees

What price differentiation ¹⁴³ methods for service fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Vessel loading/unloading		X							
Wagon loading/unloading		X							
Truck loading/unloading		X							
Warehousing / storage		X				X		X	
Yard handling		X							
Reception/delivery at the gates									
Other (explain)									
Sea pilotage									
River pilotage									
Towage (port tugs)									Per vessel
Line handling (fasting/unfasting a vessel)									
Other (explain)									

Table 151: Price differentiation methods for service fees

¹⁴³ Ibid.

8.1.16 Setting of infrastructure fees

Who sets the infrastructure fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X	X						
Wharfage fees (use of the dry side of the quay – cargo related)								
Navigation aid fees								
Idle ship laying fees (ships not loading/unloading)	X	X						
Truck entrance/exit								
Truck parking for loading/unloading at loading/unloading bay								
Truck parking for trucks not loading/unloading				X	X			
Train entrance/exit								
Train use of rail infrastructure for loading/unloading								
Train use of rail infrastructure other than for loading/unloading								
Other (explain)								

Table 152: Setting of infrastructure fees

8.1.17 Setting of service fees

Who sets the service fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Vessel loading/unloading				X	X			
Wagon loading/unloading				X	X			
Truck loading/unloading				X	X			
Warehousing / storage				X	X			
Yard handling				X	X			
Reception/delivery at the gates								
Other (explain)								
Sea pilotage								
River pilotage								
Towage (port tugs)				X	X			
Line handling (fasting/unfasting a vessel)								
Other (explain)								

Table 153: Setting of service fees

8.1.18 Regulatory aspects of port tariffs

Regulatory framework for tariffs in your port <i>(mark the appropriate answers with X; any comments in the comment section)</i>	Legal act needed for tariff setting	Regulated minimum (price floor)	Regulated maximum (price cap)	Determined by concession contract	Independent decision of port operator	Other (explain)
Infrastructure fees	X		X			
Cargo related service fees				X		
Nautical-technical service fees				X		
Other (explain)						

Table 154: Regulatory aspects of port tariffs

8.1.19 Adjustment of port tariffs

How often do you adjust the port tariffs in your port? <i>(mark the appropriate answers with X; multiple answers allowed; any comments in the comment section)</i>	Quarterly	Semesterly	Annually	Multiannual	Do you take into account inflation rates every year?	Other (explain)
Infrastructure fees				X		
Cargo related service fees						
Nautical-technical service fees						
Other (explain)						

Table 155: Adjustment of port tariffs

8.1.20 Depreciation of port assets

Is the asset subject to depreciation? <i>(mark the appropriate answers with X)</i>	Basis of depreciation <i>(Please fill in only if the asset is subject to depreciation)</i>							
	Mark X where applicable			Period of depreciation (years)	Mark X where applicable			
	Historic or original cost	Present replacement cost	Future replacement cost		Straight line method	Compounded (sinking fund) method	Other (explain)	
Navigation aids								
Capital dredging								
Maintenance dredging								
Breakwaters (seaport)								
Bank protection								
Operational concrete quays	X	X			20			
Non-operational quays	X	X			20			
Steel dolphin piers								
Land								
Filling of land								
Floating cranes								
Quay cranes								
Mobile cranes								
Rubber tyred gantry cranes								
Rail mounted gantry cranes								
Reach stackers								
Forklifts								
Other								

Table 156: Depreciation of port assets

8.1.21 Methodologies for price calculation

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i> Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>
Infrastructure fees <i>(please write your own tariffs below)</i>	
Due for using of quay	Dues are calculated for the gross weight of cargo, that is, for the loaded/unloaded indivisible ton of cargo
Demurrage due	Indivisible 24-hour day and indivisible meter of vessel length
Service fees <i>(please write your own tariffs below)</i>	
Nautical-technical services <i>(please write your own tariffs below)</i>	

Table 157: Methodologies for price calculation

8.1.22 Alternative pricing methods options

Alternative options for pricing of port fees <i>(mark X where you believe that the proposed alternative pricing method is applicable, or for which type of fees you could consider any of the below alternative pricing methods)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Congestion based pricing ¹⁴⁴			
Marginal cost based pricing			
Price differentiation – performance based (on time ¹⁴⁵ and/or volume)			
Price differentiation – based on quality of service ¹⁴⁶			
Two-part tariffs 1 (fixed basis + variable time)			
Two-part tariffs 2 (fixed basis plus + variable amount of cargo)			
Cost based pricing (with all its variants)			
Value based pricing			
Auction based pricing – selling port slots forward ¹⁴⁷			
(Propose yourself)			
...			
...			

Table 158: Alternative port pricing methods

¹⁴⁴ Price increase when congestion degree (demand for port services) is high, decrease when it is low.

¹⁴⁵ This option can maximize throughput and reduce congestion.

¹⁴⁶ Based on availability of specialized equipment, dedicated terminals, extended or specialized storage, proximity to production and to markets, depth of access channel, ancillary logistics services, freeport / export processing zone, etc.

¹⁴⁷ Ports may obtain better information on future demand.

8.1.23 Case study

Please respond to the following simplified case study example (in case of any data are missing, please assume them according to your experience).

Let the following hypothetical cases occur in your port:

- m) Pushed convoy with four barges, each having net tonnage (NT) of 2500 tons, each carrying 1500 tons of wheat, unloads in your port. Pusher has 2800 HP of engine power installed (1 HP = 0.7457 kW). Convoy takes no shore-side power, no water and has no waste to dispose of. Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

Due for using of quay is calculated for the gross weight of cargo, that is, for the loaded/unloaded indivisible ton of cargo.

Port Due for using of quay = Unloaded wheat in tons x unit price for bulk cargo

Quantity of wheat = 1500 tons

Unit price for bulk cargo = 0,31 EUR per ton

Por Due=1500x0,31=465 EUR

- n) Self-propelled barge (MCV), NT = 2800 tons, length overall L_{oa} = 92 m, loads 1200 tons of fertilizers in bulk. After loading, the vessel stays in port for 9 hours, until daylight. No other services are required from the vessel and its crew.

Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

Due for using of quay is calculated for the gross weight of cargo, that is, for the loaded/unloaded indivisible ton of cargo.

Port Due for using of quay = Loaded fertilizers in tons x unit price for bulk cargo

Quantity of fertilizers = 1200 tons

Unit price for bulk cargo = 0,31 EUR per ton

Por Due=1200x0,31=372 EUR

Notes:

Table 159: Case study

8.1.24 Comments

Comments section

(please first state for which table you are giving the comment)

Table 1:

Table 2:

Table n:

Table 160: Comments



9 Serbia

9.1 All ports

Port authority	Port Governance Agency
Port operator	(write here if you answer the Questionnaire as port operator)
Date:	
Contact details:	

Please read me first!

Dear Madams and Sirs,

You are viewing a complex Questionnaire on port pricing principles in the Danube Region ports (*hereinafter: Questionnaire*). Its complexity is a result of the attempt to encompass all possible diversities of port governance and operations models in nine different countries along the Danube and a large variety of port pricing models in involved inland waterway and seaports. You will probably note that the port tariffs terminology used in the Questionnaire may not fully reflect the terminology used in your country/port. This is why generic definitions are provided here and you will have an opportunity to adjust and explain a concrete situation in your country/port if it differs from a generic setup used here. Since this Questionnaire encompasses a wide variety of port pricing policies, we kindly encourage you to read it carefully and discuss and fill it together with your (transport?) economists or department in charge of tariff policies. The Questionnaire is given to you with sufficient time before the deadline, so please feel free to take your time filling it. Your best source of information for this Questionnaire is your own experience, knowledge and employees.

The objectives of this Questionnaire are the following:

- to provide an insight into the nature and mechanisms of port tariffs charged by port governing bodies (such as port authorities of whichever form), port operating companies (port/terminal operators) and providers of nautical services (mostly in seaports) such as line handling (berthing/de-berthing, a.k.a. fasting/unfasting), pilotage and towage;
- to identify who finances ports, who charges what and who pays what;
- to attempt to distinguish the nature infrastructure charges (for the use of infrastructure) and service charges (for provision of various services);
- to determine the basis and calculation methodology for each tariff;
- to determine whether the tariffs are calculated on a cost based approach (and what kind of cost), performance based approach, value based approach (i.e. demand based approach), strategic principles, (or on any other);
- to assess the level of autonomy and regulation of tariff settings;
- to determine the level of dynamics of tariffs;

- to determine the existence of regulated tariff ceiling or floor.

The authors of this Questionnaire remain at your service for any type of clarification.

Thank you.

iC consulenten & DIONYSUS Project team

9.1.1 Definitions

Definitions (for the purposes of this Questionnaire)	
Port tariffs	Common term for all types of charges, dues and fees applicable in ports.
Infrastructure fees	Charged for the use of port infrastructure such as water body, anchorage, wet side of the quay, dry side of the quay ¹⁴⁸ , usage of rail or road infrastructure (entrance/exit/parking), vessel laying fee, aids to navigation, etc. These fees are usually charged by the port governing body (e.g. port authority), or concessionaire (depending on the type of concession) and, depending on the country, may be paid by vessel owner/operator (or by agent on their behalf), cargo owner, truck or rail operator. In case of vessel related fees, infrastructure fees are based on carrying capacity of the vessel, Gross Tonnage (GT), Net Tonnage (NT), on vessel length, time spent at berth, actual cargo quantity being loaded/unloaded, etc. Typically charged by port authority (or concessionaire) and paid by the vessel/vehicle owner or cargo owner.
Service fees	Fees charged for the provision of various services, such as loading/unloading (use of cranes and similar transshipment devices), storage, warehousing, yard handling, reception/delivery at gates, etc. Usually charged by port/terminal operator and paid usually by cargo owner (shipper/receiver).
Nautical-technical services fees	Pilotage, towage, line handling (mooring/unmooring or fastening/unfastening), shore-side electricity supply, water supply, etc. Typically charged by service provider or port authority or government (in case of pilotage), and paid by the vessel owner.
Navigation aid fees	Fees charges for the use of navigation aids (NAVAID) such as aids to navigation (AtoN), VTMS, safety of navigation, lighthouses, navigation buoys, signals, markers, radio beacons, etc. Applicable mostly in seaports.
Economic approach (to pricing)	Based on marginal costs, taking into consideration the effects on all parties, including benefits derived by others. Marginal costs in port are extremely difficult to define, but to put it simply, they represent the change in total cost associated with the unit change in the level of activity ¹⁴⁹ . However, since marginal costs are not only extremely difficult to define, they are also very difficult to estimate, this approach comes down to favouring the average cost based pricing. In other words, a cost recovery based approach.

¹⁴⁸ In certain cases, this fee may be split in two, whereas the ship owner pays for the usage of the wet side of the quay (berth) and the cargo owner pays for the usage of the dry side of the quay (berth).

¹⁴⁹ Goss, R.O., Stevens, H. (2001): Marginal Costs in Seaports, *International Journal of Maritime Economics*, Vol. 3, pp.128-138.

Definitions (for the purposes of this Questionnaire)	
Financial approach	Prices set on the basis of accounting costs, to recover fixed and variable costs and to provide an adequate rate of return and certain profit.
Public body approach	Aims to foster local development and economic activities, to maximize throughput, to maintain port services as public good in public interest; often requires subsidies (e.g. to cover at least part of the fixed infrastructure costs).
Cost based pricing	The simplest pricing principle, calculates prices (fees) based on simple cost (fixed, variable or even marginal) recovery, but <u>not including the past investments</u> . Cost based tariffs are used to achieve the marketing objective of maximizing the use of port services and the financial objective of covering the fixed and variable costs of these services.
Cost-plus based pricing	Calculates prices (fees) based on cost (fixed and variable) plus a determined profit margin.
Performance based pricing	Calculates fees based on time efficiency of usage of the service or facility (time a ship spends at berth, time a cargo spends in a base or transit storage, etc.). Promotes efficient behaviour of the users of a facility. Used to achieve the operational objective of maximizing the throughput of port facilities while limiting the level of congestion and to achieve the marketing objective of minimizing the traffic loss owing to congestion.
Value based pricing	Also known as pricing principle based on what-the-traffic-could-bear , but which can be better assessed by the value that users attach to them. Used to meet the financial objective of generating sufficient revenues to cover the ports' costs and the marketing objective of limiting the loss of traffic as a result of generating these revenues.
Strategic port pricing	Used for promotion of specific objectives, such as maximization of use of the facility, attraction of a particular type of cargo, promotion of exports of certain cargoes, etc.
Pricing based on empirical intuition, "what the others do" and past trends	Approximate method which does not necessarily take into account the cost recovery and is believed to provide sufficient contribution for the incomes of the port authority / port operator. Pricing strategy that anticipates the reaction of other ports tariffs resulting from this strategy may or may not satisfy the other previous principles.
Price differentiation	Charging different prices for the same services to different objects of charging ("customers"). For example, charging of berth fees to ships not just according to their physical characteristics, but also according to the type of vessels (e.g. higher fees for tankers, lower for Ro-Ro vessels). Another example is charging different prices of wharfage fees to cargo owners not just according to the tons loaded/unloaded but also according to the value of cargo, or volume they contract with the port operator. Similar method is used for storage fees.



9.1.2 Status of ports

Ports (as physical/infrastructure objects, not simply port companies) in your country have the status of: <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
Strategic assets of transport infrastructure, based on applicable law(s)	x
Special importance in the country's development strategies	
Have special legal protection	x
Pure profit entities	
Fully privatizable assets (can be sold, including the land)	
No special status	
Other (please explain)	

Table 161: Status of ports

9.1.3 Financing of new investments

Who finances the new investments within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port Authority (own funds)	Port operator	Concessionaire	Rail company	Other (explain in comments)
Port infrastructure	x			x	x	X		
Internal road infrastructure	X			X	x	X		
Internal rail infrastructure	x			x	x	x		
Suprastructure					x	X		
Equipment (cranes, etc.)					x	X		

Table 162: Financing of new investments

9.1.4 Financing of maintenance of existing assets

Who finances the maintenance of existing assets within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port authority (own funds)	Port operator	Concessionaire	Rail company	Other <i>(explain comments)</i>	in
Port infrastructure					X	X			
Internal road infrastructure					X	X			
Internal rail infrastructure					X	X			
Suprastructure					X	X			
Equipment (cranes, etc.)					X	X			

Table 163: Financing of maintenance of existing assets

9.1.5 Public subsidies for ports

Do you receive any subsidies (regularly or sometimes) from the public sector? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	Yes				In the past				No
	Through investments	In cash flow	Preferential loans	Other (explain)	Through investments	In cash flow	Preferential loans	Other (explain)	
For port infrastructure									
For port suprastructure									
For port equipment									
For port labour									
For equipment (cranes, etc.)									
Other (explain ¹⁵⁰)									

Table 164: Public subsidies for port

¹⁵⁰ In the comment section.

9.1.6 Use of revenues/incomes

If you are a public port and if you make any revenues ¹⁵¹ /incomes, how are they used? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
To cover fixed and variable costs, the rest transferred to the public (state, municipality...) budget	X
To cover only variable costs, the rest transferred to the public (state, municipality...) budget	
Fully transferred to the public (state, municipality...) budget	
Used for further infrastructure investments and/or maintenance	X
Used for development projects	X
Used for bonuses to the employees	
We make certain revenues but no net positive incomes ¹⁵²	
Other (please explain ¹⁵³)	

Table 165: Use of incomes and revenues

9.1.7 Objectives of port pricing and charging

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives¹⁵⁴)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Efficient/optimal use of port assets	X			
Provision of public service ¹⁵⁵	X			

¹⁵¹ Revenue is the total amount of income generated by the use of infrastructure or services related to the port's primary operations. Income or *net income* is a company's total revenue after all operating costs are deducted or simply *profit*.

¹⁵² If you select this option, please explain in the comments section on the last page.

¹⁵³ List here and explain in comments section

¹⁵⁴ For example, port authority cannot have both objectives of public service provision and profit generation for infrastructure fees.

¹⁵⁵ Where proper functioning of ports is seen as public service or public interest, not necessarily a profitable activity.

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives¹⁵⁴)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Cost recovery 1 (operating & maintenance expenses only)				
Cost recovery 2 (1+depreciation)				
Cost recovery 3 (1+2+interest charges on loans)				
Cost recovery 4 (1+2+3+provisions for port development and improvement)				
Cost recovery 5 (1+2+3+4+rate of return)				
Maximising employment				
Minimizing welfare losses				
Maximising throughput				
Pure profit generation (regardless of any expenses) ¹⁵⁶				
Other (explain)				

Table 166: Port pricing objectives

9.1.8 Approach to port pricing principles

What is your main approach in establishing the port pricing principles? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Economic approach ¹⁵⁷			
Financial approach			
Public body (public good) approach	X		

¹⁵⁶ Usually a port operator's objective in privatized (sold, leased, concessioned) ports where no particular regard is made towards the real cost and where all income from an activity is seen as pure profit (e.g. crane use for loading/unloading).

¹⁵⁷ Please see the definitions

Table 167: Approach to port pricing principles

9.1.9 Port pricing principles

On what principles do you base tariffs in your port? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Cost recovery base			
Performance base			
Value (for the user) base			
Empirical intuition and past trends based pricing	X		

Table 168: Port pricing principles

9.1.10 Standard types of infrastructure fees

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ¹⁵⁸	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X	X			X		
Wharfage fees (use of the dry side of the quay – cargo related)	X	X				X	
Navigation aid fees							
Idle ship laying fees (ships not loading/unloading)	X	X			X		
Truck entrance/exit	X		X				Trucking company
Truck parking for loading/unloading at loading/unloading bay							
Truck parking for trucks not	X		X				Trucking

¹⁵⁸ Shipper or receiver

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ¹⁵⁸	Other (explain)
loading/unloading							company
Train entrance/exit							
Train use of rail infrastructure for loading/unloading							
Train use of rail infrastructure other than for loading/unloading							
Other (explain)							

Table 169: Standard types of infrastructure fees

9.1.11 Status and unit basis for charging of infrastructure fees

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ¹⁵⁹	Confidential	Negotiable	Non-negotiable ¹⁶⁰	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Berth fees (use of wet side of the quay – ship related)	x			x	GT and time spent (self-propelled vessels) kW and time spent (motor pusher) Length and time spent (passenger ships)
Wharfage fees (use of the dry side of the quay – cargo related)	x			x	Ton of cargo loaded/unloaded Passengers boarded/disembarked
Navigation aid fees					

¹⁵⁹ Published (in any place: black board, info board, web page, regulation, etc.)

¹⁶⁰ Not „floating“ fees, meaning that their increase or decrease requires an approval/decision or change of regulation by port authority or municipal, provincial or national government

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ¹⁵⁹	Confidential	Negotiable	Non-negotiable ¹⁶⁰	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Idle ship laying fees (ships not loading/unloading)	X			X	Length and time spent (passenger ships)
Truck entrance/exit	X			X	Per entry in the port area
Truck parking for loading/unloading at loading/unloading bay					
Truck parking for trucks not loading/unloading	X			X	Unit (truck) and time spent
Train entrance/exit					
Train use of rail infrastructure for loading/unloading					
Train use of rail infrastructure other than for loading/unloading					
Other (explain)					

Table 170: Status and unit basis for infrastructure fees

9.1.12 Standard types of service fees (cargo related & nautical-technical services)

What are the main/standard service fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if applied in your port	Mark X if service is compulsory	Charged by				Paid by			
			Port authority	Port operator	Tug operator	Government (e.g. for pilots)	Other (explain)	Ship owner	Cargo owner ¹⁶¹	Other (explain)
Vessel loading/unloading	X			X					X	
Wagon loading/unloading	X			X					X	
Truck loading/unloading	X			X					X	
Warehousing / storage	X			X					X	
Yard handling	X			X					X	
Reception/delivery at the gates										
Other (explain)										
Sea pilotage										
River pilotage	X			X				X		
Towage (port tugs)	X			X				X		
Line handling (fasting/unfasting a vessel)	X			X				X		
Waste removal										
Other (explain)										

Table 171: Standard types of service fees

¹⁶¹ Shipper or receiver

9.1.13 Status and unit basis for charging of service fees

What is the status of service fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ¹⁶²	Confidential	Negotiable	Non-negotiable	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please indicate below)</i>
Vessel loading/unloading			X		Ton (unit can be also m3, TEU, car, truck...) of cargo loaded/unloaded
Wagon loading/unloading			X		Ton of cargo loaded/unloaded
Truck loading/unloading			X		Ton of cargo loaded/unloaded
Warehousing / storage			X		Ton of cargo stored, time used
Yard handling			X		Ton of cargo loaded/unloaded
Reception/delivery at the gates					
Other (explain)					
Sea pilotage					
River pilotage				X	Per hour of pilot engagement
Towage (port tugs)				X	Per time spent in maneuver
Line handling (fasting/unfasting a vessel)				X	GT of the vessel
Waste removal					
Other (explain)					

Table 172: Status and unit basis for charging of service fees

¹⁶² Published (in any place: black board, info board, web page, regulation, etc.)

9.1.14 Price differentiation methods for infrastructure fees

What price differentiation ¹⁶³ methods for infrastructure fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X							X	
Wharfage fees (use of the dry side of the quay – cargo related)		X		X					
Navigation aid fees									
Idle ship laying fees (ships not loading/unloading)	X							X	
Truck entrance/exit									Per entrance
Truck parking for loading/unloading at loading/unloading bay									
Truck parking for trucks not loading/unloading								X	
Train entrance/exit									
Train use of rail infrastructure for loading/unloading									
Train use of rail infrastructure other than for loading/unloading									
Other (explain)									

Table 173: Price differentiation methods for infrastructure fees

¹⁶³ Please see the section of definitions at the beginning

9.1.15 Price differentiation methods for service fees

What price differentiation ¹⁶⁴ methods for service fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Vessel loading/unloading		X			X	X			
Wagon loading/unloading		X			X	X			
Truck loading/unloading		X			X	X			
Warehousing / storage		X				X			
Yard handling		X							
Reception/delivery at the gates									
Other (explain)									
Sea pilotage									
River pilotage								X	
Towage (port tugs)								X	
Line handling (fasting/unfasting a vessel)	X								
Other (explain)									

Table 174: Price differentiation methods for service fees

¹⁶⁴ Ibid.

9.1.16 Setting of infrastructure fees

Who sets the infrastructure fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X							
Wharfage fees (use of the dry side of the quay – cargo related)	X							
Navigation aid fees								
Idle ship laying fees (ships not loading/unloading)	X							
Truck entrance/exit					X			
Truck parking for loading/unloading at loading/unloading bay								
Truck parking for trucks not loading/unloading					X			
Train entrance/exit								
Train use of rail infrastructure for loading/unloading								
Train use of rail infrastructure other than for loading/unloading								
Other (explain)								

Table 175: Setting of infrastructure fees

9.1.17 Setting of service fees

Who sets the service fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Vessel loading/unloading				X	X			
Wagon loading/unloading				X	X			
Truck loading/unloading				X	X			
Warehousing / storage				X	X			
Yard handling				X	X			
Reception/delivery at the gates								
Other (explain)								
Sea pilotage								
River pilotage				X	X			
Towage (port tugs)				X	X			
Line handling (fasting/unfasting a vessel)				X	X			
Other (explain)								

Table 176: Setting of service fees

9.1.18 Regulatory aspects of port tariffs

Regulatory framework for tariffs in your port <i>(mark the appropriate answers with X; any comments in the comment section)</i>	Legal act needed for tariff setting	Regulated minimum (price floor)	Regulated maximum (price cap)	Determined by concession contract	Independent decision of port operator	Other (explain)
Infrastructure fees	X					
Cargo related service fees		X	X		X	
Nautical-technical service fees					X	
Other (explain)						

Table 177: Regulatory aspects of port tariffs

9.1.19 Adjustment of port tariffs

How often do you adjust the port tariffs in your port? <i>(mark the appropriate answers with X; multiple answers allowed; any comments in the comment section)</i>	Quarterly	Semesterly	Annually	Multiannual	Do you take into account inflation rates every year?	Other (explain)
Infrastructure fees			X		X	
Cargo related service fees						X
Nautical-technical service fees						X
Other (explain)						

Table 178: Adjustment of port tariffs

9.1.20 Depreciation of port assets

Is the asset subject to depreciation? <i>(mark the appropriate answers with X)</i>	Basis of depreciation <i>(Please fill in only if the asset is subject to depreciation)</i>							
	Mark X where applicable			Period of depreciation (years)	Mark X where applicable			
	Historic or original cost	Present replacement cost	Future replacement cost		Straight line method	Compounded (sinking fund) method	Other (explain)	
Navigation aids								
Capital dredging								
Maintenance dredging								
Breakwaters (seaport)								
Bank protection								
Operational concrete quays								
Non-operational quays								
Steel dolphin piers								
Land								
Filling of land								
Floating cranes								
Quay cranes								
Mobile cranes								
Rubber tyred gantry cranes								
Rail mounted gantry cranes								
Reach stackers								
Forklifts								
Other								

Table 179: Depreciation of port assets

9.1.21 Methodologies for price calculation

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i> Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>
Infrastructure fees (please write your own tariffs below)	
Service fees (please write your own tariffs below)	
Nautical-technical services (please write your own tariffs below)	

Table 180: Methodologies for price calculation

9.1.22 Alternative pricing methods options

Alternative options for pricing of port fees <i>(mark X where you believe that the proposed alternative pricing method is applicable, or for which type of fees you could consider any of the below alternative pricing methods)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Congestion based pricing ¹⁶⁵			
Marginal cost based pricing			
Price differentiation – performance based (on time ¹⁶⁶ and/or volume)		X	X
Price differentiation – based on quality of service ¹⁶⁷			
Two-part tariffs 1 (fixed basis + variable time)			
Two-part tariffs 2 (fixed basis plus + variable amount of cargo)		X	
Cost based pricing (with all its variants)			
Value based pricing			
Auction based pricing – selling port slots forward ¹⁶⁸			
(Propose yourself)			
...			
...			

Table 181: Alternative port pricing methods

¹⁶⁵ Price increase when congestion degree (demand for port services) is high, decrease when it is low.

¹⁶⁶ This option can maximize throughput and reduce congestion.

¹⁶⁷ Based on availability of specialized equipment, dedicated terminals, extended or specialized storage, proximity to production and to markets, depth of access channel, ancillary logistics services, freeport / export processing zone, etc.

¹⁶⁸ Ports may obtain better information on future demand.

9.1.23 Case study

Please respond to the following simplified case study example (in case of any data are missing, please assume them according to your experience).

Let the following hypothetical cases occur in your port:

- o) Pushed convoy with four barges, each having net tonnage (NT) of 2500 tons, each carrying 1500 tons of wheat, unloads in your port. Pusher has 2800 HP of engine power installed (1 HP = 0.7457 kW). Convoy takes no shore-side power, no water and has no waste to dispose of. Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

Berth fee:

Pusher (No of kW x 4,11 RSD x No of days) ▶ 2800HP (2088kW) ▶ unloading period 4 days (e.g.)

Costs paid by ship owner ▶ 2088 kW x 4,11 RSD x 4 days = 34.326,72 RSD

Note: If pusher stays on the anchorage and all maneuvers are done by port pusher (services charged by port operator), only one day is charged, in this case 8.581,68 RSD

Wharfage fee:

Wheat (quantity in t x 20,56 RSD) ▶ 4barges x 1500t = 6000t

Costs paid by cargo owner/shipper/receiver ▶ 6000t x 20,56 RSD = 123.360 RSD

Note: there is already flexible rate for the export of grains (50%) so the calculation of the same wharfage fee for the loading of the same amount of wheat for the export would be 61.680 RSD

- p) Self-propelled barge (MCV), NT = 2800 tons, length overall L_{oa} = 92 m, loads 1200 tons of fertilizers in bulk. After loading, the vessel stays in port for 9 hours, until daylight. No other services are required from the vessel and its crew.

Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

Berth fee:

Self-propelled vessel (NT x 4,11 RSD x No of days) ▶ NT = 2800t ▶ loading period 1 day

Costs paid by ship owner ▶ 2800 x 4,11 RSD = 11.508 RSD

Wharfage fee:

Fertilizers (quantity in t x 20,56 RSD)

Costs paid by cargo owner/shipper/receiver ▶ 1200t x 20,56 RSD = 24.672 RSD

Note: If the goods are for export rate is 17,48RSD/t and wharfage fee would be 20.976 RSD



Notes:

Table 182: Case study



9.1.24 Comments

Comments section

(please first state for which table you are giving the comment)

Table 4.1.20 Depreciation of port assets:

As a consequence of the privatisation processes, there is still a mixture of the private and public ownership of the infrastructure in ports. Ahead of us is work to do a census of all assets in public property and determine their value. Only after that, depreciation can be determined.

For all newly built assets depreciation will be calculated accordingly, in line with the legislation.

Table 2:

Table n:

Table 183: Comments



10 Bulgaria

10.1 Port Bulmarket

Port authority	<i>(write here if you answer the Questionnaire as port authority)</i>
Port operator	Port Bulmarket EAD
Date:	17.10.2021
Contact details:	Ruse, 100 Tutrakan blvd., Boyan Bonev +359 885 128 010

Please read me first!

Dear Madams and Sirs,

You are viewing a complex Questionnaire on port pricing principles in the Danube Region ports (*hereinafter: Questionnaire*). Its complexity is a result of the attempt to encompass all possible diversities of port governance and operations models in nine different countries along the Danube and a large variety of port pricing models in involved inland waterway and seaports. You will probably note that the port tariffs terminology used in the Questionnaire may not fully reflect the terminology used in your country/port. This is why generic definitions are provided here and you will have an opportunity to adjust and explain a concrete situation in your country/port if it differs from a generic setup used here. Since this Questionnaire encompasses a wide variety of port pricing policies, we kindly encourage you to read it carefully and discuss and fill it together with your (transport?) economists or department in charge of tariff policies. The Questionnaire is given to you with sufficient time before the deadline, so please feel free to take your time filling it. Your best source of information for this Questionnaire is your own experience, knowledge and employees.

The objectives of this Questionnaire are the following:

- to provide an insight into the nature and mechanisms of port tariffs charged by port governing bodies (such as port authorities of whichever form), port operating companies (port/terminal operators) and providers of nautical services (mostly in seaports) such as line handling (berthing/de-berthing, a.k.a. fasting/unfasting), pilotage and towage;
- to identify who finances ports, who charges what and who pays what;
- to attempt to distinguish the nature infrastructure charges (for the use of infrastructure) and service charges (for provision of various services);
- to determine the basis and calculation methodology for each tariff;
- to determine whether the tariffs are calculated on a cost based approach (and what kind of cost), performance based approach, value based approach (i.e. demand based approach), strategic principles, (or on any other);

- to assess the level of autonomy and regulation of tariff settings;
- to determine the level of dynamics of tariffs;
- to determine the existence of regulated tariff ceiling or floor.

The authors of this Questionnaire remain at your service for any type of clarification.

Thank you.

iC consulenten & DIONYSUS Project team

10.1.1 Definitions

Definitions (for the purposes of this Questionnaire)	
Port tariffs	Common term for all types of charges, dues and fees applicable in ports.
Infrastructure fees	Charged for the use of port infrastructure such as water body, anchorage, wet side of the quay, dry side of the quay ¹⁶⁹ , usage of rail or road infrastructure (entrance/exit/parking), vessel laying fee, aids to navigation, etc. These fees are usually charged by the port governing body (e.g. port authority), or concessionaire (depending on the type of concession) and, depending on the country, may be paid by vessel owner/operator (or by agent on their behalf), cargo owner, truck or rail operator. In case of vessel related fees, infrastructure fees are based on carrying capacity of the vessel, Gross Tonnage (GT), Net Tonnage (NT), on vessel length, time spent at berth, actual cargo quantity being loaded/unloaded, etc. Typically charged by port authority (or concessionaire) and paid by the vessel/vehicle owner or cargo owner.
Service fees	Fees charged for the provision of various services, such as loading/unloading (use of cranes and similar transshipment devices), storage, warehousing, yard handling, reception/delivery at gates, etc. Usually charged by port/terminal operator and paid usually by cargo owner (shipper/receiver).
Nautical-technical services fees	Pilotage, towage, line handling (mooring/unmooring or fastening/unfastening), shore-side electricity supply, water supply, etc. Typically charged by service provider or port authority or government (in case of pilotage), and paid by the vessel owner.
Navigation aid fees	Fees charges for the use of navigation aids (NAVAID) such as aids to navigation (AtoN), VTMIS, safety of navigation, lighthouses, navigation buoys, signals, markers, radio beacons, etc. Applicable mostly in seaports.

¹⁶⁹ In certain cases, this fee may be split in two, whereas the ship owner pays for the usage of the wet side of the quay (berth) and the cargo owner pays for the usage of the dry side of the quay (berth).

Definitions (for the purposes of this Questionnaire)

Economic approach (to pricing)	Based on marginal costs, taking into consideration the effects on all parties, including benefits derived by others. Marginal costs in port are extremely difficult to define, but to put it simply, they represent the change in total cost associated with the unit change in the level of activity ¹⁷⁰ . However, since marginal costs are not only extremely difficult to define, they are also very difficult to estimate, this approach comes down to favouring the average cost based pricing. In other words, a cost recovery based approach.
Financial approach	Prices set on the basis of accounting costs, to recover fixed and variable costs and to provide an adequate rate of return and certain profit.
Public body approach	Aims to foster local development and economic activities, to maximize throughput, to maintain port services as public good in public interest; often requires subsidies (e.g. to cover at least part of the fixed infrastructure costs).
Cost based pricing	The simplest pricing principle, calculates prices (fees) based on simple cost (fixed, variable or even marginal) recovery, but <u>not including the past investments</u> . Cost based tariffs are used to achieve the marketing objective of maximizing the use of port services and the financial objective of covering the fixed and variable costs of these services.
Cost-plus based pricing	Calculates prices (fees) based on cost (fixed and variable) plus a determined profit margin.
Performance based pricing	Calculates fees based on time efficiency of usage of the service or facility (time a ship spends at berth, time a cargo spends in a base or transit storage, etc.). Promotes efficient behaviour of the users of a facility. Used to achieve the operational objective of maximizing the throughput of port facilities while limiting the level of congestion and to achieve the marketing objective of minimizing the traffic loss owing to congestion.
Value based pricing	Also known as pricing principle based on what-the-traffic-could-bear , but which can be better assessed by the value that users attach to them. Used to meet the financial objective of generating sufficient revenues to cover the ports' costs and the marketing objective of limiting the loss of traffic as a result of generating these revenues.
Strategic port pricing	Used for promotion of specific objectives, such as maximization of use of the facility, attraction of a particular type of cargo, promotion of exports of certain cargoes, etc.

¹⁷⁰ Goss, R.O., Stevens, H. (2001): Marginal Costs in Seaports, *International Journal of Maritime Economics*, Vol. 3, pp.128-138.

Definitions (for the purposes of this Questionnaire)

<p>Pricing based on empirical intuition, “what the others do” and past trends</p>	<p>Approximate method which does not necessarily take into account the cost recovery and is believed to provide sufficient contribution for the incomes of the port authority / port operator. Pricing strategy that anticipates the reaction of other ports tariffs resulting from this strategy may or may not satisfy the other previous principles.</p>
<p>Price differentiation</p>	<p>Charging different prices for the same services to different objects of charging (“customers”). For example, charging of berth fees to ships not just according to their physical characteristics, but also according to the type of vessels (e.g. higher fees for tankers, lower for Ro-Ro vessels). Another example is charging different prices of wharfage fees to cargo owners not just according to the tons loaded/unloaded but also according to the value of cargo, or volume they contract with the port operator. Similar method is used for storage fees.</p>

10.1.2 Status of ports

Ports (as physical/infrastructure objects, not simply port companies) in your country have the status of: <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
Strategic assets of transport infrastructure, based on applicable law(s)	X
Special importance in the country's development strategies	X
Have special legal protection	
Pure profit entities	
Fully privatizable assets (can be sold, including the land)	
No special status	
Other (please explain)	

Table 184: Status of ports

10.1.3 Financing of new investments

Who finances the new investments within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port Authority (own funds)	Port operator	Concessionaire	Rail company	Other (explain in comments)
Port infrastructure					X			
Internal road infrastructure					X			
Internal rail infrastructure					X			
Suprastructure					X			
Equipment (cranes, etc.)					X			

Table 185: Financing of new investments

10.1.4 Financing of maintenance of existing assets

Who finances the maintenance of existing assets within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port authority (own funds)	Port operator	Concessionaire	Rail company	Other <i>(explain in comments)</i>
Port infrastructure					X			
Internal road infrastructure					X			
Internal rail infrastructure					X			
Suprastructure					X			
Equipment (cranes, etc.)					X			

Table 186: Financing of maintenance of existing assets

10.1.5 Public subsidies for ports

Do you receive any subsidies (regularly or sometimes) from the public sector? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	Yes				In the past				No
	Through investments	In cash flow	Preferential loans	Other (explain)	Through investments	In cash flow	Preferential loans	Other (explain)	
For port infrastructure									X
For port suprastructure									X
For port equipment									X
For port labour									X
For equipment (cranes, etc.)									X
Other (explain ¹⁷¹)									X

Table 187: Public subsidies for port

¹⁷¹ In the comment section.

10.1.6 Use of revenues/incomes

If you are a public port and if you make any revenues ¹⁷² /incomes, how are they used? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
To cover fixed and variable costs, the rest transferred to the public (state, municipality...) budget	N/A
To cover only variable costs, the rest transferred to the public (state, municipality...) budget	N/A
Fully transferred to the public (state, municipality...) budget	N/A
Used for further infrastructure investments and/or maintenance	N/A
Used for development projects	N/A
Used for bonuses to the employees	N/A
We make certain revenues but no net positive incomes ¹⁷³	N/A
Other (please explain ¹⁷⁴)	N/A

Table 188: Use of incomes and revenues

10.1.7 Objectives of port pricing and charging

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives¹⁷⁵)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Efficient/optimal use of port assets	X	X		
Provision of public service ¹⁷⁶				

¹⁷² Revenue is the total amount of income generated by the use of infrastructure or services related to the port's primary operations. Income or *net income* is a company's total revenue after all operating costs are deducted or simply *profit*.

¹⁷³ If you select this option, please explain in the comments section on the last page.

¹⁷⁴ List here and explain in comments section

¹⁷⁵ For example, port authority cannot have both objectives of public service provision and profit generation for infrastructure fees.

¹⁷⁶ Where proper functioning of ports is seen as public service or public interest, not necessarily a profitable activity.

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives¹⁷⁵)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Cost recovery 1 (operating & maintenance expenses only)				
Cost recovery 2 (1+depreciation)				
Cost recovery 3 (1+2+interest charges on loans)				
Cost recovery 4 (1+2+3+provisions for port development and improvement)				
Cost recovery 5 (1+2+3+4+rate of return)	X			
Maximising employment				
Minimizing welfare losses				
Maximising throughput		X		
Pure profit generation (regardless of any expenses) ¹⁷⁷				
Other (explain)				

Table 189: Port pricing objectives

10.1.8 Approach to port pricing principles

What is your main approach in establishing the port pricing principles? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Economic approach ¹⁷⁸			
Financial approach	X	X	
Public body (public good) approach			

¹⁷⁷ Usually a port operator's objective in privatized (sold, leased, concessioned) ports where no particular regard is made towards the real cost and where all income from an activity is seen as pure profit (e.g. crane use for loading/unloading).

¹⁷⁸ Please see the definitions

Table 190: Approach to port pricing principles

10.1.9 Port pricing principles

On what principles do you base tariffs in your port? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Cost recovery base	X	X	
Performance base	X	X	
Value (for the user) base			
Empirical intuition and past trends based pricing			

Table 191: Port pricing principles

10.1.10 Standard types of infrastructure fees

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ¹⁷⁹	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X		X		X		
Wharfage fees (use of the dry side of the quay – cargo related)	X		X			X	
Navigation aid fees							
Idle ship laying fees (ships not loading/unloading)	X		X		X		
Truck entrance/exit	X		X			X	
Truck parking for loading/unloading at loading/unloading bay							
Truck parking for trucks not loading/unloading							

¹⁷⁹ Shipper or receiver

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ¹⁷⁹	Other (explain)
Train entrance/exit							
Train use of rail infrastructure for loading/unloading	X		X			X	
Train use of rail infrastructure other than for loading/unloading							
Other (explain)							

Table 192: Standard types of infrastructure fees

10.1.11 Status and unit basis for charging of infrastructure fees

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ¹⁸⁰	Confidential	Negotiable	Non-negotiable ¹⁸¹	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Berth fees (use of wet side of the quay – ship related)	X				Ton of cargo
Wharfage fees (use of the dry side of the quay – cargo related)	X				Ton of cargo
Navigation aid fees					
Idle ship laying fees (ships not loading/unloading)	X				Time used
Truck entrance/exit	X				Time used
Truck parking for loading/unloading at loading/unloading bay					
Truck parking for trucks not loading/unloading					

¹⁸⁰ Published (in any place: black board, info board, web page, regulation, etc.)

¹⁸¹ Not „floating“ fees, meaning that their increase or decrease requires an approval/decision or change of regulation by port authority or municipal, provincial or national government

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ¹⁸⁰	Confidential	Negotiable	Non-negotiable ¹⁸¹	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Train entrance/exit					
Train use of rail infrastructure for loading/unloading	X				Ton of cargo
Train use of rail infrastructure other than for loading/unloading					
Other (explain)					

Table 193: Status and unit basis for infrastructure fees

10.1.12 Standard types of service fees (cargo related & nautical-technical services)

What are the main/standard service fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if applied in your port	Mark X if service is compulsory	Charged by				Paid by			
			Port authority	Port operator	Tug operator	Government (e.g. for pilots)	Other (explain)	Ship owner	Cargo owner ¹⁸²	Other (explain)
Vessel loading/unloading	X	X		X				X		
Wagon loading/unloading	X	X		X				X		
Truck loading/unloading	X	X		X				X		
Warehousing / storage	X	X		X				X		
Yard handling	X	X		X				X		
Reception/delivery at the gates	X	X		X				X		
Other (explain)										
Sea pilotage										
River pilotage										
Towage (port tugs)	X			X			X			
Line handling (fasting/unfasting a vessel)	X			X			X			
Waste removal	X	X		X			X			
Other (explain)										

Table 194: Standard types of service fees

¹⁸² Shipper or receiver

10.1.13 Status and unit basis for charging of service fees

What is the status of service fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ¹⁸³	Confidential	Negotiable	Non-negotiable	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please indicate below)</i>
Vessel loading/unloading	X				Ton of cargo
Wagon loading/unloading	X				Ton of cargo
Truck loading/unloading	X				Ton of cargo
Warehousing / storage	X				Ton of cargo
Yard handling	X				Ton of cargo
Reception/delivery at the gates	X				Ton of cargo
Other (explain)					
Sea pilotage					
River pilotage					
Towage (port tugs)	X				Vessel maneuver
Line handling (fasting/unfasting a vessel)	X				Vessel
Waste removal	X				Waste quantity
Other (explain)					

Table 195: Status and unit basis for charging of service fees

¹⁸³ Published (in any place: black board, info board, web page, regulation, etc.)

10.1.14 Price differentiation methods for infrastructure fees

What price differentiation ¹⁸⁴ methods for infrastructure fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Berth fees (use of wet side of the quay – ship related)		X				X			
Wharfage fees (use of the dry side of the quay – cargo related)		X			X	X			
Navigation aid fees									
Idle ship laying fees (ships not loading/unloading)								X	
Truck entrance/exit							X		
Truck parking for loading/unloading at loading/unloading bay									
Truck parking for trucks not loading/unloading									
Train entrance/exit									
Train use of rail infrastructure for loading/unloading		X			X	X			
Train use of rail infrastructure other than for loading/unloading									
Other (explain)									

Table 196: Price differentiation methods for infrastructure fees

¹⁸⁴ Please see the section of definitions at the beginning

10.1.15 Price differentiation methods for service fees

What price differentiation ¹⁸⁵ methods for service fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Vessel loading/unloading		X			X	X			
Wagon loading/unloading		X			X	X			
Truck loading/unloading		X			X	X			
Warehousing / storage		X			X	X			
Yard handling		X			X	X			
Reception/delivery at the gates		X			X	X			
Other (explain)									
Sea pilotage									
River pilotage									
Towage (port tugs)	X								
Line handling (fasting/unfasting a vessel)	X								
Other (explain)									

Table 197: Price differentiation methods for service fees

¹⁸⁵ Ibid.

10.1.16 Setting of infrastructure fees

Who sets the infrastructure fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Berth fees (use of wet side of the quay – ship related)					X			
Wharfage fees (use of the dry side of the quay – cargo related)					X			
Navigation aid fees								
Idle ship laying fees (ships not loading/unloading)					X			
Truck entrance/exit					X			
Truck parking for loading/unloading at loading/unloading bay								
Truck parking for trucks not loading/unloading								
Train entrance/exit								
Train use of rail infrastructure for loading/unloading						X		
Train use of rail infrastructure other than for loading/unloading								
Other (explain)								

Table 198: Setting of infrastructure fees

10.1.17 Setting of service fees

Who sets the service fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Vessel loading/unloading					X			
Wagon loading/unloading					X			
Truck loading/unloading					X			
Warehousing / storage					X			
Yard handling								
Reception/delivery at the gates					X			
Other (explain)								
Sea pilotage								
River pilotage								
Towage (port tugs)					X			
Line handling (fasting/unfasting a vessel)					X			
Other (explain)								

Table 199: Setting of service fees

10.1.18 Regulatory aspects of port tariffs

Regulatory framework for tariffs in your port <i>(mark the appropriate answers with X; any comments in the comment section)</i>	Legal act needed for tariff setting	Regulated minimum (price floor)	Regulated maximum (price cap)	Determined by concession contract	Independent decision of port operator	Other (explain)
Infrastructure fees					X	
Cargo related service fees					X	
Nautical-technical service fees					X	
Other (explain)						

Table 200: Regulatory aspects of port tariffs

10.1.19 Adjustment of port tariffs

How often do you adjust the port tariffs in your port? <i>(mark the appropriate answers with X; multiple answers allowed; any comments in the comment section)</i>	Quarterly	Semesterly	Annually	Multiannual	Do you take into account inflation rates every year?	Other (explain)
Infrastructure fees			X			
Cargo related service fees			X			
Nautical-technical service fees			X			
Other (explain)						

Table 201: Adjustment of port tariffs

10.1.20 Depreciation of port assets

Is the asset subject to depreciation? <i>(mark the appropriate answers with X)</i>	Basis of depreciation <i>(Please fill in only if the asset is subject to depreciation)</i>						
	Mark X where applicable			Period of depreciation (years)	Mark X where applicable		
	Historic or original cost	Present replacement cost	Future replacement cost		Straight line method	Compounded (sinking fund) method	Other (explain)
Navigation aids							
Capital dredging							
Maintenance dredging							
Breakwaters (seaport)							
Bank protection							
Operational concrete quays							
Non-operational quays							
Steel dolphin piers							
Land							
Filling of land							
Floating cranes							
Quay cranes	X			10	X		
Mobile cranes	X			10	X		
Rubber tyred gantry cranes							
Rail mounted gantry cranes							
Reach stackers							
Forklifts	X			10	X		
Other							

Table 202: Depreciation of port assets

10.1.21 Methodologies for price calculation

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i> Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>
Infrastructure fees <i>(please write your own tariffs below)</i>	
Wharfage fee	Empirical method
Service fees <i>(please write your own tariffs below)</i>	
Nautical-technical services <i>(please write your own tariffs below)</i>	

Table 203: Methodologies for price calculation

10.1.22 Alternative pricing methods options

Alternative options for pricing of port fees <i>(mark X where you believe that the proposed alternative pricing method is applicable, or for which type of fees you could consider any of the below alternative pricing methods)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Congestion based pricing ¹⁸⁶	X	X	
Marginal cost based pricing	X	X	
Price differentiation – performance based (on time ¹⁸⁷ and/or volume)			
Price differentiation – based on quality of service ¹⁸⁸			
Two-part tariffs 1 (fixed basis + variable time)			
Two-part tariffs 2 (fixed basis plus + variable amount of cargo)			
Cost based pricing (with all its variants)			
Value based pricing			
Auction based pricing – selling port slots forward ¹⁸⁹			
(Propose yourself)			
...			
...			

Table 204: Alternative port pricing methods

¹⁸⁶ Price increase when congestion degree (demand for port services) is high, decrease when it is low.

¹⁸⁷ This option can maximize throughput and reduce congestion.

¹⁸⁸ Based on availability of specialized equipment, dedicated terminals, extended or specialized storage, proximity to production and to markets, depth of access channel, ancillary logistics services, freeport / export processing zone, etc.

¹⁸⁹ Ports may obtain better information on future demand.

10.1.23 Case study

Please respond to the following simplified case study example (in case of any data are missing, please assume them according to your experience).

Let the following hypothetical cases occur in your port:

- q) Pushed convoy with four barges, each having net tonnage (NT) of 2500 tons, each carrying 1500 tons of wheat, unloads in your port. Pusher has 2800 HP of engine power installed (1 HP = 0.7457 kW). Convoy takes no shore-side power, no water and has no waste to dispose of. Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

Wharfage fee: 1500 metric tons x 0,30 euro/ton = 450 euro/vessel, overall for the convoy 1800 euro – paid by the shipowner

Waste management fee, regardless of whether waste is actually transferred: 1 vessel – 10 euro, overall for the convoy 40 euro – paid by the shipowner

Transshipment:

Directly (ship/automobile) – 6000 metric tons x 2,20 euro/ton = 13 200 euro for the convoy – paid by the cargo owner

Indirectly (ship/closed warehouse/ automobile) – 6000 metric tons x 3,95 euro/ton = 23700 euro for the convoy – paid by the cargo owner

- r) Self-propelled barge (MCV), NT = 2800 tons, length overall L_{oa} = 92 m, loads 1200 tons of fertilizers in bulk. After loading, the vessel stays in port for 9 hours, until daylight. No other services are required from the vessel and its crew.

Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

Wharfage fee: 1200 metric tons x 0,30 euro/ton = 360 euro – paid by the shipowner

Waste management fee, regardless of whether waste is actually transferred: 1 vessel – 10 euro – paid by the shipowner

Occupying a spot after the end of transshipment operations - 1 vessel x 150 euro per day = 150 euro – paid by the shipowner

Transshipment:

Directly (automobile/ship) – 1200 metric tons x 2,60 euro/ton = 3120 euro – paid by the cargo owner

Notes:

Table 205: Case study

10.1.24 Comments

Comments section

(please first state for which table you are giving the comment)

Table 1:

Table 2:

Table n:

Table 206: Comments

10.2 Port of Lom questionnaire

Port authority	<i>Bulgarian Ports Infrastructure Company is the managing body of Bulgarian ports for public transport, where Branch – Territorial directorate Port Ruse is part of the Company with certain territorial range of activity. More information on www.bgports.bg</i>
Port operator	<i>(write here if you answer the Questionnaire as port operator)</i>
Date:	<i>14.10.2021</i>
Contact details:	<i>Phone: +359 971 6 83 80, territorial department “Port of Lom” branch</i>

Please read me first!

Dear Madams and Sirs,

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The objectives of this Questionnaire are the following:

- to provide an insight into the nature and mechanisms of port tariffs charged by port governing bodies (such as port authorities of whichever form), port operating companies (port/terminal operators) and providers of nautical services (mostly in seaports) such as line handling (berthing/de-berthing, a.k.a. fasting/unfasting), pilotage and towage;
- to identify who finances ports, who charges what and who pays what;
- to attempt to distinguish the nature infrastructure charges (for the use of infrastructure) and service charges (for provision of various services);
- to determine the basis and calculation methodology for each tariff;
- to determine whether the tariffs are calculated on a cost based approach (and what kind of cost), performance based approach, value based approach (i.e. demand based

- approach), strategic principles, (or on any other);
- to assess the level of autonomy and regulation of tariff settings;
 - to determine the level of dynamics of tariffs;
 - to determine the existence of regulated tariff ceiling or floor.

The authors of this Questionnaire remain at your service for any type of clarification.

Thank you.

iC consulenten & DIONYSUS Project team

10.2.1 Definitions

Definitions (for the purposes of this Questionnaire)	
Port tariffs	Common term for all types of charges, dues and fees applicable in ports.
Infrastructure fees	Charged for the use of port infrastructure such as water body, anchorage, wet side of the quay, dry side of the quay ¹⁹⁰ , usage of rail or road infrastructure (entrance/exit/parking), vessel laying fee, aids to navigation, etc. These fees are usually charged by the port governing body (e.g. port authority), or concessionaire (depending on the type of concession) and, depending on the country, may be paid by vessel owner/operator (or by agent on their behalf), cargo owner, truck or rail operator. In case of vessel related fees, infrastructure fees are based on carrying capacity of the vessel, Gross Tonnage (GT), Net Tonnage (NT), on vessel length, time spent at berth, actual cargo quantity being loaded/unloaded, etc. Typically charged by port authority (or concessionaire) and paid by the vessel/vehicle owner or cargo owner.
Service fees	Fees charged for the provision of various services, such as loading/unloading (use of cranes and similar transshipment devices), storage, warehousing, yard handling, reception/delivery at gates, etc. Usually charged by port/terminal operator and paid usually by cargo owner (shipper/receiver).
Nautical-technical services fees	Pilotage, towage, line handling (mooring/unmooring or fastening/unfastening), shore-side electricity supply, water supply, etc. Typically charged by service provider or port authority or government (in case of pilotage), and paid by the vessel owner.
Navigation aid fees	Fees charges for the use of navigation aids (NAVAID) such as aids to navigation (AtoN), VTMIS, safety of navigation, lighthouses, navigation buoys, signals, markers, radio beacons, etc. Applicable mostly in seaports.

¹⁹⁰ In certain cases, this fee may be split in two, whereas the ship owner pays for the usage of the wet side of the quay (berth) and the cargo owner pays for the usage of the dry side of the quay (berth).

Definitions (for the purposes of this Questionnaire)

Economic approach (to pricing)	Based on marginal costs, taking into consideration the effects on all parties, including benefits derived by others. Marginal costs in port are extremely difficult to define, but to put it simply, they represent the change in total cost associated with the unit change in the level of activity ¹⁹¹ . However, since marginal costs are not only extremely difficult to define, they are also very difficult to estimate, this approach comes down to favouring the average cost based pricing. In other words, a cost recovery based approach.
Financial approach	Prices set on the basis of accounting costs, to recover fixed and variable costs and to provide an adequate rate of return and certain profit.
Public body approach	Aims to foster local development and economic activities, to maximize throughput, to maintain port services as public good in public interest; often requires subsidies (e.g. to cover at least part of the fixed infrastructure costs).
Cost based pricing	The simplest pricing principle, calculates prices (fees) based on simple cost (fixed, variable or even marginal) recovery, but <u>not including the past investments</u> . Cost based tariffs are used to achieve the marketing objective of maximizing the use of port services and the financial objective of covering the fixed and variable costs of these services.
Cost-plus based pricing	Calculates prices (fees) based on cost (fixed and variable) plus a determined profit margin.
Performance based pricing	Calculates fees based on time efficiency of usage of the service or facility (time a ship spends at berth, time a cargo spends in a base or transit storage, etc.). Promotes efficient behaviour of the users of a facility. Used to achieve the operational objective of maximizing the throughput of port facilities while limiting the level of congestion and to achieve the marketing objective of minimizing the traffic loss owing to congestion.
Value based pricing	Also known as pricing principle based on what-the-traffic-could-bear , but which can be better assessed by the value that users attach to them. Used to meet the financial objective of generating sufficient revenues to cover the ports' costs and the marketing objective of limiting the loss of traffic as a result of generating these revenues.
Strategic port pricing	Used for promotion of specific objectives, such as maximization of use of the facility, attraction of a particular type of cargo, promotion of exports of certain cargoes, etc.

¹⁹¹ Goss, R.O., Stevens, H. (2001): Marginal Costs in Seaports, *International Journal of Maritime Economics*, Vol. 3, pp.128-138.

Definitions (for the purposes of this Questionnaire)

Pricing based on empirical intuition, “what the others do” and past trends

Approximate method which does not necessarily take into account the cost recovery and is believed to provide sufficient contribution for the incomes of the port authority / port operator. Pricing strategy that anticipates the reaction of other ports tariffs resulting from this strategy may or may not satisfy the other previous principles.

Price differentiation

Charging different prices for the same services to different objects of charging (“customers”). For example, charging of berth fees to ships not just according to their physical characteristics, but also according to the type of vessels (e.g. higher fees for tankers, lower for Ro-Ro vessels). Another example is charging different prices of wharfage fees to cargo owners not just according to the tons loaded/unloaded but also according to the value of cargo, or volume they contract with the port operator. Similar method is used for storage fees.

10.2.2 Status of ports

Ports (as physical/infrastructure objects, not simply port companies) in your country have the status of: <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
Strategic assets of transport infrastructure, based on applicable law(s)	X
Special importance in the country's development strategies	X
Have special legal protection	X
Pure profit entities	
Fully privatizable assets (can be sold, including the land)	
No special status	
Other (please explain)	

Table 207: Status of ports

10.2.3 Financing of new investments

Who finances the new investments within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port Authority (own funds)	Port operator	Concessionaire	Rail company	Other (explain in comments)
Port infrastructure	X			X	X	X		
Internal road infrastructure					X	X		
Internal rail infrastructure					X	X		
Suprastructure					X	X		
Equipment (cranes, etc.)					X	X		

Table 208: Financing of new investments

10.2.4 Financing of maintenance of existing assets

Who finances the maintenance of existing assets within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port authority (own funds)	Port operator	Concessionaire	Rail company	Other <i>(explain in comments)</i>
Port infrastructure	X			X	X	X		
Internal road infrastructure								
Internal rail infrastructure								
Suprastructure								
Equipment (cranes, etc.)								

Table 209: Financing of maintenance of existing assets

10.2.5 Public subsidies for ports

Do you receive any subsidies (regularly or sometimes) from the public sector? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	Yes				In the past				No
	Through investments	In cash flow	Preferential loans	Other (explain)	Through investments	In cash flow	Preferential loans	Other (explain)	
For port infrastructure				X				X	
For port suprastructure									
For port equipment									
For port labour									
For equipment (cranes, etc.)									
Other (explain ¹⁹²)									

Table 210: Public subsidies for port

¹⁹² In the comment section.

10.2.6 Use of revenues/incomes

If you are a public port and if you make any revenues ¹⁹³ /incomes, how are they used? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
To cover fixed and variable costs, the rest transferred to the public (state, municipality...) budget	
To cover only variable costs, the rest transferred to the public (state, municipality...) budget	
Fully transferred to the public (state, municipality...) budget	
Used for further infrastructure investments and/or maintenance	X
Used for development projects	X
Used for bonuses to the employees	
We make certain revenues but no net positive incomes ¹⁹⁴	
Other (please explain ¹⁹⁵)	

Table 211: Use of incomes and revenues

10.2.7 Objectives of port pricing and charging

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives¹⁹⁶)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Efficient/optimal use of port assets	X			
Provision of public service ¹⁹⁷	X			

¹⁹³ Revenue is the total amount of income generated by the use of infrastructure or services related to the port's primary operations. Income or *net income* is a company's total revenue after all operating costs are deducted or simply *profit*.

¹⁹⁴ If you select this option, please explain in the comments section on the last page.

¹⁹⁵ List here and explain in comments section

¹⁹⁶ For example, port authority cannot have both objectives of public service provision and profit generation for infrastructure fees.

¹⁹⁷ Where proper functioning of ports is seen as public service or public interest, not necessarily a profitable activity.

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives¹⁹⁶)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Cost recovery 1 (operating & maintenance expenses only)				
Cost recovery 2 (1+depreciation)				
Cost recovery 3 (1+2+interest charges on loans)				
Cost recovery 4 (1+2+3+provisions for port development and improvement)				
Cost recovery 5 (1+2+3+4+rate of return)				
Maximising employment				
Minimizing welfare losses				
Maximising throughput				
Pure profit generation (regardless of any expenses) ¹⁹⁸				
Other (explain)				

Table 212: Port pricing objectives

10.2.8 Approach to port pricing principles

What is your main approach in establishing the port pricing principles? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Economic approach ¹⁹⁹			
Financial approach			
Public body (public good) approach	X		

¹⁹⁸ Usually a port operator's objective in privatized (sold, leased, concessioned) ports where no particular regard is made towards the real cost and where all income from an activity is seen as pure profit (e.g. crane use for loading/unloading).

¹⁹⁹ Please see the definitions

Table 213: Approach to port pricing principles

10.2.9 Port pricing principles

On what principles do you base tariffs in your port? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Cost recovery base			
Performance base	X		
Value (for the user) base			
Empirical intuition and past trends based pricing			

Table 214: Port pricing principles

10.2.10 Standard types of infrastructure fees

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ²⁰⁰	Other (explain)
Berth fees (use of wet side of the quay – ship related)		X			X		
Wharfage fees (use of the dry side of the quay – cargo related)							
Navigation aid fees							
Idle ship laying fees (ships not loading/unloading)							
Truck entrance/exit							
Truck parking for loading/unloading at loading/unloading bay							
Truck parking for trucks not loading/unloading							

²⁰⁰ Shipper or receiver

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ²⁰⁰	Other (explain)
Train entrance/exit							
Train use of rail infrastructure for loading/unloading							
Train use of rail infrastructure other than for loading/unloading							
Other (explain)							

Table 215: Standard types of infrastructure fees

10.2.11 Status and unit basis for charging of infrastructure fees

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ²⁰¹	Confidential	Negotiable	Non-negotiable ²⁰²	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Berth fees (use of wet side of the quay – ship related)	X				Per visiting vessel and per ton of processed cargo
Wharfage fees (use of the dry side of the quay – cargo related)					
Navigation aid fees					
Idle ship laying fees (ships not loading/unloading)					
Truck entrance/exit					
Truck parking for loading/unloading at loading/unloading bay					
Truck parking for trucks not loading/unloading					

²⁰¹ Published (in any place: black board, info board, web page, regulation, etc.)

²⁰² Not „floating“ fees, meaning that their increase or decrease requires an approval/decision or change of regulation by port authority or municipal, provincial or national government

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ²⁰¹	Confidential	Negotiable	Non-negotiable ²⁰²	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Train entrance/exit					
Train use of rail infrastructure for loading/unloading					
Train use of rail infrastructure other than for loading/unloading					
Other (explain)					

Table 216: Status and unit basis for infrastructure fees

10.2.12 Standard types of service fees (cargo related & nautical-technical services)

What are the main/standard service fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if applied in your port	Mark X if service is compulsory	Charged by				Paid by			
			Port authority	Port operator	Tug operator	Government (e.g. for pilots)	Other (explain)	Ship owner	Cargo owner ²⁰³	Other (explain)
Vessel loading/unloading										
Wagon loading/unloading										
Truck loading/unloading										
Warehousing / storage										
Yard handling										
Reception/delivery at the gates										
Other (explain)										
Sea pilotage										
River pilotage										
Towage (port tugs)										
Line handling (fasting/unfasting a vessel)										
Waste removal										
Other (explain)										

Table 217: Standard types of service fees

²⁰³ Shipper or receiver

10.2.13 Status and unit basis for charging of service fees

What is the status of service fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ²⁰⁴	Confidential	Negotiable	Non-negotiable	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please indicate below)</i>
Vessel loading/unloading					
Wagon loading/unloading					
Truck loading/unloading					
Warehousing / storage					
Yard handling					
Reception/delivery at the gates					
Other (explain)					
Sea pilotage					
River pilotage					
Towage (port tugs)					
Line handling (fasting/unfasting a vessel)					
Waste removal					
Other (explain)					

Table 218: Status and unit basis for charging of service fees

²⁰⁴ Published (in any place: black board, info board, web page, regulation, etc.)

10.2.14 Price differentiation methods for infrastructure fees

What price differentiation ²⁰⁵ methods for infrastructure fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X	X				X			
Wharfage fees (use of the dry side of the quay – cargo related)									
Navigation aid fees									
Idle ship laying fees (ships not loading/unloading)									
Truck entrance/exit									
Truck parking for loading/unloading at loading/unloading bay									
Truck parking for trucks not loading/unloading									
Train entrance/exit									
Train use of rail infrastructure for loading/unloading									
Train use of rail infrastructure other than for loading/unloading									
Other (explain)									

Table 219: Price differentiation methods for infrastructure fees

²⁰⁵ Please see the section of definitions at the beginning

10.2.15 Price differentiation methods for service fees

What price differentiation ²⁰⁶ methods for service fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Vessel loading/unloading									
Wagon loading/unloading									
Truck loading/unloading									
Warehousing / storage									
Yard handling									
Reception/delivery at the gates									
Other (explain)									
Sea pilotage									
River pilotage									
Towage (port tugs)									
Line handling (fasting/unfasting a vessel)									
Other (explain)									

Table 220: Price differentiation methods for service fees

²⁰⁶ Ibid.

10.2.16 Setting of infrastructure fees

Who sets the infrastructure fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Berth fees (use of wet side of the quay – ship related)		X						
Wharfage fees (use of the dry side of the quay – cargo related)								
Navigation aid fees								
Idle ship laying fees (ships not loading/unloading)								
Truck entrance/exit								
Truck parking for loading/unloading at loading/unloading bay								
Truck parking for trucks not loading/unloading								
Train entrance/exit								
Train use of rail infrastructure for loading/unloading								
Train use of rail infrastructure other than for loading/unloading								
Other (explain)								

Table 221: Setting of infrastructure fees

10.2.17 Setting of service fees

Who sets the service fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Vessel loading/unloading								
Wagon loading/unloading								
Truck loading/unloading								
Warehousing / storage								
Yard handling								
Reception/delivery at the gates								
Other (explain)								
Sea pilotage								
River pilotage								
Towage (port tugs)								
Line handling (fasting/unfasting a vessel)								
Other (explain)								

Table 222: Setting of service fees

10.2.18 Regulatory aspects of port tariffs

Regulatory framework for tariffs in your port <i>(mark the appropriate answers with X; any comments in the comment section)</i>	Legal act needed for tariff setting	Regulated minimum (price floor)	Regulated maximum (price cap)	Determined by concession contract	Independent decision of port operator	Other (explain)
Infrastructure fees	X					
Cargo related service fees						
Nautical-technical service fees						
Other (explain)						

Table 223: Regulatory aspects of port tariffs

10.2.19 Adjustment of port tariffs

How often do you adjust the port tariffs in your port? <i>(mark the appropriate answers with X; multiple answers allowed; any comments in the comment section)</i>	Quarterly	Semesterly	Annually	Multiannual	Do you take into account inflation rates every year?	Other (explain)
Infrastructure fees				X		
Cargo related service fees						
Nautical-technical service fees						
Other (explain)						

Table 224: Adjustment of port tariffs

10.2.20 Depreciation of port assets

Is the asset subject to depreciation? <i>(mark the appropriate answers with X)</i>	Basis of depreciation <i>(Please fill in only if the asset is subject to depreciation)</i>						
	Mark X where applicable			Period of depreciation (years)	Mark X where applicable		
	Historic or original cost	Present replacement cost	Future replacement cost		Straight line method	Compounded (sinking fund) method	Other (explain)
Navigation aids							
Capital dredging							
Maintenance dredging							
Breakwaters (seaport)							
Bank protection							
Operational concrete quays	X						
Non-operational quays	X						
Steel dolphin piers							
Land							
Filling of land							
Floating cranes	X						
Quay cranes	X						
Mobile cranes	X						
Rubber tyred gantry cranes							
Rail mounted gantry cranes	X						
Reach stackers	X						
Forklifts	X						
Other							

Table 225: Depreciation of port assets

10.2.21 Methodologies for price calculation

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i>
	Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>
Infrastructure fees <i>(please write your own tariffs below)</i>	
For dry bulk and liquid bulk cargo	0.20 EUR/ton
For other cargo	0.40 EUR/ton
For self-propelled and non-self-propelled vessels	25 EUR/visit
For passenger ships, ro-ro ships and ferries	15 EUR/visit
For bunkering, supply etc.	20 EUR/visit
Service fees <i>(please write your own tariffs below)</i>	Not collected by BPICo
Nautical-technical services <i>(please write your own tariffs below)</i>	Not collected by BPICo

Table 226: Methodologies for price calculation

10.2.22 Alternative pricing methods options

Alternative options for pricing of port fees <i>(mark X where you believe that the proposed alternative pricing method is applicable, or for which type of fees you could consider any of the below alternative pricing methods)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Congestion based pricing ²⁰⁷			
Marginal cost based pricing			
Price differentiation – performance based (on time ²⁰⁸ and/or volume)			
Price differentiation – based on quality of service ²⁰⁹			
Two-part tariffs 1 (fixed basis + variable time)			
Two-part tariffs 2 (fixed basis plus + variable amount of cargo)			
Cost based pricing (with all its variants)			
Value based pricing			
Auction based pricing – selling port slots forward ²¹⁰			
(Propose yourself)			
...			
...			

Table 227: Alternative port pricing methods

²⁰⁷ Price increase when congestion degree (demand for port services) is high, decrease when it is low.

²⁰⁸ This option can maximize throughput and reduce congestion.

²⁰⁹ Based on availability of specialized equipment, dedicated terminals, extended or specialized storage, proximity to production and to markets, depth of access channel, ancillary logistics services, freeport / export processing zone, etc.

²¹⁰ Ports may obtain better information on future demand.

10.2.23 Case study

Please respond to the following simplified case study example (in case of any data are missing, please assume them according to your experience).

Let the following hypothetical cases occur in your port:

- s) Pushed convoy with four barges, each having net tonnage (NT) of 2500 tons, each carrying 1500 tons of wheat, unloads in your port. Pusher has 2800 HP of engine power installed (1 HP = 0.7457 kW). Convoy takes no shore-side power, no water and has no waste to dispose of. Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

25 euro for the visit of the pusher = 25 EUR

25 euro for the visit of each of the barges = 100 EUR

1500 tons x 4 barges x 0.20 euro/ton = 1200 EUR overall

TOTAL: 1325 EUR infrastructure fees

Note: The port operator/concessionaire collects the taxes for unloading, storage and other services

- t) Self-propelled barge (MCV), NT = 2800 tons, length overall L_{oa} = 92 m, loads 1200 tons of fertilizers in bulk. After loading, the vessel stays in port for 9 hours, until daylight. No other services are required from the vessel and its crew.

Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

1200 tons x 0.20 euro = 240 euro + 25 euro/visit = 265 euro total for infrastructure fees

Notes:

Table 228: Case study

10.2.24 Comments

Comments section

(please first state for which table you are giving the comment)

The following needs to be clarified: the method for forming the fees in the other ports within territorial department “Port of Lom” branch is identical to the examples given in Table 22.

Tables 11, 12, 14, 16: the value of these fees is determined by the port operator or concessionaire, and they are for the services they provide. The fees for these services are public.

Table 4: Bulgarian Ports Infrastructure Company receives funding through targeted subsidies from the state budget

Table 5: The information for revenues is only for the services provided by BPICo as port authority of the Bulgarian ports for public transport.

Table 229: Comments

10.3 Port of Ruse

Port authority	<i>Bulgarian Ports Infrastructure Company is the managing body of Bulgarian ports for public transport, where Branch – Territorial directorate Port Ruse is part of the Company with certain territorial range of activity. More information on www.bgports.bg</i>
Port operator	<i>(write here if you answer the Questionnaire as port operator)</i>
Date:	<i>11 Oct. 21</i>
Contact details:	<i>Office.rousse@bgports.bg</i>

Please read me first!

Dear Madams and Sirs,

You are viewing a complex Questionnaire on port pricing principles in the Danube Region ports (*hereinafter: Questionnaire*). Its complexity is a result of the attempt to encompass all possible diversities of port governance and operations models in nine different countries along the Danube and a large variety of port pricing models in involved inland waterway and seaports. You will probably note that the port tariffs terminology used in the Questionnaire may not fully reflect the terminology used in your country/port. This is why generic definitions are provided here and you will have an opportunity to adjust and explain a concrete situation in your country/port if it differs from a generic setup used here. Since this Questionnaire encompasses a wide variety of port pricing policies, we kindly encourage you to read it carefully and discuss and fill it together with your (transport?) economists or department in charge of tariff policies. The Questionnaire is given to you with sufficient time before the deadline, so please feel free to take your time filling it. Your best source of information for this Questionnaire is your own experience, knowledge and employees.

The objectives of this Questionnaire are the following:

- to provide an insight into the nature and mechanisms of port tariffs charged by port governing bodies (such as port authorities of whichever form), port operating companies (port/terminal operators) and providers of nautical services (mostly in seaports) such as line handling (berthing/de-berthing, a.k.a. fasting/unfasting), pilotage and towage;
- to identify who finances ports, who charges what and who pays what;
- to attempt to distinguish the nature infrastructure charges (for the use of infrastructure) and service charges (for provision of various services);
- to determine the basis and calculation methodology for each tariff;
- to determine whether the tariffs are calculated on a cost based approach (and what kind of cost), performance based approach, value based approach (i.e. demand based approach), strategic principles, (or on any other);

- to assess the level of autonomy and regulation of tariff settings;
- to determine the level of dynamics of tariffs;
- to determine the existence of regulated tariff ceiling or floor.

The authors of this Questionnaire remain at your service for any type of clarification.

Thank you.

iC consulenten & DIONYSUS Project team

10.3.1 Definitions

Definitions (for the purposes of this Questionnaire)	
Port tariffs	Common term for all types of charges, dues and fees applicable in ports.
Infrastructure fees	Charged for the use of port infrastructure such as water body, anchorage, wet side of the quay, dry side of the quay ²¹¹ , usage of rail or road infrastructure (entrance/exit/parking), vessel laying fee, aids to navigation, etc. These fees are usually charged by the port governing body (e.g. port authority), or concessionaire (depending on the type of concession) and, depending on the country, may be paid by vessel owner/operator (or by agent on their behalf), cargo owner, truck or rail operator. In case of vessel related fees, infrastructure fees are based on carrying capacity of the vessel, Gross Tonnage (GT), Net Tonnage (NT), on vessel length, time spent at berth, actual cargo quantity being loaded/unloaded, etc. Typically charged by port authority (or concessionaire) and paid by the vessel/vehicle owner or cargo owner.
Service fees	Fees charged for the provision of various services, such as loading/unloading (use of cranes and similar transshipment devices), storage, warehousing, yard handling, reception/delivery at gates, etc. Usually charged by port/terminal operator and paid usually by cargo owner (shipper/receiver).
Nautical-technical services fees	Pilotage, towage, line handling (mooring/unmooring or fastening/unfastening), shore-side electricity supply, water supply, etc. Typically charged by service provider or port authority or government (in case of pilotage), and paid by the vessel owner.
Navigation aid fees	Fees charges for the use of navigation aids (NAVAID) such as aids to navigation (AtoN), VTMIS, safety of navigation, lighthouses, navigation buoys, signals, markers, radio beacons, etc. Applicable mostly in seaports.

²¹¹ In certain cases, this fee may be split in two, whereas the ship owner pays for the usage of the wet side of the quay (berth) and the cargo owner pays for the usage of the dry side of the quay (berth).

Definitions (for the purposes of this Questionnaire)

Economic approach (to pricing)	Based on marginal costs, taking into consideration the effects on all parties, including benefits derived by others. Marginal costs in port are extremely difficult to define, but to put it simply, they represent the change in total cost associated with the unit change in the level of activity ²¹² . However, since marginal costs are not only extremely difficult to define, they are also very difficult to estimate, this approach comes down to favouring the average cost based pricing. In other words, a cost recovery based approach.
Financial approach	Prices set on the basis of accounting costs, to recover fixed and variable costs and to provide an adequate rate of return and certain profit.
Public body approach	Aims to foster local development and economic activities, to maximize throughput, to maintain port services as public good in public interest; often requires subsidies (e.g. to cover at least part of the fixed infrastructure costs).
Cost based pricing	The simplest pricing principle, calculates prices (fees) based on simple cost (fixed, variable or even marginal) recovery, but <u>not including the past investments</u> . Cost based tariffs are used to achieve the marketing objective of maximizing the use of port services and the financial objective of covering the fixed and variable costs of these services.
Cost-plus based pricing	Calculates prices (fees) based on cost (fixed and variable) plus a determined profit margin.
Performance based pricing	Calculates fees based on time efficiency of usage of the service or facility (time a ship spends at berth, time a cargo spends in a base or transit storage, etc.). Promotes efficient behaviour of the users of a facility. Used to achieve the operational objective of maximizing the throughput of port facilities while limiting the level of congestion and to achieve the marketing objective of minimizing the traffic loss owing to congestion.
Value based pricing	Also known as pricing principle based on what-the-traffic-could-bear , but which can be better assessed by the value that users attach to them. Used to meet the financial objective of generating sufficient revenues to cover the ports' costs and the marketing objective of limiting the loss of traffic as a result of generating these revenues.
Strategic port pricing	Used for promotion of specific objectives, such as maximization of use of the facility, attraction of a particular type of cargo, promotion of exports of certain cargoes, etc.

²¹² Goss, R.O., Stevens, H. (2001): Marginal Costs in Seaports, *International Journal of Maritime Economics*, Vol. 3, pp.128-138.

Definitions (for the purposes of this Questionnaire)

<p>Pricing based on empirical intuition, “what the others do” and past trends</p>	<p>Approximate method which does not necessarily take into account the cost recovery and is believed to provide sufficient contribution for the incomes of the port authority / port operator. Pricing strategy that anticipates the reaction of other ports tariffs resulting from this strategy may or may not satisfy the other previous principles.</p>
<p>Price differentiation</p>	<p>Charging different prices for the same services to different objects of charging (“customers”). For example, charging of berth fees to ships not just according to their physical characteristics, but also according to the type of vessels (e.g. higher fees for tankers, lower for Ro-Ro vessels). Another example is charging different prices of wharfage fees to cargo owners not just according to the tons loaded/unloaded but also according to the value of cargo, or volume they contract with the port operator. Similar method is used for storage fees.</p>

10.3.2 Status of ports

Ports (as physical/infrastructure objects, not simply port companies) in your country have the status of: <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
Strategic assets of transport infrastructure, based on applicable law(s)	X
Special importance in the country's development strategies	X
Have special legal protection	X
Pure profit entities	
Fully privatizable assets (can be sold, including the land)	
No special status	
Other (please explain)	

Table 230: Status of ports

10.3.3 Financing of new investments

Who finances the new investments within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port Authority (own funds)	Port operator	Concessionaire	Rail company	Other (explain in comments)
Port infrastructure	X			X	X	X		
Internal road infrastructure					X	X		
Internal rail infrastructure					X	X		
Suprastructure (warehouses, buildings..)				X	X	X		
Equipment (cranes, etc.)					X	X		

Table 231: Financing of new investments

10.3.4 Financing of maintenance of existing assets

Who finances the maintenance of existing assets within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port authority (own funds)	Port operator	Concessionaire	Rail company	Other <i>(explain in comments)</i>
Port infrastructure	X			X	X	X		
Internal road infrastructure					X	X		
Internal rail infrastructure					X	X		
Suprastructure				X	X	X		
Equipment (cranes, etc.)					X	X		

Table 232: Financing of maintenance of existing assets

10.3.5 Public subsidies for ports

Do you receive any subsidies (regularly or sometimes) from the public sector? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	Yes				In the past				No
	Through investments	In cash flow	Preferential loans	Other (explain)	Through investments	In cash flow	Preferential loans	Other (explain)	
For port infrastructure									X
For port suprastructure									X
For port equipment									X
For port labour									X
For equipment (cranes, etc.)									X
Other (explain ²¹³)									X

Table 233: Public subsidies for port

²¹³ In the comment section.

10.3.6 Use of revenues/incomes

If you are a public port and if you make any revenues ²¹⁴ /incomes, how are they used? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
To cover fixed and variable costs, the rest transferred to the public (state, municipality...) budget	
To cover only variable costs, the rest transferred to the public (state, municipality...) budget	
Fully transferred to the public (state, municipality...) budget	
Used for further infrastructure investments and/or maintenance	X
Used for development projects	X
Used for bonuses to the employees	
We make certain revenues but no net positive incomes ²¹⁵	
Other (please explain ²¹⁶)	

Table 234: Use of incomes and revenues

10.3.7 Objectives of port pricing and charging

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives²¹⁷)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Efficient/optimal use of port assets	X			
Provision of public service ²¹⁸	X			

²¹⁴ Revenue is the total amount of income generated by the use of infrastructure or services related to the port's primary operations. Income or *net income* is a company's total revenue after all operating costs are deducted or simply *profit*.

²¹⁵ If you select this option, please explain in the comments section on the last page.

²¹⁶ List here and explain in comments section

²¹⁷ For example, port authority cannot have both objectives of public service provision and profit generation for infrastructure fees.

²¹⁸ Where proper functioning of ports is seen as public service or public interest, not necessarily a profitable activity.

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives²¹⁷)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Cost recovery 1 (operating & maintenance expenses only)				
Cost recovery 2 (1+depreciation)				
Cost recovery 3 (1+2+interest charges on loans)				
Cost recovery 4 (1+2+3+provisions for port development and improvement)				
Cost recovery 5 (1+2+3+4+rate of return)				
Maximising employment				
Minimizing welfare losses				
Maximising throughput				
Pure profit generation (regardless of any expenses) ²¹⁹				
Other (explain)				

Table 235: Port pricing objectives

10.3.8 Approach to port pricing principles

What is your main approach in establishing the port pricing principles? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Economic approach ²²⁰			
Financial approach			
Public body (public good) approach	X		

Table 236: Approach to port pricing principles

²¹⁹Usually a port operator's objective in privatized (sold, leased, concessioned) ports where no particular regard is made towards the real cost and where all income from an activity is seen as pure profit (e.g. crane use for loading/unloading).

²²⁰Please see the definitions

10.3.9 Port pricing principles

On what principles do you base tariffs in your port? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Cost recovery base			
Performance base	X		
Value (for the user) base			
Empirical intuition and past trends based pricing	X		

Table 237: Port pricing principles

10.3.10 Standard types of infrastructure fees

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ²²¹	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X	X			X		
Wharfage fees (use of the dry side of the quay – cargo related)							
Navigation aid fees							
Idle ship laying fees (ships not loading/unloading)							
Truck entrance/exit							
Truck parking for loading/unloading at loading/unloading bay							
Truck parking for trucks not loading/unloading							
Train entrance/exit							

²²¹Shipper or receiver

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ²²¹	Other (explain)
Train use of rail infrastructure for loading/unloading							
Train use of rail infrastructure other than for loading/unloading							
Other (explain)							

Table 238: Standard types of infrastructure fees

10.3.11 Status and unit basis for charging of infrastructure fees

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ²²²	Confidential	Negotiable	Non-negotiable ²²³	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Berth fees (use of wet side of the quay – ship related)	X				Per ship per visit; ton of cargo loaded/unloaded
Wharfage fees (use of the dry side of the quay – cargo related)					
Navigation aid fees					
Idle ship laying fees (ships not loading/unloading)	These are not defined as infrastructure fees, but as port services and are paid to the port operator.				
Truck entrance/exit					
Truck parking for loading/unloading at loading/unloading bay					
Truck parking for trucks not loading/unloading					

²²² Published (in any place: black board, info board, web page, regulation, etc.)

²²³Not „floating“ fees, meaning that their increase or decrease requires an approval/decision or change of regulation by port authority or municipal, provincial or national government

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ²²²	Confidential	Negotiable	Non-negotiable ²²³	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Train entrance/exit					
Train use of rail infrastructure for loading/unloading					
Train use of rail infrastructure other than for loading/unloading					
Other (explain)					

Table 239: Status and unit basis for infrastructure fees

10.3.12 Standard types of service fees (cargo related & nautical-technical services)

What are the main/standard service fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if applied in your port	Mark X if service is compulsory	Charged by				Paid by			
			Port authority	Port operator	Tug operator	Government (e.g. for pilots)	Other (explain)	Ship owner	Cargo owner ²²⁴	Other (explain)
Vessel loading/unloading				X					X	
Wagon loading/unloading				X					X	
Truck loading/unloading				X					X	
Warehousing / storage				X					X	
Yard handling				X					X	
Reception/delivery at the gates										
Other (explain)										
Sea pilotage										
River pilotage										
Towage (port tugs)					X			X	X	
Line handling (fasting/unfasting a vessel)										
Waste removal										
Other (explain)										

Table 240: Standard types of service fees

²²⁴Shipper or receiver

10.3.13 Status and unit basis for charging of service fees

What is the status of service fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ²²⁵	Confidential	Negotiable	Non-negotiable	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please indicate below)</i>
Vessel loading/unloading	X		X		PER TON
Wagon loading/unloading	X		X		PER TON
Truck loading/unloading	X		X		PER TON
Warehousing / storage	X		X		PER SQ.M.
Yard handling	X		X		PER TON
Reception/delivery at the gates					
Other (explain)					
Sea pilotage					
River pilotage					
Towage (port tugs)		X			
Line handling (fasting/unfasting a vessel)					
Waste removal					
Other (explain)					

Table 241: Status and unit basis for charging of service fees

²²⁵ Published (in any place: black board, info board, web page, regulation, etc.)

10.3.14 Price differentiation methods for infrastructure fees

What price differentiation ²²⁶ methods for infrastructure fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X	X				X			
Wharfage fees (use of the dry side of the quay – cargo related)									
Navigation aid fees									
Idle ship laying fees (ships not loading/unloading)									
Truck entrance/exit									
Truck parking for loading/unloading at loading/unloading bay									
Truck parking for trucks not loading/unloading									
Train entrance/exit									
Train use of rail infrastructure for loading/unloading									
Train use of rail infrastructure other than for loading/unloading									
Other (explain)									

Table 242: Price differentiation methods for infrastructure fees

²²⁶Please see the section of definitions at the beginning

10.3.15 Price differentiation methods for service fees

What price differentiation ²²⁷ methods for service fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Vessel loading/unloading		X			X	X			
Wagon loading/unloading		X			X	X			
Truck loading/unloading		X			X	X			
Warehousing / storage		X				X		X	Sq.m
Yard handling									
Reception/delivery at the gates									
Other (explain)									
Sea pilotage									
River pilotage									
Towage (port tugs)									
Line handling (fasting/unfasting a vessel)									
Other (explain)									

Table 243: Price differentiation methods for service fees

²²⁷Ibid.

10.3.16 Setting of infrastructure fees

Who sets the infrastructure fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Berth fees (use of wet side of the quay – ship related)		X						
Wharfage fees (use of the dry side of the quay – cargo related)								
Navigation aid fees								
Idle ship laying fees (ships not loading/unloading)								
Truck entrance/exit								
Truck parking for loading/unloading at loading/unloading bay								
Truck parking for trucks not loading/unloading								
Train entrance/exit								
Train use of rail infrastructure for loading/unloading								
Train use of rail infrastructure other than for loading/unloading								
Other (explain)								

Table 244: Setting of infrastructure fees

10.3.17 Setting of service fees

Who sets the service fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Vessel loading/unloading				X	X			
Wagon loading/unloading				X	X			
Truck loading/unloading				X	X			
Warehousing / storage				X	X			
Yard handling								
Reception/delivery at the gates								
Other (explain)								
Sea pilotage								
River pilotage								
Towage (port tugs)								Tug owners
Line handling (fasting/unfasting a vessel)								
Other (explain)								

Table 245: Setting of service fees

10.3.18 Regulatory aspects of port tariffs

Regulatory framework for tariffs in your port <i>(mark the appropriate answers with X; any comments in the comment section)</i>	Legal act needed for tariff setting	Regulated minimum (price floor)	Regulated maximum (price cap)	Determined by concession contract	Independent decision of port operator	Other (explain)
Infrastructure fees	X					
Cargo related service fees					X	
Nautical-technical service fees						
Other (explain)						

Table 246: Regulatory aspects of port tariffs

10.3.19 Adjustment of port tariffs

How often do you adjust the port tariffs in your port? <i>(mark the appropriate answers with X; multiple answers allowed; any comments in the comment section)</i>	Quarterly	Semesterly	Annually	Multiannual	Do you take into account inflation rates every year?	Other (explain)
Infrastructure fees				X		
Cargo related service fees	Not collected by BPICo					
Nautical-technical service fees						
Other (explain)						

Table 247: Adjustment of port tariffs

10.3.20 Depreciation of port assets

Is the asset subject to depreciation? <i>(mark the appropriate answers with X)</i>	Basis of depreciation <i>(Please fill in only if the asset is subject to depreciation)</i>						
	Mark X where applicable			Period of depreciation (years)	Mark X where applicable		
	Historic or original cost	Present replacement cost	Future replacement cost		Straight line method	Compounded (sinking fund) method	Other (explain)
Navigation aids							
Capital dredging							
Maintenance dredging							
Breakwaters (seaport)							
Bank protection							
Operational concrete quays	x						
Non-operational quays	x						
Steel dolphin piers							
Land							
Filling of land							
Floating cranes	x						
Quay cranes	x						
Mobile cranes	x						
Rubber tyred gantry cranes	x						
Rail mounted gantry cranes	x						
Reach stackers	x						
Forklifts	x						
Other							

Table 248: Depreciation of port assets

10.3.21 Methodologies for price calculation

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i> Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>
Infrastructure fees (please write your own tariffs below)	
For bulk and liquid cargoes	- 0,20 EUR/ ton
For other cargoes	- 0,40 EUR/ ton
for self-propelled and not self-propelled river vessels	- 25 EUR/ visit
for passenger ships, Ro-Ro and ferry-boat ships	- 15 EUR/ visit
For bunkering	- 20 euro/ visit
Service fees (please write your own tariffs below)	Not collected by BPICo
Nautical-technical services (please write your own tariffs below)	Not collected by BPICo

Table 249: Methodologies for price calculation

10.3.22 Alternative pricing methods options

Alternative options for pricing of port fees <i>(mark X where you believe that the proposed alternative pricing method is applicable, or for which type of fees you could consider any of the below alternative pricing methods)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Congestion based pricing ²²⁸			
Marginal cost based pricing			
Price differentiation – performance based (on time ²²⁹ and/or volume)			
Price differentiation – based on quality of service ²³⁰			
Two-part tariffs 1 (fixed basis + variable time)			
Two-part tariffs 2 (fixed basis plus + variable amount of cargo)			
Cost based pricing (with all its variants)			
Value based pricing			
Auction based pricing – selling port slots forward ²³¹			
(Propose yourself)			
...			
...			

Table 250: Alternative port pricing methods

²²⁸Price increase when congestion degree (demand for port services) is high, decrease when it is low.

²²⁹ This option can maximize throughput and reduce congestion.

²³⁰ Based on availability of specialized equipment, dedicated terminals, extended or specialized storage, proximity to production and to markets, depth of access channel, ancillary logistics services, freeport / export processing zone, etc.

²³¹Ports may obtain better information on future demand.

10.3.23 Case study

Please respond to the following simplified case study example (in case of any data are missing, please assume them according to your experience).

Let the following hypothetical cases occur in your port:

- u) Pushed convoy with four barges, each having net tonnage (NT) of 2500 tons, each carrying 1500 tons of wheat, unloads in your port. Pusher has 2800 HP of engine power installed (1 HP = 0.7457 kW). Convoy takes no shore-side power, no water and has no waste to dispose of. Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation of infrastructure taxes collected by BPICo only without reductions or extra charges:

25 euro for the visit of the pusher (= 25 euro)

25 euro for the visit of each barge (=100 euro total)

1500 x 4 x 0.20 euro for unloading bulk cargo (wheat) = 1200 euro total.

TOTAL 1325 euro infrastructure taxes.

Port operator collects unloading, storage and other service prices.

Ship agent and/ or cargo forwarder could collect other prices.

- v) Self-propelled barge (MCV), NT = 2800 tons, length overall L_{oa} = 92 m, loads 1200 tons of fertilizers in bulk. After loading, the vessel stays in port for 9 hours, until daylight. No other services are required from the vessel and its crew.

Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation: 1200 tons x 0.20 euro = 240 euro + 25 euro/ visit = 265 euro infrastructure taxes.

Notes:

For additional prices ship agents and port operators must reply

Table 251: Case study

10.3.24 Comments

Comments section

(please first state for which table you are giving the comment)

Table 5: The answer refers to the revenue/ income of BPICo. Revenues and incomes of port operators are subject to separate management and probably will have different variation in the table.

Table 10: Information is given ONLY for infrastructure fees paid to BPICo. Although other fees exist (such as parking prices, idle ship stay, etc., prices are defined and collected by the port operator and are defined as services, not infrastructure fees.

Tables 11: Status and unit basis for charging of service fees – answers are given for fees collected by port operators and NOT by BPICo., on the basis of publicly known information and experience.

Same for table 14 Price differentiation methods for service fees

TARIFF on Port Dues Levied by Bulgarian Ports Infrastructure Company can be accessed on the following link:

<http://www.bgports.bg/en/page/114>

Table 252: Comments



11 Romania

11.1 Port of Constanta

Port authority	CN Administrația Porturilor Maritime SA Constanța
Port operator	(write here if you answer the Questionnaire as port operator)
Date:	
Contact details:	

Please read me first!

Dear Madams and Sirs,

You are viewing a complex Questionnaire on port pricing principles in the Danube Region ports (*hereinafter: Questionnaire*). Its complexity is a result of the attempt to encompass all possible diversities of port governance and operations models in nine different countries along the Danube and a large variety of port pricing models in involved inland waterway and seaports. You will probably note that the port tariffs terminology used in the Questionnaire may not fully reflect the terminology used in your country/port. This is why generic definitions are provided here and you will have an opportunity to adjust and explain a concrete situation in your country/port if it differs from a generic setup used here. Since this Questionnaire encompasses a wide variety of port pricing policies, we kindly encourage you to read it carefully and discuss and fill it together with your (transport?) economists or department in charge of tariff policies. The Questionnaire is given to you with sufficient time before the deadline, so please feel free to take your time filling it. Your best source of information for this Questionnaire is your own experience, knowledge and employees.

The objectives of this Questionnaire are the following:

- to provide an insight into the nature and mechanisms of port tariffs charged by port governing bodies (such as port authorities of whichever form), port operating companies (port/terminal operators) and providers of nautical services (mostly in seaports) such as line handling (berthing/de-berthing, a.k.a. fasting/unfasting), pilotage and towage;
- to identify who finances ports, who charges what and who pays what;
- to attempt to distinguish the nature infrastructure charges (for the use of infrastructure) and service charges (for provision of various services);
- to determine the basis and calculation methodology for each tariff;
- to determine whether the tariffs are calculated on a cost based approach (and what kind of cost), performance based approach, value based approach (i.e. demand based approach), strategic principles, (or on any other);

- to assess the level of autonomy and regulation of tariff settings;
- to determine the level of dynamics of tariffs;
- to determine the existence of regulated tariff ceiling or floor.

The authors of this Questionnaire remain at your service for any type of clarification.

Thank you.

iC consulenten & DIONYSUS Project team

11.1.1 Definitions

Definitions (for the purposes of this Questionnaire)	
Port tariffs	Common term for all types of charges, dues and fees applicable in ports.
Infrastructure fees	Charged for the use of port infrastructure such as water body, anchorage, wet side of the quay, dry side of the quay ²³² , usage of rail or road infrastructure (entrance/exit/parking), vessel laying fee, aids to navigation, etc. These fees are usually charged by the port governing body (e.g. port authority), or concessionaire (depending on the type of concession) and, depending on the country, may be paid by vessel owner/operator (or by agent on their behalf), cargo owner, truck or rail operator. In case of vessel related fees, infrastructure fees are based on carrying capacity of the vessel, Gross Tonnage (GT), Net Tonnage (NT), on vessel length, time spent at berth, actual cargo quantity being loaded/unloaded, etc. Typically charged by port authority (or concessionaire) and paid by the vessel/vehicle owner or cargo owner.
Service fees	Fees charged for the provision of various services, such as loading/unloading (use of cranes and similar transshipment devices), storage, warehousing, yard handling, reception/delivery at gates, etc. Usually charged by port/terminal operator and paid usually by cargo owner (shipper/receiver).
Nautical-technical services fees	Pilotage, towage, line handling (mooring/unmooring or fastening/unfastening), shore-side electricity supply, water supply, etc. Typically charged by service provider or port authority or government (in case of pilotage), and paid by the vessel owner.
Navigation aid fees	Fees charges for the use of navigation aids (NAVAID) such as aids to navigation (AtoN), VTMIS, safety of navigation, lighthouses, navigation buoys, signals, markers, radio beacons, etc. Applicable mostly in seaports.

²³² In certain cases, this fee may be split in two, whereas the ship owner pays for the usage of the wet side of the quay (berth) and the cargo owner pays for the usage of the dry side of the quay (berth).

Definitions (for the purposes of this Questionnaire)

Economic approach (to pricing)	Based on marginal costs, taking into consideration the effects on all parties, including benefits derived by others. Marginal costs in port are extremely difficult to define, but to put it simply, they represent the change in total cost associated with the unit change in the level of activity ²³³ . However, since marginal costs are not only extremely difficult to define, they are also very difficult to estimate, this approach comes down to favouring the average cost based pricing. In other words, a cost recovery based approach.
Financial approach	Prices set on the basis of accounting costs, to recover fixed and variable costs and to provide an adequate rate of return and certain profit.
Public body approach	Aims to foster local development and economic activities, to maximize throughput, to maintain port services as public good in public interest; often requires subsidies (e.g. to cover at least part of the fixed infrastructure costs).
Cost based pricing	The simplest pricing principle, calculates prices (fees) based on simple cost (fixed, variable or even marginal) recovery, but <u>not including the past investments</u> . Cost based tariffs are used to achieve the marketing objective of maximizing the use of port services and the financial objective of covering the fixed and variable costs of these services.
Cost-plus based pricing	Calculates prices (fees) based on cost (fixed and variable) plus a determined profit margin.
Performance based pricing	Calculates fees based on time efficiency of usage of the service or facility (time a ship spends at berth, time a cargo spends in a base or transit storage, etc.). Promotes efficient behaviour of the users of a facility. Used to achieve the operational objective of maximizing the throughput of port facilities while limiting the level of congestion and to achieve the marketing objective of minimizing the traffic loss owing to congestion.
Value based pricing	Also known as pricing principle based on what-the-traffic-could-bear , but which can be better assessed by the value that users attach to them. Used to meet the financial objective of generating sufficient revenues to cover the ports' costs and the marketing objective of limiting the loss of traffic as a result of generating these revenues.
Strategic port pricing	Used for promotion of specific objectives, such as maximization of use of the facility, attraction of a particular type of cargo, promotion of exports of certain cargoes, etc.

²³³ Goss, R.O., Stevens, H. (2001): Marginal Costs in Seaports, *International Journal of Maritime Economics*, Vol. 3, pp.128-138.

Definitions (for the purposes of this Questionnaire)

<p>Pricing based on empirical intuition, “what the others do” and past trends</p>	<p>Approximate method which does not necessarily take into account the cost recovery and is believed to provide sufficient contribution for the incomes of the port authority / port operator. Pricing strategy that anticipates the reaction of other ports tariffs resulting from this strategy may or may not satisfy the other previous principles.</p>
<p>Price differentiation</p>	<p>Charging different prices for the same services to different objects of charging (“customers”). For example, charging of berth fees to ships not just according to their physical characteristics, but also according to the type of vessels (e.g. higher fees for tankers, lower for Ro-Ro vessels). Another example is charging different prices of wharfage fees to cargo owners not just according to the tons loaded/unloaded but also according to the value of cargo, or volume they contract with the port operator. Similar method is used for storage fees.</p>

11.1.2 Status of ports

Ports (as physical/infrastructure objects, not simply port companies) in your country have the status of: <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
Strategic assets of transport infrastructure, based on applicable law(s)	X
Special importance in the country's development strategies	X
Have special legal protection	
Pure profit entities	
Fully privatizable assets (can be sold, including the land)	
No special status	
Other (please explain)	

Table 253: Status of ports

11.1.3 Financing of new investments

Who finances the new investments within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port Authority (own funds)	Port operator	Concessionaire	Rail company	Other (explain in comments)
Port infrastructure				X				
Internal road infrastructure				X				
Internal rail infrastructure				X			X	
Suprastructure					X			
Equipment (cranes, etc.)				X	X			

Table 254: Financing of new investments

11.1.4 Financing of maintenance of existing assets

Who finances the maintenance of existing assets within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port authority (own funds)	Port operator	Concessionaire	Rail company	Other <i>(explain comments)</i>	in
Port infrastructure				X					
Internal road infrastructure				X					
Internal rail infrastructure				X			X		
Suprastructure					X				
Equipment (cranes, etc.)					X				

Table 255: Financing of maintenance of existing assets

11.1.5 Public subsidies for ports

Do you receive any subsidies (regularly or sometimes) from the public sector? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	Yes				In the past				No
	Through investments	In cash flow	Preferential loans	Other (explain)	Through investments	In cash flow	Preferential loans	Other (explain)	
For port infrastructure									X
For port suprastructure									X
For port equipment									X
For port labour									X
For equipment (cranes, etc.)									X
Other (explain ²³⁴)									X

Table 256: Public subsidies for port

²³⁴ In the comment section.

11.1.6 Use of revenues/incomes

If you are a public port and if you make any revenues ²³⁵ /incomes, how are they used?	
<i>(mark the appropriate answer with X, multiple answers allowed)</i>	
To cover fixed and variable costs, the rest transferred to the public (state, municipality...) budget	X
To cover only variable costs, the rest transferred to the public (state, municipality...) budget	
Fully transferred to the public (state, municipality...) budget	
Used for further infrastructure investments and/or maintenance	X
Used for development projects	X
Used for bonuses to the employees	X
We make certain revenues but no net positive incomes ²³⁶	
Other (please explain ²³⁷)	

Table 257: Use of incomes and revenues

11.1.7 Objectives of port pricing and charging

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives²³⁸)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Efficient/optimal use of port assets	X		X	
Provision of public service ²³⁹				

²³⁵ Revenue is the total amount of income generated by the use of infrastructure or services related to the port's primary operations. Income or *net income* is a company's total revenue after all operating costs are deducted or simply *profit*.

²³⁶ If you select this option, please explain in the comments section on the last page.

²³⁷ List here and explain in comments section

²³⁸ For example, port authority cannot have both objectives of public service provision and profit generation for infrastructure fees.

²³⁹ Where proper functioning of ports is seen as public service or public interest, not necessarily a profitable activity.

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives²³⁸)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Cost recovery 1 (operating & maintenance expenses only)	X		X	
Cost recovery 2 (1+depreciation)				
Cost recovery 3 (1+2+interest charges on loans)				
Cost recovery 4 (1+2+3+provisions for port development and improvement)				
Cost recovery 5 (1+2+3+4+rate of return)	X		X	
Maximising employment				
Minimizing welfare losses				
Maximising throughput	X		X	
Pure profit generation (regardless of any expenses) ²⁴⁰				
Other (explain)				

Table 258: Port pricing objectives

11.1.8 Approach to port pricing principles

What is your main approach in establishing the port pricing principles? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Economic approach ²⁴¹	X		X
Financial approach	X		X
Public body (public good) approach			

²⁴⁰ Usually a port operator's objective in privatized (sold, leased, concessioned) ports where no particular regard is made towards the real cost and where all income from an activity is seen as pure profit (e.g. crane use for loading/unloading).

²⁴¹ Please see the definitions

Table 259: Approach to port pricing principles

11.1.9 Port pricing principles

On what principles do you base tariffs in your port? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Cost recovery base	X		X
Performance base	X		X
Value (for the user) base	X		X
Empirical intuition and past trends based pricing			

Table 260: Port pricing principles

11.1.10 Standard types of infrastructure fees

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ²⁴²	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X	X			X		
Wharfage fees (use of the dry side of the quay – cargo related)	X	X			X		
Navigation aid fees							
Idle ship laying fees (ships not loading/unloading)	X	X			X		
Truck entrance/exit	X	X					X
Truck parking for loading/unloading at loading/unloading bay							
Truck parking for trucks not loading/unloading							

²⁴² Shipper or receiver

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ²⁴²	Other (explain)
Train entrance/exit							
Train use of rail infrastructure for loading/unloading							
Train use of rail infrastructure other than for loading/unloading							
Other (explain)							

Table 261: Standard types of infrastructure fees

11.1.11 Status and unit basis for charging of infrastructure fees

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ²⁴³	Confidential	Negotiable	Non-negotiable ²⁴⁴	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Berth fees (use of wet side of the quay – ship related)	X		X		Example: GT and hour used
Wharfage fees (use of the dry side of the quay – cargo related)	X		X		
Navigation aid fees					
Idle ship laying fees (ships not loading/unloading)	X		X		
Truck entrance/exit	X		X		
Truck parking for loading/unloading at loading/unloading bay					
Truck parking for trucks not loading/unloading					

²⁴³ Published (in any place: black board, info board, web page, regulation, etc.)

²⁴⁴ Not „floating“ fees, meaning that their increase or decrease requires an approval/decision or change of regulation by port authority or municipal, provincial or national government

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ²⁴³	Confidential	Negotiable	Non-negotiable ²⁴⁴	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Train entrance/exit					
Train use of rail infrastructure for loading/unloading					
Train use of rail infrastructure other than for loading/unloading					
Other (explain)					

Table 262: Status and unit basis for infrastructure fees

11.1.12 Standard types of service fees (cargo related & nautical-technical services)

What are the main/standard service fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if applied in your port	Mark X if service is compulsory	Charged by				Paid by			
			Port authority	Port operator	Tug operator	Government (e.g. for pilots)	Other (explain)	Ship owner	Cargo owner ²⁴⁵	Other (explain)
Vessel loading/unloading	X	X		X				X		
Wagon loading/unloading	X	X		X				X	X	
Truck loading/unloading	X	X		X				X	X	
Warehousing / storage	X	X		X				X	X	
Yard handling	X	X		X				X	X	
Reception/delivery at the gates										
Other (explain)										
Sea pilotage	X	X	X				X			
River pilotage										
Towage (port tugs)	X	X	X				X			
Line handling (fasting/unfasting a vessel)	X	X	X				X			
Waste removal	X	X	X				X			
Other (explain)										

Table 263: Standard types of service fees

²⁴⁵ Shipper or receiver

11.1.13 Status and unit basis for charging of service fees

What is the status of service fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ²⁴⁶	Confidential	Negotiable	Non-negotiable	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please indicate below)</i>
Vessel loading/unloading		X	X		
Wagon loading/unloading		X	X		
Truck loading/unloading		X	X		
Warehousing / storage		X	X		
Yard handling		X	X		
Reception/delivery at the gates					
Other (explain)					
Sea pilotage	X		X		
River pilotage					
Towage (port tugs)	X		X		
Line handling (fasting/unfasting a vessel)	X		X		
Waste removal	X		X		
Other (explain)					

Table 264: Status and unit basis for charging of service fees

²⁴⁶ Published (in any place: black board, info board, web page, regulation, etc.)

11.1.14 Price differentiation methods for infrastructure fees

What price differentiation ²⁴⁷ methods for infrastructure fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X	X					X	X	X
Wharfage fees (use of the dry side of the quay – cargo related)	X	X					X	X	X
Navigation aid fees									
Idle ship laying fees (ships not loading/unloading)	X	X					X	X	X
Truck entrance/exit									X
Truck parking for loading/unloading at loading/unloading bay									
Truck parking for trucks not loading/unloading									
Train entrance/exit									
Train use of rail infrastructure for loading/unloading									
Train use of rail infrastructure other than for loading/unloading									
Other (explain)									

Table 265: Price differentiation methods for infrastructure fees

²⁴⁷ Please see the section of definitions at the beginning

11.1.15 Price differentiation methods for service fees

What price differentiation ²⁴⁸ methods for service fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Vessel loading/unloading									
Wagon loading/unloading									
Truck loading/unloading									
Warehousing / storage									
Yard handling									
Reception/delivery at the gates									
Other (explain)									
Sea pilotage									X
River pilotage									
Towage (port tugs)									X
Line handling (fasting/unfasting a vessel)									
Other (explain)									

Table 266: Price differentiation methods for service fees

²⁴⁸ Ibid.

11.1.16 Setting of infrastructure fees

Who sets the infrastructure fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Berth fees (use of wet side of the quay – ship related)		X						
Wharfage fees (use of the dry side of the quay – cargo related)		X						
Navigation aid fees								
Idle ship laying fees (ships not loading/unloading)		X						
Truck entrance/exit		X						
Truck parking for loading/unloading at loading/unloading bay								
Truck parking for trucks not loading/unloading								
Train entrance/exit								
Train use of rail infrastructure for loading/unloading								
Train use of rail infrastructure other than for loading/unloading								
Other (explain)								

Table 267: Setting of infrastructure fees

11.1.17 Setting of service fees

Who sets the service fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Vessel loading/unloading					X			
Wagon loading/unloading					X			
Truck loading/unloading					X			
Warehousing / storage					X			
Yard handling					X			
Reception/delivery at the gates								
Other (explain)								
Sea pilotage		X						
River pilotage								
Towage (port tugs)								X
Line handling (fasting/unfasting a vessel)								X
Other (explain)								

Table 268: Setting of service fees

11.1.18 Regulatory aspects of port tariffs

Regulatory framework for tariffs in your port <i>(mark the appropriate answers with X; any comments in the comment section)</i>	Legal act needed for tariff setting	Regulated minimum (price floor)	Regulated maximum (price cap)	Determined by concession contract	Independent decision of port operator	Other (explain)
Infrastructure fees	X	X	X	X		
Cargo related service fees						
Nautical-technical service fees	X	X	X			
Other (explain)						

Table 269: Regulatory aspects of port tariffs

11.1.19 Adjustment of port tariffs

How often do you adjust the port tariffs in your port? <i>(mark the appropriate answers with X; multiple answers allowed; any comments in the comment section)</i>	Quarterly	Semesterly	Annually	Multiannual	Do you take into account inflation rates every year?	Other (explain)
Infrastructure fees			X			
Cargo related service fees						
Nautical-technical service fees			X			
Other (explain)						

Table 270: Adjustment of port tariffs

11.1.20 Depreciation of port assets

Is the asset subject to depreciation? <i>(mark the appropriate answers with X)</i>		Basis of depreciation						
		<i>(Please fill in only if the asset is subject to depreciation)</i>						
		Mark X where applicable			Period of depreciation (years)	Mark X where applicable		
		Historic or original cost	Present replacement cost	Future replacement cost		Straight line method	Compounded (sinking fund) method	Other (explain)
Navigation aids	CADASTRU							
Capital dredging								
Maintenance dredging								
Breakwaters (seaport)								
Bank protection								
Operational concrete quays								
Non-operational quays								
Steel dolphin piers								
Land								
Filling of land								
Floating cranes								
Quay cranes								
Mobile cranes								
Rubber tyred gantry cranes								
Rail mounted gantry cranes								
Reach stackers								
Forklifts								
Other								

Table 271: Depreciation of port assets

11.1.21 Methodologies for price calculation

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i> Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>
Infrastructure fees <i>(please write your own tariffs below)</i>	
Basic port tariffs (access tariff, basin tariff, key tariff, safety and security tariff during the operation of ships in port) for seagoing vessels	It is calculated according to the characteristics of the ships and the number of days of call at the port
Single tariff for the use of port infrastructure by technical / inland waterway vessels	It is calculated according to the characteristics of the ships and the number of days of call at the port
Tariffs for port services (tariff for installation of anti-pollution dam, tariff for collection of household waste, tariff for water supply, tariff for electricity supply, tariff for waste collection)	Calculated according to the quantity consumed and / or the number of days of call at the port)
Fleet pilotage rate	Calculated according to the gross tonnage of vessels for each port entry / exit / relocation maneuver
Service fees <i>(please write your own tariffs below)</i>	
Nautical-technical services <i>(please write your own tariffs below)</i>	

Table 272: Methodologies for price calculation

11.1.22 Alternative pricing methods options

Alternative options for pricing of port fees <i>(mark X where you believe that the proposed alternative pricing method is applicable, or for which type of fees you could consider any of the below alternative pricing methods)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Congestion based pricing ²⁴⁹			
Marginal cost based pricing			
Price differentiation – performance based (on time ²⁵⁰ and/or volume)	X		
Price differentiation – based on quality of service ²⁵¹			
Two-part tariffs 1 (fixed basis + variable time)			
Two-part tariffs 2 (fixed basis plus + variable amount of cargo)			
Cost based pricing (with all its variants)			
Value based pricing			
Auction based pricing – selling port slots forward ²⁵²			
(Propose yourself)			
...			
...			

Table 273: Alternative port pricing methods

²⁴⁹ Price increase when congestion degree (demand for port services) is high, decrease when it is low.

²⁵⁰ This option can maximize throughput and reduce congestion.

²⁵¹ Based on availability of specialized equipment, dedicated terminals, extended or specialized storage, proximity to production and to markets, depth of access channel, ancillary logistics services, freeport / export processing zone, etc.

²⁵² Ports may obtain better information on future demand.

11.1.23 Case study

Please respond to the following simplified case study example (in case of any data are missing, please assume them according to your experience).

Let the following hypothetical cases occur in your port:

- w) Pushed convoy with four barges, each having net tonnage (NT) of 2500 tons, each carrying 1500 tons of wheat, unloads in your port. Pusher has 2800 HP of engine power installed (1 HP = 0.7457 kW). Convoy takes no shore-side power, no water and has no waste to dispose of. Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

A single rate applies to the pusher. The tariff for pushers temporarily using port infrastructure shall apply to the total power of the ship's main engine or engines, expressed in horsepower and to the number of days the ship calls at port, regardless of where the ship is located in the port aquarium, after as follows: 1,067 EURO / 100HP-day;

Pusher rate 1 day 29.88 EURO + VAT quota.

For barge type ships carrying out loading / unloading operations, 2 tariffs apply

- Tariff for other non-propelled inland waterway vessels temporarily using the port infrastructure - applies to the ship's TC and the number of days of call in the port, regardless of where the ship is in the port aquarium, as follows: 1,067 EURO / 100TC-day ;
- Tariff for safety and security during the operation of ships in the port of Constanța - for inland cargo ships = 0.355 EURO / 100TC

Total rates for 1 barge / 1 day 35.55 EURO + VAT quota.

- x) Self-propelled barge (MCV), NT = 2800 tons, length overall L_{oa} = 92 m, loads 1200 tons of fertilizers in bulk. After loading, the vessel stays in port for 9 hours, until daylight. No other services are required from the vessel and its crew.

Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

For self-propelled barge vessels carrying out loading / unloading operations, 2 tariffs shall apply.

- Tariff for other self-propelled inland waterway vessels temporarily using the port infrastructure - applies to the ship's TC and the number of days of call in the port, regardless of where the ship is in the port aquarium, as follows: 4,268 EURO / 100TC-day .
- Tariff for safety and security during the operation of ships in the port of Constanța - for inland cargo ships = 0.355 EURO / 100TC

Total rates for self-propelled barge 129.44 EURO + VAT quota.

Notes:

Table 274: Case study

11.1.24 Comments

Comments section

(please first state for which table you are giving the comment)

Table 1:

Table 2:

Table n:

Table 275: Comments



12 Republic of Moldova

12.1 Giurgiulesti International Free Port (GIFP)

Port authority	<i>(write here if you answer the Questionnaire as port authority)</i>
Port operator	Danube Logistics SRL
Date:	23.11.2021
Contact details:	

Please read me first!

Dear Madams and Sirs,

You are viewing a complex Questionnaire on port pricing principles in the Danube Region ports (*hereinafter: Questionnaire*). Its complexity is a result of the attempt to encompass all possible diversities of port governance and operations models in nine different countries along the Danube and a large variety of port pricing models in involved inland waterway and seaports. You will probably note that the port tariffs terminology used in the Questionnaire may not fully reflect the terminology used in your country/port. This is why generic definitions are provided here and you will have an opportunity to adjust and explain a concrete situation in your country/port if it differs from a generic setup used here. Since this Questionnaire encompasses a wide variety of port pricing policies, we kindly encourage you to read it carefully and discuss and fill it together with your (transport?) economists or department in charge of tariff policies. The Questionnaire is given to you with sufficient time before the deadline, so please feel free to take your time filling it. Your best source of information for this Questionnaire is your own experience, knowledge and employees.

The objectives of this Questionnaire are the following:

- to provide an insight into the nature and mechanisms of port tariffs charged by port governing bodies (such as port authorities of whichever form), port operating companies (port/terminal operators) and providers of nautical services (mostly in seaports) such as line handling (berthing/de-berthing, a.k.a. fasting/unfasting), pilotage and towage;
- to identify who finances ports, who charges what and who pays what;
- to attempt to distinguish the nature infrastructure charges (for the use of infrastructure) and service charges (for provision of various services);
- to determine the basis and calculation methodology for each tariff;
- to determine whether the tariffs are calculated on a cost based approach (and what kind of cost), performance based approach, value based approach (i.e. demand based approach), strategic principles, (or on any other);
- to assess the level of autonomy and regulation of tariff settings;
- to determine the level of dynamics of tariffs;
- to determine the existence of regulated tariff ceiling or floor.

The authors of this Questionnaire remain at your service for any type of clarification.

Thank you.

iC consulenten & DIONYSUS Project team

12.1.1 Definitions

Definitions (for the purposes of this Questionnaire)	
Port tariffs	Common term for all types of charges, dues and fees applicable in ports.
Infrastructure fees	Charged for the use of port infrastructure such as water body, anchorage, wet side of the quay, dry side of the quay ²⁵³ , usage of rail or road infrastructure (entrance/exit/parking), vessel laying fee, aids to navigation, etc. These fees are usually charged by the port governing body (e.g. port authority), or concessionaire (depending on the type of concession) and, depending on the country, may be paid by vessel owner/operator (or by agent on their behalf), cargo owner, truck or rail operator. In case of vessel related fees, infrastructure fees are based on carrying capacity of the vessel, Gross Tonnage (GT), Net Tonnage (NT), on vessel length, time spent at berth, actual cargo quantity being loaded/unloaded, etc. Typically charged by port authority (or concessionaire) and paid by the vessel/vehicle owner or cargo owner.
Service fees	Fees charged for the provision of various services, such as loading/unloading (use of cranes and similar transshipment devices), storage, warehousing, yard handling, reception/delivery at gates, etc. Usually charged by port/terminal operator and paid usually by cargo owner (shipper/receiver).
Nautical-technical services fees	Pilotage, towage, line handling (mooring/unmooring or fastening/unfastening), shore-side electricity supply, water supply, etc. Typically charged by service provider or port authority or government (in case of pilotage), and paid by the vessel owner.
Navigation aid fees	Fees charges for the use of navigation aids (NAVAID) such as aids to navigation (AtoN), VTMIS, safety of navigation, lighthouses, navigation buoys, signals, markers, radio beacons, etc. Applicable mostly in seaports.
Economic approach (to pricing)	Based on marginal costs, taking into consideration the effects on all parties, including benefits derived by others. Marginal costs in port are extremely difficult to define, but to put it simply, they represent the change in total cost associated with the unit change in the level of activity ²⁵⁴ . However, since marginal costs are not only extremely difficult to define, they are also very difficult to estimate, this approach comes down to favouring the average cost based pricing. In other words, a cost recovery based approach.

²⁵³ In certain cases, this fee may be split in two, whereas the ship owner pays for the usage of the wet side of the quay (berth) and the cargo owner pays for the usage of the dry side of the quay (berth).

²⁵⁴ Goss, R.O., Stevens, H. (2001): Marginal Costs in Seaports, *International Journal of Maritime Economics*, Vol. 3, pp.128-138.

Definitions (for the purposes of this Questionnaire)	
Financial approach	Prices set on the basis of accounting costs, to recover fixed and variable costs and to provide an adequate rate of return and certain profit.
Public body approach	Aims to foster local development and economic activities, to maximize throughput, to maintain port services as public good in public interest; often requires subsidies (e.g. to cover at least part of the fixed infrastructure costs).
Cost based pricing	The simplest pricing principle, calculates prices (fees) based on simple cost (fixed, variable or even marginal) recovery, but <u>not including the past investments</u> . Cost based tariffs are used to achieve the marketing objective of maximizing the use of port services and the financial objective of covering the fixed and variable costs of these services.
Cost-plus based pricing	Calculates prices (fees) based on cost (fixed and variable) plus a determined profit margin.
Performance based pricing	Calculates fees based on time efficiency of usage of the service or facility (time a ship spends at berth, time a cargo spends in a base or transit storage, etc.). Promotes efficient behaviour of the users of a facility. Used to achieve the operational objective of maximizing the throughput of port facilities while limiting the level of congestion and to achieve the marketing objective of minimizing the traffic loss owing to congestion.
Value based pricing	Also known as pricing principle based on what-the-traffic-could-bear , but which can be better assessed by the value that users attach to them. Used to meet the financial objective of generating sufficient revenues to cover the ports' costs and the marketing objective of limiting the loss of traffic as a result of generating these revenues.
Strategic port pricing	Used for promotion of specific objectives, such as maximization of use of the facility, attraction of a particular type of cargo, promotion of exports of certain cargoes, etc.
Pricing based on empirical intuition, "what the others do" and past trends	Approximate method which does not necessarily take into account the cost recovery and is believed to provide sufficient contribution for the incomes of the port authority / port operator. Pricing strategy that anticipates the reaction of other ports tariffs resulting from this strategy may or may not satisfy the other previous principles.
Price differentiation	Charging different prices for the same services to different objects of charging ("customers"). For example, charging of berth fees to ships not just according to their physical characteristics, but also according to the type of vessels (e.g. higher fees for tankers, lower for Ro-Ro vessels). Another example is charging different prices of wharfage fees to cargo owners not just according to the tons loaded/unloaded but also according to the value of cargo, or volume they contract with the port operator. Similar method is used for storage fees.

12.1.2 Status of ports

Ports (as physical/infrastructure objects, not simply port companies) in your country have the status of: <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
Strategic assets of transport infrastructure, based on applicable law(s)	X
Special importance in the country's development strategies	X
Have special legal protection	X
Pure profit entities	x
Fully privatizable assets (can be sold, including the land)	
No special status	
Other (please explain) The territory at the shore of the Danube river and partially at the Prut river is leased to the general investor and operator of Giurgiulesti International Free Port (GIFP), Danube Logistics SRL, for a period of 99 years. Land plots of GIFP can be sub-leased to third parties on short- and long-term basis but cannot be sold. GIFP has a special tax regime until 2030.	X

Table 276: Status of ports

12.1.3 Financing of new investments

Who finances the new investments within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port Authority (own funds)	Port operator	Concessionaire	Rail company	Other (explain in comments)
Port infrastructure					X	X		
Internal road infrastructure					X	X		
Internal rail infrastructure					X	X		

Who finances the new investments within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port Authority (own funds)	Port operator	Concessionaire	Rail company	Other (explain in comments)
Suprastructure					X	X		
Equipment (cranes, etc.)					x	X		

Table 277: Financing of new investments

Port operator: Danube Logistics SRL, general investor and operator of GIFP. De facto the role of Danube Logistics is Port Authority and Port Operator in one. The entire port infrastructure is financed by Danube Logistics, no port or suprastructure is provided by state authorities.

Concessionaire: Third parties having residence status within GIFP (sub-leasing of land plot)

12.1.4 Financing of maintenance of existing assets

Who finances the maintenance of existing assets within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port authority (own funds)	Port operator	Concessionaire	Rail company	Other (explain in comments)
Port infrastructure					X	X		
Internal road infrastructure					X	X		
Internal rail infrastructure					X	X		
Suprastructure					X	X		
Equipment (cranes, etc.)					x	x		

Table 278: Financing of maintenance of existing assets

12.1.5 Public subsidies for ports

Do you receive any subsidies (regularly or sometimes) from the public sector? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	Yes				In the past				No
	Through investments	In cash flow	Preferential loans	Other (explain)	Through investments	In cash flow	Preferential loans	Other (explain)	

Do you receive any subsidies (including state aid, etc.)	Yes				In the past				No
For port infrastructure						x	x		
For port suprastructure						x	x		
For port equipment						x	x		
For port labour									x
For equipment (cranes, etc.)						x	x		
Other (explain ²⁵⁵)									

Table 279: Public subsidies for port

Comment:

1. In the past an affiliated company accumulated cash by a subsidy allowing for withholding of VAT which partially was used for providing loans to the port.
2. GIFP benefits from a special tax regime for a period of 25 years after the Law on GIFP was issued in 2005. Free of VAT and excise taxes. Corporate income tax reduction of 75% compared to the standard rate in the country for the first 10 years after investment, after reduction of 50% until 2030.

12.1.6 Use of revenues/incomes

If you are a public port and if you make any revenues ²⁵⁶ /incomes, how are they used? N.a., private port	
<i>(mark the appropriate answer with X, multiple answers allowed)</i>	
To cover fixed and variable costs, the rest transferred to the public (state, municipality...) budget	
To cover only variable costs, the rest transferred to the public (state, municipality...) budget	
Fully transferred to the public (state, municipality...) budget	
Used for further infrastructure investments and/or maintenance	
Used for development projects	

²⁵⁵ In the comment section.

²⁵⁶ Revenue is the total amount of income generated by the use of infrastructure or services related to the port's primary operations. Income or *net income* is a company's total revenue after all operating costs are deducted or simply *profit*.

Used for bonuses to the employees	
We make certain revenues but no net positive incomes ²⁵⁷	
Other (please explain ²⁵⁸)	

Table 280: Use of incomes and revenues

12.1.7 Objectives of port pricing and charging

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives²⁵⁹)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Efficient/optimal use of port assets		X		
Provision of public service ²⁶⁰				
Cost recovery 1 (operating & maintenance expenses only)				
Cost recovery 2 (1+depreciation)				
Cost recovery 3 (1+2+interest charges on loans)				
Cost recovery 4 (1+2+3+provisions for port development and improvement)			X	X
Cost recovery 5 (1+2+3+4+rate of return)	X	X	X	
Maximising employment				
Minimizing welfare losses				
Maximising throughput		X		
Pure profit generation (regardless of any expenses) ²⁶¹		X		

²⁵⁷ If you select this option, please explain in the comments section on the last page.

²⁵⁸ List here and explain in comments section

²⁵⁹ For example, port authority cannot have both objectives of public service provision and profit generation for infrastructure fees.

²⁶⁰ Where proper functioning of ports is seen as public service or public interest, not necessarily a profitable activity.

<p>Please identify the objectives of port pricing in your port</p> <p><i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives²⁵⁹)</i></p> <p><i>(mark only for those fees you actually charge)</i></p>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Other (explain)				

Table 281: Port pricing objectives

Cargo related service fees take into account the competitive situation of each cargo type.

12.1.8 Approach to port pricing principles

<p>What is your main approach in establishing the port pricing principles?</p> <p><i>(mark X where applicable)</i></p>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Economic approach ²⁶²	X		x
Financial approach	X	x	
Public body (public good) approach			

Table 282: Approach to port pricing principles

12.1.9 Port pricing principles

<p>On what principles do you base tariffs in your port?</p> <p><i>(mark X where applicable)</i></p>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Cost recovery base	X		
Performance base	X	X	X

²⁶¹ Usually a port operator's objective in privatized (sold, leased, concessioned) ports where no particular regard is made towards the real cost and where all income from an activity is seen as pure profit (e.g. crane use for loading/unloading).

²⁶² Please see the definitions

Value (for the user) base	X	X	
Empirical intuition and past trends based pricing		X	X

Table 283: Port pricing principles

12.1.10 Standard types of infrastructure fees

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ²⁶³	Other (explain)
Berth fees (use of wet side of the quay – ship related)			X		X		
Wharfage fees (use of the dry side of the quay – cargo related)			X			X	
Navigation aid fees			X		X		
Idle ship laying fees (ships not loading/unloading)			X			X	
Truck entrance/exit							
Truck parking for loading/unloading at loading/unloading bay							
Truck parking for trucks not loading/unloading							
Train entrance/exit				X CFM		X	
Train use of rail infrastructure for loading/unloading							
Train use of rail infrastructure other than for loading/unloading							
Other (explain)							

Table 284: Standard types of infrastructure fees

Usage of port road and railway infrastructure by clients' trucks and ordered railway wagons is covered by the service fees for cargo transshipment based on USD/ton as well as by port residents monthly payments for usage of common infrastructure based on USD/m².

²⁶³ Shipper or receiver

12.1.11 Status and unit basis for charging of infrastructure fees

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ²⁶⁴	Confidential	Negotiable	Non-negotiable ²⁶⁵	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Berth fees (use of wet side of the quay – ship related)	X				Type of vessel, DWT, incl. in fee for port dues
Wharfage fees (use of the dry side of the quay – cargo related)	X	X	X		USD/ton of cargo, included in service fee (standard tariffs are published on the webpage, in case of high volumes discounts can be negotiated, intention is to have same tariffs for different clients of same cargo)
Navigation aid fees	X				Standard fees for vessel types and standard maneuvers in USD, other USD/h, included in service fee
Idle ship laying fees (ships not loading/unloading)	X				USD/day
Truck entrance/exit					n.a.
Truck parking for loading/unloading at loading/unloading bay					n.a.
Truck parking for trucks not loading/unloading					n.a.
Train entrance/exit					n.a.
Train use of rail infrastructure for loading/unloading					n.a.
Train use of rail infrastructure other than for					n.a.

²⁶⁴ Published (in any place: black board, info board, web page, regulation, etc.)

²⁶⁵ Not „floating“ fees, meaning that their increase or decrease requires an approval/decision or change of regulation by port authority or municipal, provincial or national government

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ²⁶⁴	Confidential	Negotiable	Non-negotiable ²⁶⁵	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
loading/unloading					
Other (explain)					

Table 285: Status and unit basis for infrastructure fees

12.1.12 Standard types of service fees (cargo related & nautical-technical services)

What are the main/standard service fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if applied in your port	is service compulsory Mark X if compulsory	Charged by				Paid by			
			Port authority	Port operator	Tug operator	Government (e.g. for pilots)	Other (explain)	Ship owner	Cargo owner ²⁶⁶	Other (explain)
Vessel loading/unloading	X			X					X	
Wagon loading/unloading	X			X					X	
Truck loading/unloading	X			X					X	
Warehousing / storage	X			X					X	
Yard handling	X			X					X	
Reception/delivery at the gates										
Other (explain)										
Sea pilotage	x	X maritime vessels		X	X				X	
River pilotage										

²⁶⁶ Shipper or receiver

Towage (port tugs)	X	X maritime vessels		x				X		
Line handling (fasting/unfasting a vessel)	X			x				X		
Waste removal	X Vessels only household			x				X		
Other (explain)										

Table 286: Standard types of service fees

12.1.13 Status and unit basis for charging of service fees

What is the status of service fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ²⁶⁷	Confidential	Negotiable	Non-negotiable	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please indicate below)</i>
Vessel loading/unloading	X	X	X		USD/ton
Wagon loading/unloading			X		USD/ton
Truck loading/unloading			X		USD/ton
Warehousing / storage			X		USD/m ² per day, per month, per year
Yard handling			X		USD/ton, USD/h
Reception/delivery at the gates					
Other (explain)					
Sea pilotage	X				USD/maneuver
River pilotage					
Towage (port tugs)	X				USD/maneuver depending on vessel type and type of maneuver, USD/h
Line handling (fasting/unfasting a vessel)	X				Fixed fee USD
Waste removal					Free, for household only
Other (explain)					

Table 287: Status and unit basis for charging of service fees

²⁶⁷ Published (in any place: black board, info board, web page, regulation, etc.)

12.1.14 Price differentiation methods for infrastructure fees

What price differentiation ²⁶⁸ methods for infrastructure fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X								
Wharfage fees (use of the dry side of the quay – cargo related)		X			X	X			
Navigation aid fees	X							X	Type of maneuver
Idle ship laying fees (ships not loading/unloading)	X							X	
Truck entrance/exit									
Truck parking for loading/unloading at loading/unloading bay									
Truck parking for trucks not loading/unloading									
Train entrance/exit									
Train use of rail infrastructure for loading/unloading									
Train use of rail infrastructure other than for loading/unloading									
Other (explain)									

Table 288: Price differentiation methods for infrastructure fees

²⁶⁸ Please see the section of definitions at the beginning

12.1.15 Price differentiation methods for service fees

What price differentiation ²⁶⁹ methods for service fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Vessel loading/unloading	X								
Wagon loading/unloading		X			X	X			
Truck loading/unloading					X	X		X	
Warehousing / storage		X				X		X	
Yard handling		X				X		X	
Reception/delivery at the gates									
Other (explain)									
Sea pilotage	X							X	
River pilotage									
Towage (port tugs)	X							X	Type of maneuver
Line handling (fasting/unfasting a vessel)	X								
Other (explain)									

Table 289: Price differentiation methods for service fees

²⁶⁹ Ibid.

12.1.16 Setting of infrastructure fees

Who sets the infrastructure fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Berth fees (use of wet side of the quay – ship related)					X			
Wharfage fees (use of the dry side of the quay – cargo related)					X			
Navigation aid fees					x			
Idle ship laying fees (ships not loading/unloading)					x			
Truck entrance/exit					x			
Truck parking for loading/unloading at loading/unloading bay					X			
Truck parking for trucks not loading/unloading					X			
Train entrance/exit					x			
Train use of rail infrastructure for loading/unloading					X			
Train use of rail infrastructure other than for loading/unloading					X			
Other (explain)								

Table 290: Setting of infrastructure fees

12.1.17 Setting of service fees

Who sets the service fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Vessel loading/unloading					X			
Wagon loading/unloading					X			
Truck loading/unloading					X			
Warehousing / storage					X			
Yard handling					X			
Reception/delivery at the gates					X			
Other (explain)								
Sea pilotage					X			
River pilotage					X			
Towage (port tugs)					X			
Line handling (fasting/unfasting a vessel)					X			
Other (explain)								

Table 291: Setting of service fees

12.1.18 Regulatory aspects of port tariffs

Regulatory framework for tariffs in your port <i>(mark the appropriate answers with X; any comments in the comment section)</i>	Legal act needed for tariff setting	Regulated minimum (price floor)	Regulated maximum (price cap)	Determined by concession contract	Independent decision of port operator	Other (explain)
Infrastructure fees					X	
Cargo related service fees					x	
Nautical-technical service fees	X for certain services provided by state harbour master				x	
Other (explain)						

Table 292: Regulatory aspects of port tariffs

12.1.19 Adjustment of port tariffs

How often do you adjust the port tariffs in your port? <i>(mark the appropriate answers with X; multiple answers allowed; any comments in the comment section)</i>	Quarterly	Semesterly	Annually	Multiannual	Do you take into account inflation rates every year?	Other (explain)
Infrastructure fees				X	X only for info	
Cargo related service fees				X	X only for info	
Nautical-technical service fees				x	X only for info	
Other (explain)						

Table 293: Adjustment of port tariffs



12.1.20 Depreciation of port assets

Is the asset subject to depreciation? <i>(mark the appropriate answers with X)</i>		Basis of depreciation						
		<i>(Please fill in only if the asset is subject to depreciation)</i>						
		<i>Mark X where applicable</i>			Period of depreciation (years)	<i>Mark X where applicable</i>		
		Historic or original cost	Present replacement cost	Future replacement cost		Straight line method	Compounded (sinking fund) method	Other (explain)
Navigation aids	X	X				X		
Capital dredging	X	X				X		
Maintenance dredging								
Breakwaters (seaport)								
Bank protection	X	X				X		
Operational concrete quays	X	X				X		
Non-operational quays								
Steel dolphin piers								
Land	X		X			X		
Filling of land	X	X				X		
Floating cranes								
Quay cranes								
Mobile cranes	X	X				X		
Rubber tyred gantry cranes								
Rail mounted gantry cranes								
Reach stackers	X	X				X		
Forklifts	X	X				X		
Other								

Table 294: Depreciation of port assets

12.1.21 Methodologies for price calculation

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i>
Infrastructure fees <i>(please write your own tariffs below)</i>	Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>
Common <u>Infrastructure Maintenance</u> and Service Fee	USD/m ² per month for port residence leasing territory within GIFP including use of common infrastructure and common services. All costs for maintenance and repair of common used infrastructure are distributed to the residents according to the size of the leased area.
Port Dues	USD/call; market and profit orientation
Service fees <i>(please write your own tariffs below)</i>	
Common <u>Infrastructure Maintenance</u> and <u>Service Fee</u>	USD/m ² per month for port residence leasing territory within GIFP including use of common infrastructure and common services. All costs for providing of common services are distributed to the residents according to the size of the leased area.
Cargo transshipment fees	USD/ton differentiated by type of cargo; market and profit orientation
Cargo handling (without transshipment)	USD/ton differentiated by type of cargo and type of equipment used, market and profit orientation, min. direct costs
Equipment use	Differentiated by type of equipment, market and profit orientation, min. direct costs; USD/ton or USD/h
Nautical-technical services <i>(please write your own tariffs below)</i>	
See webpage	

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i> Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>

Table 295: Methodologies for price calculation

See tariffs on www.gifp.md.

12.1.22 Alternative pricing methods options

Alternative options for pricing of port fees <i>(mark X where you believe that the proposed alternative pricing method is applicable, or for which type of fees you could consider any of the below alternative pricing methods)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Congestion based pricing ²⁷⁰			
Marginal cost based pricing			
Price differentiation – performance based (on time ²⁷¹ and/or volume)		X	
Price differentiation – based on quality of service ²⁷²		X	
Two-part tariffs 1 (fixed basis + variable time)			X
Two-part tariffs 2 (fixed basis plus + variable amount of cargo)		X	
Cost based pricing (with all its variants)	X		
Value based pricing			X
Auction based pricing – selling port slots forward ²⁷³			
(Propose yourself)			
...			
...			

Table 296: Alternative port pricing methods

²⁷⁰ Price increase when congestion degree (demand for port services) is high, decrease when it is low.

²⁷¹ This option can maximize throughput and reduce congestion.

²⁷² Based on availability of specialized equipment, dedicated terminals, extended or specialized storage, proximity to production and to markets, depth of access channel, ancillary logistics services, freeport / export processing zone, etc.

²⁷³ Ports may obtain better information on future demand.

12.1.23 Case study

Please respond to the following simplified case study example (in case of any data are missing, please assume them according to your experience).

Let the following hypothetical cases occur in your port:

- y) Pushed convoy with four barges, each having net tonnage (NT) of 2500 tons, each carrying 1500 tons of wheat, unloads in your port. Pusher has 2800 HP of engine power installed (1 HP = 0.7457 kW). Convoy takes no shore-side power, no water and has no waste to dispose of. Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation: We use DWT instead of NT as calculation basis.

Fee for Port Dues, un/mooring and agency fee for grain barges: 2201-3200 dwt: 1040 USD x 4 = 4160 USD to be paid by ship owner. No separate wharfage for the cargo owner.

- z) Self-propelled barge (MCV), NT = 2800 tons, length overall L_{oa} = 92 m, loads 1200 tons of fertilizers in bulk. After loading, the vessel stays in port for 9 hours, until daylight. No other services are required from the vessel and its crew.

Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation: We use DWT instead of NT as calculation basis.

Fee for Port Dues, un/mooring and agency fee, here same as grain barges: 2201-3200 dwt: 1040 USD to be paid by ship owner. No separate wharfage for the cargo owner.

Notes:

Table 297: Case study



13 Ukraine

13.1 Ports of Izmail and Reni

Port authority	SE “Ukrainian Sea Ports Authority”
Port operator	(write here if you answer the Questionnaire as port operator)
Date:	
Contact details:	

Please read me first!

Dear Madams and Sirs,

You are viewing a complex Questionnaire on port pricing principles in the Danube Region ports (*hereinafter: Questionnaire*). Its complexity is a result of the attempt to encompass all possible diversities of port governance and operations models in nine different countries along the Danube and a large variety of port pricing models in involved inland waterway and seaports. You will probably note that the port tariffs terminology used in the Questionnaire may not fully reflect the terminology used in your country/port. This is why generic definitions are provided here and you will have an opportunity to adjust and explain a concrete situation in your country/port if it differs from a generic setup used here. Since this Questionnaire encompasses a wide variety of port pricing policies, we kindly encourage you to read it carefully and discuss and fill it together with your (transport?) economists or department in charge of tariff policies. The Questionnaire is given to you with sufficient time before the deadline, so please feel free to take your time filling it. Your best source of information for this Questionnaire is your own experience, knowledge and employees.

The objectives of this Questionnaire are the following:

- to provide an insight into the nature and mechanisms of port tariffs charged by port governing bodies (such as port authorities of whichever form), port operating companies (port/terminal operators) and providers of nautical services (mostly in seaports) such as line handling (berthing/de-berthing, a.k.a. fasting/unfasting), pilotage and towage;
- to identify who finances ports, who charges what and who pays what;
- to attempt to distinguish the nature infrastructure charges (for the use of infrastructure) and service charges (for provision of various services);
- to determine the basis and calculation methodology for each tariff;
- to determine whether the tariffs are calculated on a cost based approach (and what kind of cost), performance based approach, value based approach (i.e. demand based approach), strategic principles, (or on any other);
- to assess the level of autonomy and regulation of tariff settings;
- to determine the level of dynamics of tariffs;

- to determine the existence of regulated tariff ceiling or floor.

The authors of this Questionnaire remain at your service for any type of clarification.

Thank you.

iC consulenten & DIONYSUS Project team

13.1.1 Definitions

Definitions (for the purposes of this Questionnaire)	
Port tariffs	Common term for all types of charges, dues and fees applicable in ports.
Infrastructure fees	Charged for the use of port infrastructure such as water body, anchorage, wet side of the quay, dry side of the quay ²⁷⁴ , usage of rail or road infrastructure (entrance/exit/parking), vessel laying fee, aids to navigation, etc. These fees are usually charged by the port governing body (e.g. port authority), or concessionaire (depending on the type of concession) and, depending on the country, may be paid by vessel owner/operator (or by agent on their behalf), cargo owner, truck or rail operator. In case of vessel related fees, infrastructure fees are based on carrying capacity of the vessel, Gross Tonnage (GT), Net Tonnage (NT), on vessel length, time spent at berth, actual cargo quantity being loaded/unloaded, etc. Typically charged by port authority (or concessionaire) and paid by the vessel/vehicle owner or cargo owner.
Service fees	Fees charged for the provision of various services, such as loading/unloading (use of cranes and similar transshipment devices), storage, warehousing, yard handling, reception/delivery at gates, etc. Usually charged by port/terminal operator and paid usually by cargo owner (shipper/receiver).
Nautical-technical services fees	Pilotage, towage, line handling (mooring/unmooring or fastening/unfastening), shore-side electricity supply, water supply, etc. Typically charged by service provider or port authority or government (in case of pilotage), and paid by the vessel owner.
Navigation aid fees	Fees charges for the use of navigation aids (NAVAID) such as aids to navigation (AtoN), VTMISS, safety of navigation, lighthouses, navigation buoys, signals, markers, radio beacons, etc. Applicable mostly in seaports.
Economic approach (to pricing)	Based on marginal costs, taking into consideration the effects on all parties, including benefits derived by others. Marginal costs in port are extremely difficult to define, but to put it simply, they represent the change in total cost associated with the unit change in the level of activity ²⁷⁵ . However, since marginal costs are not only extremely difficult to define, they are also very difficult to estimate, this approach comes down to favouring the average cost based pricing. In other words, a cost recovery based approach.

²⁷⁴ In certain cases, this fee may be split in two, whereas the ship owner pays for the usage of the wet side of the quay (berth) and the cargo owner pays for the usage of the dry side of the quay (berth).

²⁷⁵ Goss, R.O., Stevens, H. (2001): Marginal Costs in Seaports, *International Journal of Maritime Economics*, Vol. 3, pp.128-138.

Definitions (for the purposes of this Questionnaire)	
Financial approach	Prices set on the basis of accounting costs, to recover fixed and variable costs and to provide an adequate rate of return and certain profit.
Public body approach	Aims to foster local development and economic activities, to maximize throughput, to maintain port services as public good in public interest; often requires subsidies (e.g. to cover at least part of the fixed infrastructure costs).
Cost based pricing	The simplest pricing principle, calculates prices (fees) based on simple cost (fixed, variable or even marginal) recovery, but <u>not including the past investments</u> . Cost based tariffs are used to achieve the marketing objective of maximizing the use of port services and the financial objective of covering the fixed and variable costs of these services.
Cost-plus based pricing	Calculates prices (fees) based on cost (fixed and variable) plus a determined profit margin.
Performance based pricing	Calculates fees based on time efficiency of usage of the service or facility (time a ship spends at berth, time a cargo spends in a base or transit storage, etc.). Promotes efficient behaviour of the users of a facility. Used to achieve the operational objective of maximizing the throughput of port facilities while limiting the level of congestion and to achieve the marketing objective of minimizing the traffic loss owing to congestion.
Value based pricing	Also known as pricing principle based on what-the-traffic-could-bear , but which can be better assessed by the value that users attach to them. Used to meet the financial objective of generating sufficient revenues to cover the ports' costs and the marketing objective of limiting the loss of traffic as a result of generating these revenues.
Strategic port pricing	Used for promotion of specific objectives, such as maximization of use of the facility, attraction of a particular type of cargo, promotion of exports of certain cargoes, etc.
Pricing based on empirical intuition, "what the others do" and past trends	Approximate method which does not necessarily take into account the cost recovery and is believed to provide sufficient contribution for the incomes of the port authority / port operator. Pricing strategy that anticipates the reaction of other ports tariffs resulting from this strategy may or may not satisfy the other previous principles.
Price differentiation	Charging different prices for the same services to different objects of charging ("customers"). For example, charging of berth fees to ships not just according to their physical characteristics, but also according to the type of vessels (e.g. higher fees for tankers, lower for Ro-Ro vessels). Another example is charging different prices of wharfage fees to cargo owners not just according to the tons loaded/unloaded but also according to the value of cargo, or volume they contract with the port operator. Similar method is used for storage fees.



13.1.2 Status of ports

Ports (as physical/infrastructure objects, not simply port companies) in your country have the status of: <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
Strategic assets of transport infrastructure, based on applicable law(s)	X
Special importance in the country's development strategies	X
Have special legal protection	
Pure profit entities	X
Fully privatizable assets (can be sold, including the land)	
No special status	
Other (please explain)	

Table 298: Status of ports

13.1.3 Financing of new investments

Who finances the new investments within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port Authority (own funds)	Port operator	Concessionaire	Rail company	Other (explain in comments)
Port infrastructure				X	X	X		
Internal road infrastructure				X	X	X		
Internal rail infrastructure				X	X	X		
Suprastructure				X	X	X		
Equipment (cranes, etc.)					X	X		

Table 299: Financing of new investments

13.1.4 Financing of maintenance of existing assets

Who finances the maintenance of existing assets within the port area? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	State	Province	Municipality	Port authority (own funds)	Port operator	Concessionaire	Rail company	Other <i>(explain comments)</i>
Port infrastructure				X	X	X		
Internal road infrastructure				X	X	X		
Internal rail infrastructure				X	X	X		
Suprastructure				X	X	X		
Equipment (cranes, etc.)					X	X		

Table 300: Financing of maintenance of existing assets

13.1.5 Public subsidies for ports

Do you receive any subsidies (regularly or sometimes) from the public sector? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	Yes				In the past				No
	Through investments	In cash flow	Preferential loans	Other (explain)	Through investments	In cash flow	Preferential loans	Other (explain)	
For port infrastructure									X
For port suprastructure									X
For port equipment									X
For port labour									X
For equipment (cranes, etc.)									X
Other (explain ²⁷⁶)									X

Table 301: Public subsidies for port

²⁷⁶ In the comment section.

13.1.6 Use of revenues/incomes

If you are a public port and if you make any revenues ²⁷⁷ /incomes, how are they used? <i>(mark the appropriate answer with X, multiple answers allowed)</i>	
To cover fixed and variable costs, the rest transferred to the public (state, municipality...) budget	X
To cover only variable costs, the rest transferred to the public (state, municipality...) budget	
Fully transferred to the public (state, municipality...) budget	
Used for further infrastructure investments and/or maintenance	X
Used for development projects	
Used for bonuses to the employees	
We make certain revenues but no net positive incomes ²⁷⁸	
Other (please explain ²⁷⁹)	

Table 302: Use of incomes and revenues

13.1.7 Objectives of port pricing and charging

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives²⁸⁰)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Efficient/optimal use of port assets	X	X	X	
Provision of public service ²⁸¹	X	X	X	

²⁷⁷ Revenue is the total amount of income generated by the use of infrastructure or services related to the port's primary operations. Income or *net income* is a company's total revenue after all operating costs are deducted or simply *profit*.

²⁷⁸ If you select this option, please explain in the comments section on the last page.

²⁷⁹ List here and explain in comments section

²⁸⁰ For example, port authority cannot have both objectives of public service provision and profit generation for infrastructure fees.

²⁸¹ Where proper functioning of ports is seen as public service or public interest, not necessarily a profitable activity.

Please identify the objectives of port pricing in your port <i>(mark the appropriate answer with X, multiple answers allowed, except for obviously contradictory objectives²⁸⁰)</i> <i>(mark only for those fees you actually charge)</i>	Infrastructure fees	Service fees (cargo related)	Nautical-technical services fees	Navigation aid fees
Cost recovery 1 (operating & maintenance expenses only)				
Cost recovery 2 (1+depreciation)				
Cost recovery 3 (1+2+interest charges on loans)				
Cost recovery 4 (1+2+3+provisions for port development and improvement)				
Cost recovery 5 (1+2+3+4+rate of return)	X	X	X	
Maximising employment				
Minimizing welfare losses				
Maximising throughput				
Pure profit generation (regardless of any expenses) ²⁸²				
Other (explain)				

Table 303: Port pricing objectives

13.1.8 Approach to port pricing principles

What is your main approach in establishing the port pricing principles? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Economic approach ²⁸³	X	X	X
Financial approach			
Public body (public good) approach			

²⁸² Usually a port operator's objective in privatized (sold, leased, concessioned) ports where no particular regard is made towards the real cost and where all income from an activity is seen as pure profit (e.g. crane use for loading/unloading).

²⁸³ Please see the definitions

Table 304: Approach to port pricing principles
13.1.9 Port pricing principles

On what principles do you base tariffs in your port? <i>(mark X where applicable)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Cost recovery base	X	X	X
Performance base			
Value (for the user) base			
Empirical intuition and past trends based pricing			

Table 305: Port pricing principles
13.1.10 Standard types of infrastructure fees

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ²⁸⁴	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X	X			X		
Wharfage fees (use of the dry side of the quay – cargo related)	X	X	X			X	
Navigation aid fees							
Idle ship laying fees (ships not loading/unloading)	X	X			X		
Truck entrance/exit							
Truck parking for loading/unloading at loading/unloading bay							
Truck parking for trucks not loading/unloading							

²⁸⁴ Shipper or receiver

What are the standard infrastructure fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if it is applied in your	Charged by			Paid by		
		Port authority	Port operator	Other (explain)	Ship owner	Cargo owner ²⁸⁴	Other (explain)
Train entrance/exit							
Train use of rail infrastructure for loading/unloading							
Train use of rail infrastructure other than for loading/unloading							
Other (explain)							

Table 306: Standard types of infrastructure fees

13.1.11 Status and unit basis for charging of infrastructure fees

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ²⁸⁵	Confidential	Negotiable	Non-negotiable ²⁸⁶	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Berth fees (use of wet side of the quay – ship related)	X				Example: GT and hour used
Wharfage fees (use of the dry side of the quay – cargo related)	X				
Navigation aid fees					
Idle ship laying fees (ships not loading/unloading)					
Truck entrance/exit	X				
Truck parking for loading/unloading at loading/unloading bay			X		
Truck parking for trucks not loading/unloading			X		

²⁸⁵ Published (in any place: black board, info board, web page, regulation, etc.)

²⁸⁶ Not „floating“ fees, meaning that their increase or decrease requires an approval/decision or change of regulation by port authority or municipal, provincial or national government

What is the status of infrastructure fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ²⁸⁵	Confidential	Negotiable	Non-negotiable ²⁸⁶	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please write below)</i>
Train entrance/exit			X		
Train use of rail infrastructure for loading/unloading			X		
Train use of rail infrastructure other than for loading/unloading			X		
Other (explain)					

Table 307: Status and unit basis for infrastructure fees

13.1.12 Standard types of service fees (cargo related & nautical-technical services)

What are the main/standard service fees in your port? <i>(mark the appropriate answers with X)</i>	Mark X below if applied in your port	Mark X if service is compulsory	Charged by				Paid by			
			Port authority	Port operator	Tug operator	Government (e.g. for pilots)	Other (explain)	Ship owner	Cargo owner ²⁸⁷	Other (explain)
Vessel loading/unloading				X						
Wagon loading/unloading				X						
Truck loading/unloading				X						
Warehousing / storage				X						
Yard handling				X						
Reception/delivery at the gates										
Other (explain)										
Sea pilotage										
River pilotage										
Towage (port tugs)					X		X			
Line handling (fasting/unfasting a vessel)										
Waste removal										
Other (explain)										

Table 308: Standard types of service fees

²⁸⁷ Shipper or receiver

13.1.13 Status and unit basis for charging of service fees

What is the status of service fees (identified above) in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Publicly available ²⁸⁸	Confidential	Negotiable	Non-negotiable	Charged on the basis of GT, NT, DWT, ton of cargo loaded/unloaded, ship length, time used, engine kW... <i>(please indicate below)</i>
Vessel loading/unloading			X		
Wagon loading/unloading			X		
Truck loading/unloading			X		
Warehousing / storage			X		
Yard handling			X		
Reception/delivery at the gates			X		
Other (explain)					
Sea pilotage					
River pilotage					
Towage (port tugs)			X		
Line handling (fasting/unfasting a vessel)					
Waste removal					
Other (explain)					

Table 309: Status and unit basis for charging of service fees

²⁸⁸ Published (in any place: black board, info board, web page, regulation, etc.)

13.1.14 Price differentiation methods for infrastructure fees

What price differentiation ²⁸⁹ methods for infrastructure fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X								X Type of navigation
Wharfage fees (use of the dry side of the quay – cargo related)									
Navigation aid fees									
Idle ship laying fees (ships not loading/unloading)									X Type of navigation
Truck entrance/exit									
Truck parking for loading/unloading at loading/unloading bay									
Truck parking for trucks not loading/unloading									
Train entrance/exit									
Train use of rail infrastructure for loading/unloading									
Train use of rail infrastructure other than for loading/unloading									
Other (explain)									

Table 310: Price differentiation methods for infrastructure fees

²⁸⁹ Please see the section of definitions at the beginning

13.1.15 Price differentiation methods for service fees

What price differentiation ²⁹⁰ methods for service fees do you use in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Type of vessel	Type of cargo	Value of cargo	Trade direction (export/import)	Direct/indirect transshipment	Quantity of cargo (volume rebates)	Number of port calls/year	Time used/spent	Other (explain)
Vessel loading/unloading									
Wagon loading/unloading									
Truck loading/unloading									
Warehousing / storage									
Yard handling									
Reception/delivery at the gates									
Other (explain)									
Sea pilotage									
River pilotage									
Towage (port tugs)									
Line handling (fasting/unfasting a vessel)									
Other (explain)									

Table 311: Price differentiation methods for service fees

²⁹⁰ Ibid.

13.1.16 Setting of infrastructure fees

Who sets the infrastructure fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Berth fees (use of wet side of the quay – ship related)	X							
Wharfage fees (use of the dry side of the quay – cargo related)	X				X			
Navigation aid fees								
Idle ship laying fees (ships not loading/unloading)	X							
Truck entrance/exit								
Truck parking for loading/unloading at loading/unloading bay								
Truck parking for trucks not loading/unloading								
Train entrance/exit								
Train use of rail infrastructure for loading/unloading								
Train use of rail infrastructure other than for loading/unloading								
Other (explain)								

Table 312: Setting of infrastructure fees

13.1.17 Setting of service fees

Who sets the service fees in your port? <i>(mark the appropriate answers with X, only for those fees that are applicable in your port; any comments in the comment section)</i>	Government (state, region, municipality)	Port authority (with govern. approval)	Port authority (with own autonomy)	Concessionaire	Port operator	Association of ports	In cooperation with port users	Other (explain)
Vessel loading/unloading					X			
Wagon loading/unloading					X			
Truck loading/unloading					X			
Warehousing / storage					X			
Yard handling					X			
Reception/delivery at the gates								
Other (explain)								
Sea pilotage								
River pilotage								
Towage (port tugs)								X Towing company
Line handling (fasting/unfasting a vessel)								
Other (explain)								

Table 313: Setting of service fees

13.1.18 Regulatory aspects of port tariffs

Regulatory framework for tariffs in your port <i>(mark the appropriate answers with X; any comments in the comment section)</i>	Legal act needed for tariff setting	Regulated minimum (price floor)	Regulated maximum (price cap)	Determined by concession contract	Independent decision of port operator	Other (explain)
Infrastructure fees	X	X				
Cargo related service fees					X	
Nautical-technical service fees						X at free prices
Other (explain)						

Table 314: Regulatory aspects of port tariffs

13.1.19 Adjustment of port tariffs

How often do you adjust the port tariffs in your port? <i>(mark the appropriate answers with X; multiple answers allowed; any comments in the comment section)</i>	Quarterly	Semesterly	Annually	Multiannual	Do you take into account inflation rates every year?	Other (explain)
Infrastructure fees				X		
Cargo related service fees				X		X (портовый оператор)
Nautical-technical service fees						
Other (explain)						

Table 315: Adjustment of port tariffs

13.1.20 Depreciation of port assets

Is the asset subject to depreciation? (mark the appropriate answers with X)	Basis of depreciation							
	(Please fill in only if the asset is subject to depreciation)							
	Mark X where applicable			Period of depreciation (years)	Mark X where applicable			
	Historic or original cost	Present replacement cost	Future replacement cost		Straight line method	Compounded (sinking fund) method	Other (explain)	
Navigation aids								
Capital dredging								
Maintenance dredging								
Breakwaters (seaport)			X					
Bank protection			X					
Operational concrete quays			X					
Non-operational quays			X					
Steel dolphin piers			X					
Land								
Filling of land								
Floating cranes								
Quay cranes								
Mobile cranes								
Rubber tyred gantry cranes								
Rail mounted gantry cranes								
Reach stackers								
Forklifts								
Other								

Table 316: Depreciation of port assets

13.1.21 Methodologies for price calculation

Type of port tariffs	Methodology used to determine the value <i>(only for those tariffs that are public)</i> Mathematical modelling, econometrics, financial engineering, empirical methods, empiric estimation (based on what?), other (explain). <i>Please provide a formula and/or an explanation for each tariff</i>
Infrastructure fees <i>(please write your own tariffs below)</i>	
Port dues	See The order of collection and the rates of port dues, approved by the order of the Ministry of Infrastructure from 27.05.2013 N° 316
Services to ensure access of the port operator to the berth	See Tariffs for services to ensure access of the port operator to the berth, which is managed by the administration of seaports of Ukraine approved by the order of the Ministry of Infrastructure of 18.12.2015 N° 541
Service fees <i>(please write your own tariffs below)</i>	
Nautical-technical services <i>(please write your own tariffs below)</i>	

Table 317: Methodologies for price calculation

13.1.22 Alternative pricing methods options

Alternative options for pricing of port fees <i>(mark X where you believe that the proposed alternative pricing method is applicable, or for which type of fees you could consider any of the below alternative pricing methods)</i>	Infrastructure fees	Service fees (cargo)	Nautical-technical services
Congestion based pricing ²⁹¹			
Marginal cost based pricing			
Price differentiation – performance based (on time ²⁹² and/or volume)			
Price differentiation – based on quality of service ²⁹³			
Two-part tariffs 1 (fixed basis + variable time)			
Two-part tariffs 2 (fixed basis plus + variable amount of cargo)			
Cost based pricing (with all its variants)			
Value based pricing			
Auction based pricing – selling port slots forward ²⁹⁴			
(Propose yourself)			
...			
...			

Table 318: Alternative port pricing methods

²⁹¹ Price increase when congestion degree (demand for port services) is high, decrease when it is low.

²⁹² This option can maximize throughput and reduce congestion.

²⁹³ Based on availability of specialized equipment, dedicated terminals, extended or specialized storage, proximity to production and to markets, depth of access channel, ancillary logistics services, freeport / export processing zone, etc.

²⁹⁴ Ports may obtain better information on future demand.

13.1.23 Case study

Please respond to the following simplified case study example (in case of any data are missing, please assume them according to your experience).

Let the following hypothetical cases occur in your port:

- aa) Pushed convoy with four barges, each having net tonnage (NT) of 2500 tons, each carrying 1500 tons of wheat, unloads in your port. Pusher has 2800 HP of engine power installed (1 HP = 0.7457 kW). Convoy takes no shore-side power, no water and has no waste to dispose of. Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

a) A convoy of four barges, each with a net tonnage (NT) of 2,500 tons, each carrying 1,500 tons of wheat, is unloaded at your port. The pusher has 2800 hp. engine power (1 hp = 0.7457 kW). The convoy does not take energy on shore, water and has no garbage for disposal. Calculate the cost of entering the port for the shipowner and the berth for the cargo owner (shipper / consignee).

- bb) Self-propelled barge (MCV), NT = 2800 tons, length overall $L_{oa} = 92$ m, loads 1200 tons of fertilizers in bulk. After loading, the vessel stays in port for 9 hours, until daylight. No other services are required from the vessel and its crew.

Calculate the port call costs for the ship owner and the wharfage for the cargo owner (shipper/receiver).

Calculation:

Self-propelled barge (MCV), NT = 2800 tons, total length $L_{oa} = 92$ m, loads 1200 tons of fertilizer in bulk. After loading, the vessel remains in port for 9 hours until daylight. No other services are required from the vessel and its crew.

Calculate the cost of entering the port for the shipowner and the berth for the cargo owner (shipper / consignee).



Notes:

Table 319: Case study



13.1.24 Comments

Comments section

(please first state for which table you are giving the comment)

Table 1:

Table 2:

Table n:

Table 320: Comments



