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COMMISSION STAFF WORKING DOCUMENT

IMPACT ASSESSMENT

Accompanying the document

Proposal for a Directive of the European Parliament and of the Council

on the recognition of professional qualifications in inland navigation and repealing Council Directive 91/672/EEC and Council Directive 96/50/EC

{COM(2016) 82 final}
{SWD(2016) 36 final}

LIST OF ANNEXES

Annex 1:

Online public consultation: summary of the stakeholders' view

INTRODUCTION

In the context of the impact assessment accompanying a potential legislative proposal on the recognition and modernisation of professional qualifications in inland navigation, the Commission services have conducted an online public stakeholder consultation. The goal of the potential initiative is the removal of barriers between EU Member States for exercising professions in the field of inland navigation, thus subscribing to the main goal of the European Commission's common transport policy of the free movement of persons and goods across the EU. The harmonisation of national legal and administrative regulations is of high importance for creating fair conditions for competition within and between the different transport modes[1]. The aim of this public online consultation was to collect the stakeholders' views in order to have their opinion on the identified problems and policy objectives and to assess their support to the proposed policy measures.

The public consultation was open for 13 weeks (26/03/2013 to 21/06/2013), and it contained a total of 90 questions, both quantitative and qualitative. The Commission services received a total of 94 replies. This note follows the structure of the consultation document and provides a summary of the nature of responses of different stakeholders. It is important to note that the sample of respondents is not statistically representative, and thus results should be interpreted with caution.

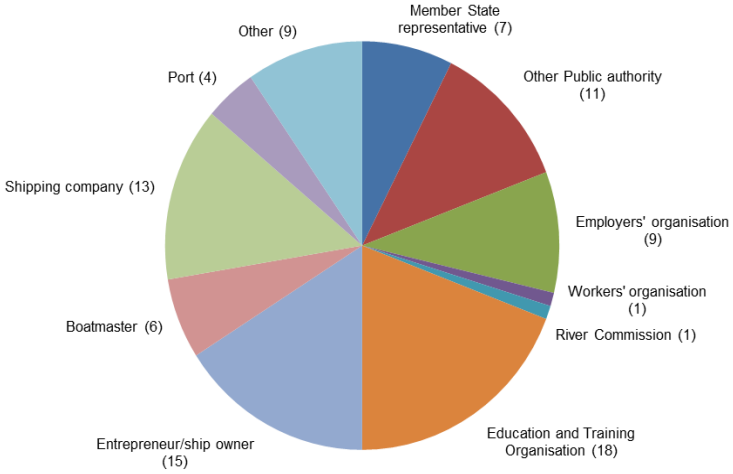
1. IDENTIFICATION OF THE RESPONDENTS

1.1 Overall breakdown of consultation respondents by stakeholder type

The Commission services received a total of 94 contributions. 10 stakeholder groups (divided by organisation type)[2] were represented among the respondents. Education and training organisations were the largest participating group, with 18 responses, followed by entrepreneurs/ship owners (15) and shipping companies (13). Public authorities account for a total of 17 responses, divided between Member State representatives (7) and other public authorities (10). The other categories had relatively few respondents (see graph below).
The graphs accompanying each section of this report indicate the proportions of each category of respondents that gave a certain answer. Given the low number of responses received from workers' organisations (1), river commissions (1)[3] and ports (4), these categories will not be included in the graphs throughout the report, but will be qualitatively assessed and referred to in the text when appropriate.

[1] See the background document for more information.
[2] Please note that opinions expressed do not always represent the position of an organisation (e.g. training institute), but sometimes only the view of the person who responded to the public consultation. For the purpose of data analysis, these contributions have nevertheless been considered as opinions expressed by a member of the stakeholder's group to which the organisation they work for belongs.
[3] The river commission participating in the public consultation was the Danube Commission.

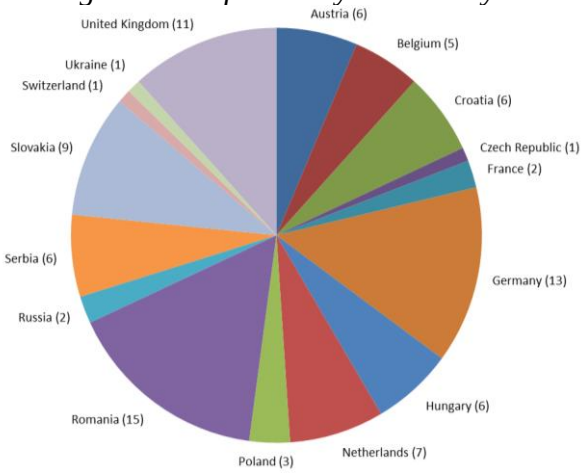
Figure 1. Consultation respondents by stakeholder type



1.2 Overall summary of responses by nationality

The responses came from a total of 16 countries. Romania (15), Germany (13), the United Kingdom (11) and Slovakia (9) account for the largest number of respondents, followed by the Netherlands (7), Hungary (6), Austria (6), Croatia (6) and Belgium (5).

Figure 2. Responses by nationality



1.3. Specific geographical range(s) for which stakeholders have experience

Figure 3 presents the geographical ranges for which the respondents to the public consultation have experience. The information provided reflects that a lot of respondents have experience in multiple river basins. 47 stakeholders have experience in the Danube and Sava Basin, 38 have it for the Rhine basin and 30 for the Moselle Basin.

Figure 3. Respondents by geographical range of experience

Category	Number
Rhine Basin	38
Moselle Basin	30

Danube and Sava Basin	47
Scheld and Meuse Basin	15
Elbe Basin	12
Other French waterways	6
Other German waterways	21
Other Dutch waterways	16
Oder Basin	7
Inland waterways of maritime character	28
Others	19
Total	**239**

2. Problems to be addressed

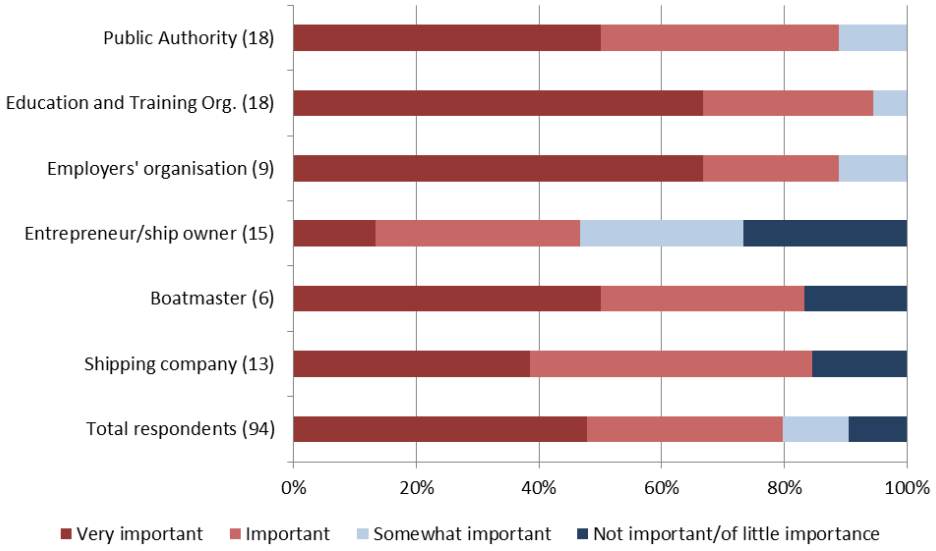
In this section of the public consultation, the European Commission sought to understand to which extent stakeholders agree with the existence of the pre-identified problems regarding the recognition of professional qualifications and training standards in inland navigation and to identify other problems that would need to be taken into account.

2.1. Is the problem of restricted labour mobility relevant?

Almost 80% of all respondents rated the problem of restricted labour mobility derived from the differences between countries in professional qualifications and training standards in inland navigation as "important" or "very important". Education and training organisations are the group that rates it as most important (95%), followed by public authorities and employers' organisations (around 89% each). Entrepreneurs/ship owners present a more dispersed distribution of responses, with almost 50% of the respondents considering the labour mobility restrictions as "very important" or "important".

Figure 4. Relevance of the problem of restricted labour mobility by stakeholder type[4]

[4] This graph shows the distribution of answers given by each category of stakeholder, allowing the reader to compare the answers provided by different groups of stakeholders. At the same time, the vertical axis presents the number of respondents in each category (e.g. 18 public authorities). The last category of the graph (i.e. "total respondents") includes the ones presented in the categories above, and also the answers of four ports, one river commission, a workers 'organisation and nine responses classified as "others". This type of graph will be used throughout the report.

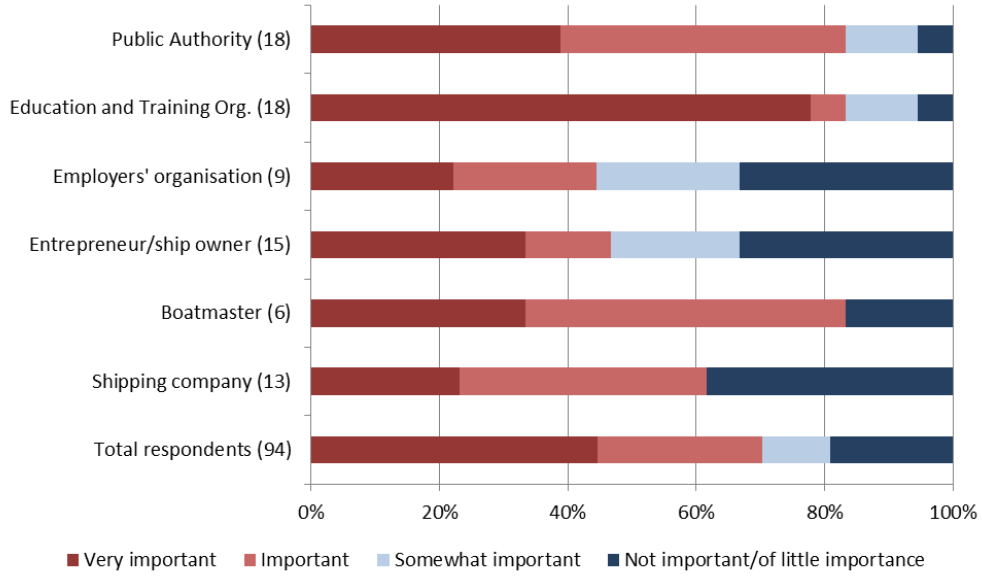


The river commission and the worker's organisation that contributed to the public consultation rated this problem as highly important. The four ports provided responses that range from "somewhat important" to "very important".

2.2. Is the problem of safety relevant?

Around 70% of all respondents consider that safety problems derived from the differences between countries in professional qualifications and training standards in inland navigation are "important" or "very important". Nevertheless, responses vary by group of stakeholder: whereas 83% of public authorities, boatmasters and education and training organisations consider this problem as "very important" or "important", the percentage is of around 45% for entrepreneurs/ship owners and employers' organisations. Despite this, it is important to note that more than 60% of respondents of each group of stakeholders consider this problem at least "somewhat important".

Figure 5. Relevance of the problem of safety by stakeholder type



3. Problem drivers

3.1. Problem of Restricted Labour Mobility: Overall perception of relevance of different problem drivers

This section presents the overall perception of the relative importance of different drivers to the problem of restricted labour mobility. It is important to note that these are the aggregated responses of all stakeholders. Disaggregation by type of stakeholder is found in the following section 3.2.

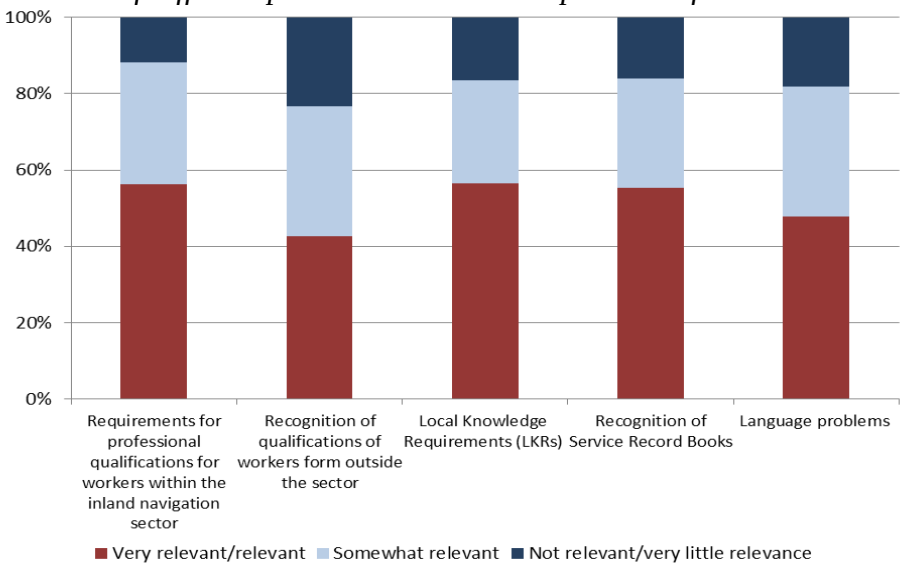
As shown in *Figure 6*, difficulties due to different requirements for professional qualifications of workers within the inland navigation sector (56%) and the difficulties with the recognition by national authorities of service record books (SRBs) or of the information contained in the SRBs (55%) are in relative terms considered the aspects contributing the most to the problem of restricted labour mobility. Around 50% of all respondents find that local knowledge requirements (LKRs) preventing boatmasters to operate on a certain stretch (51%) and language problems preventing crew members of different nationalities to perform duties on vessels sailing on the EU inland waters (48%) are "relevant" or "very relevant" problem drivers. Finally, difficulties with the recognition of relevant professional qualifications of workers from outside the sector are considered as the least important problem driver in relative terms (43% rating it "very relevant" or "relevant").

The stakeholders were asked to assess the **current system of mutual recognition of Service Record Books operated through multilateral agreements between the CCNR and a number of non-Rhine EU Member States**. 40% of the respondents stated that this system serves its purpose only partially, 21% consider that it does not serve its purpose and only 13% of them consider that it serves its purpose fully.

When asked whether the **current system of mutual recognition of boatmasters certificates** adequately addresses the labour mobility barriers for boatmasters from the Non-Rhine EU Member States on the Rhine, 45% of the respondents say that mobility

barriers are only partially addressed, 26% think that they are not adequately addressed, and only 12% consider that they are fully addressed through this system.

Figure 6. Relevance of different problem drivers to the problem of restricted labour mobility

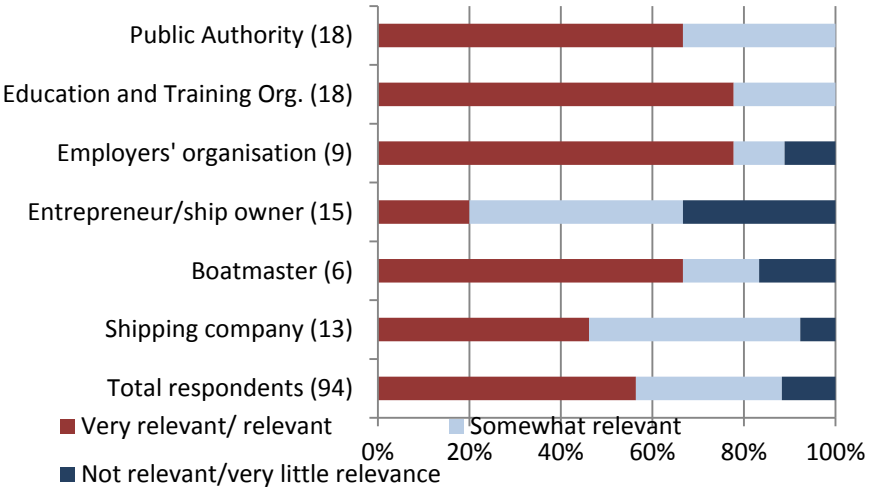


3.2. Relevance of different problem drivers by type of stakeholder

3.2.1. Problem driver 1: Difficulties due to different requirements for professional qualifications of workers within the inland navigation sector (requirements for experience, exam programmes, physical and mental fitness)

Around 78% of education and training organisations and employers' organisations that responded to the public consultation consider this problem driver as highly relevant, followed by around 67% of boatmasters and public authorities, and 46% of shipping companies. Most entrepreneurs/ship owners rated it as "somewhat relevant" (47%).

Figure 7. Relevance of problem driver 1 (different requirements for professional qualifications) by type of stakeholder

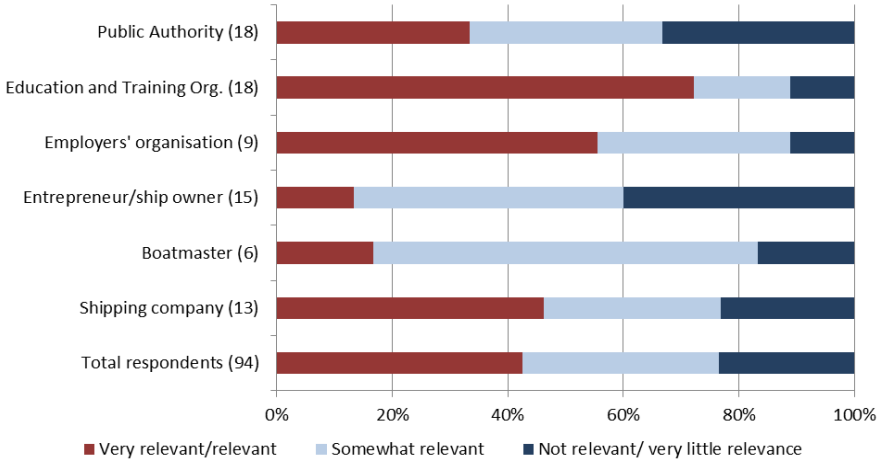


Additionally, the river commission and the worker's organisation that contributed to the public consultation rated this problem driver as highly relevant, whereas three out of four ports rated it as "somewhat important". It is important to note that only 11% of the total number of respondents finds this problem driver as "not relevant" or of "little relevance".

3.2.2. Problem driver 2: Difficulties with recognition of relevant professional qualifications of workers from outside the sector (such as the maritime or fishing sector)

The distribution of responses with regard to the second problem driver differs substantially by group of stakeholder. An important percentage of education and training organisations (72%) and employers' organisations (56%) consider it a highly relevant problem, followed by shipping companies (46%). All the other groups consider it mainly "somewhat relevant", in particular boatmasters (67%). Around 67% of public authorities and 60% entrepreneurs/ship owners consider it at least "somewhat relevant".

Figure 8. Relevance of problem driver 2 (recognition of qualifications of workers from outside the sector) by type of stakeholder



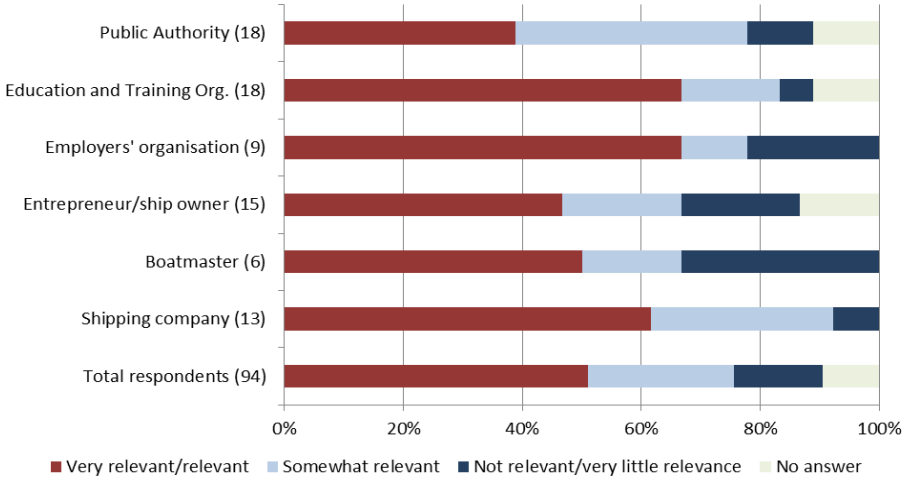
The river commission and the worker's organisation that contributed to the public consultation rated this problem driver as highly relevant, whereas three out of four ports rated it as "somewhat important".

3.2.3. Problem driver 3: Local Knowledge Requirements (LKRs) may prevent boatmasters to operate on a certain stretch (relevant for boatmasters only)

Perceptions of the relevance of this problem driver vary between types of stakeholders, as shown in *Figure 9*. Education and training organisations and employers' organisations are the groups that consider it more important, with 67% of their respondents rating it as highly relevant, followed by shipping companies (62%). At the same time, entrepreneurs/ship owners and boatmasters are the groups of stakeholders that perceive this problem driver as less relevant, in relative terms, with 67% of their respondents rating it as highly important or somewhat important. With regards to public authorities, it should be noted that despite presenting a relatively low percentage of "highly relevant" responses, only 11% of them consider the issues with LKRs of no relevance. Additionally, the river commission and the

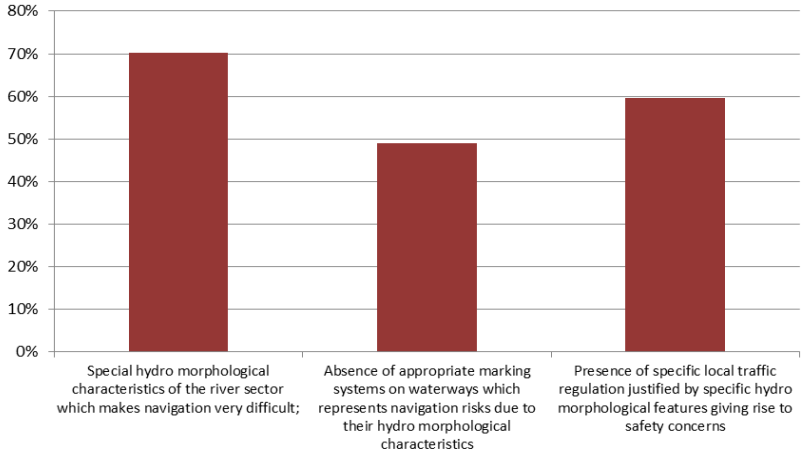
worker's organisation that contributed to the public consultation consider this problem driver as highly relevant.

Figure 9. Relevance of problem driver 3 (Local Knowledge Requirements) by type of stakeholder



The public consultation also asked the stakeholders about the justification of local knowledge requirements. As shown in *Figure 10*, 70% of the respondents consider that LKRs are justified when there are some special hydro morphological characteristics of the river sector which make navigation very difficult; 60% of them consider they are justified when there are specific local traffic regulations in place due to safety concerns, and 49% of them refer to the absence of appropriate marking systems.

Figure 10. Criteria for the establishment of Local Knowledge Requirements[5]



[5] This graph shows the percentage of stakeholders that consider each of these criteria relevant for the establishment of LKRs. It has to be taken into account that more than one response was allowed.

When asked about whether the LKRs which are currently in force in Member States are justified in view of the criteria referred to above (hydro morphological characteristics, absence of marking systems, local traffic regulations), the responses provided were the following:

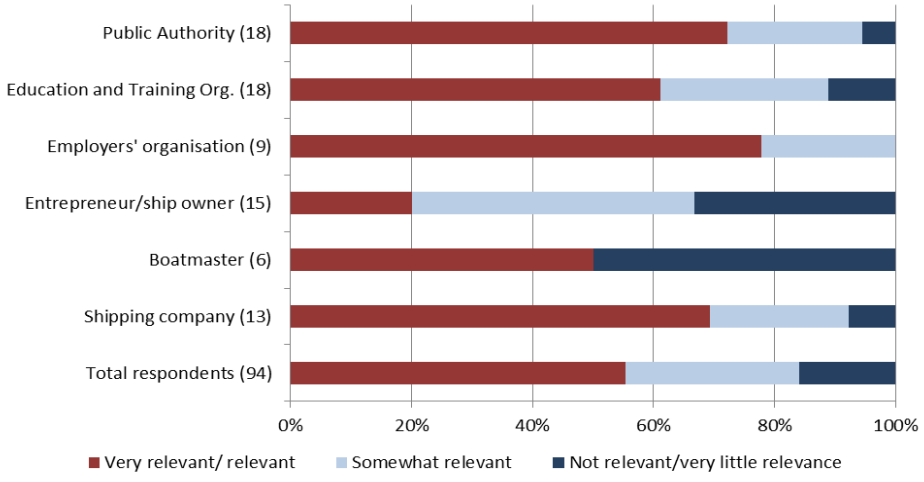
Figure 11. Justification of the currently enforced LKRs[6]

Answer	Number
The currently enforced LKRs are **fully justified** in view of the criteria mentioned	38
The currently enforced LKRs are **partially justified** in view of the criteria mentioned	30
The currently enforced LKRs are **not justified** in view of the criteria mentioned	47
Don't Know	15
Total	**94**

3.2.4. Problem driver 4: Difficulties with the recognition by national authorities in the Member States of Service Record Books (SRBs) or of the information contained in the SRBs

The difficulties with the recognition of SRBs are considered by 78% of employers' organisations responding to the public consultation as "relevant" or "very relevant" drivers to the problem of restricted labour mobility. A slightly lower percentage is registered for public authorities and shipping companies (around 70% in each case). Entrepreneurs/ship owners are the group of stakeholders that registers a lower percentage of "highly relevant" responses (20%). Despite this, it is important to note that 67% of them consider it either "somewhat relevant" or "highly relevant". Boatmasters present a divided position: half of the respondents consider it very relevant, whereas the other half consider it of little relevance.

Figure 12. Relevance of problem driver 4 (recognition of Service Record Books) by type of stakeholder



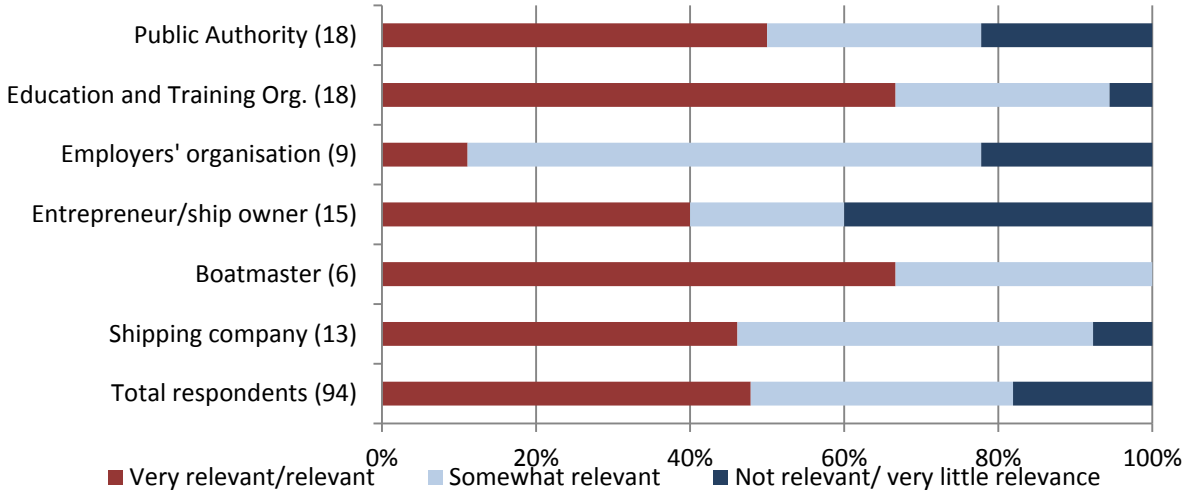
[6] This graph shows the number of stakeholders that gave each response.

The river commission and the worker's organisation that contributed to the public consultation rated this problem driver as "very relevant" or "relevant", whereas three out of four ports rated it as "somewhat relevant".

3.2.5. Problem driver 5: Language problems prevent crew members of a different nationality to perform duties on vessels sailing on the EU inland waterways

Language problems are considered a relevant barrier to labour mobility in inland navigation by education and training organisations and by boatmasters (67% each), while it is considered as "somewhat relevant" by most employers' organisations responding to the consultation (67%). Public authorities, shipping companies and entrepreneurs/ship owners have an intermediate position, with around 40-50% of them rating language problems as highly relevant.

Figure 13. Relevance of problem driver 5 (language problems) by type of stakeholder



Furthermore, the river commission and the worker's organisation that contributed to the public consultation rated this problem driver as highly relevant, whereas the ports present a more dispersed opinion. In total, 80% of the respondents consider language problems as somewhat relevant to very relevant with regard to labour mobility issues.

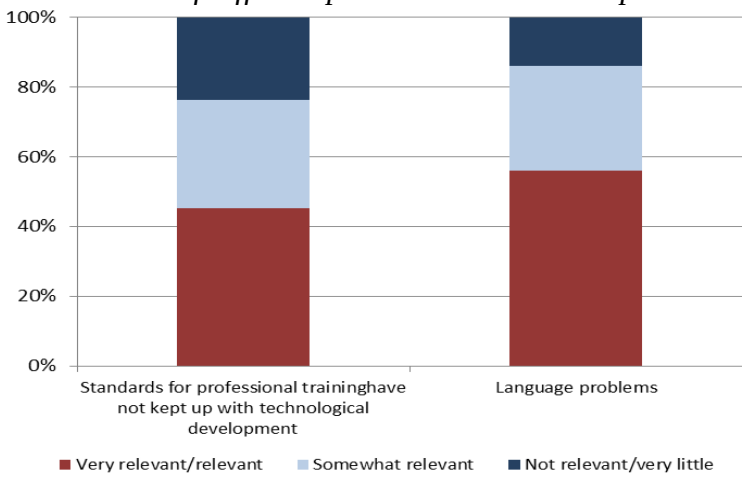
3.3. Safety problem: Overall perception of relevance of different problem drivers

This section presents the overall perception of all stakeholders of the relative importance of different problem drivers to the problem of safety. In order to do this, the responses "relevant" and "very relevant" were aggregated. Responses by type of stakeholder are found in the following section 3.4.

As shown in *Figure 14*, language problems caused by crew members of different nationalities resulting in communication problems is, in relative terms, considered the aspect contributing the most to the problem of safety (85% of the respondents considering it either highly relevant

or somewhat relevant). Around 76% of all respondents find that the standards for professional training in inland navigation which are set at national level have not kept up with technological development, making it a highly relevant or somewhat relevant problem driver.

Figure 14. Relevance of different problem drivers to the problem of safety

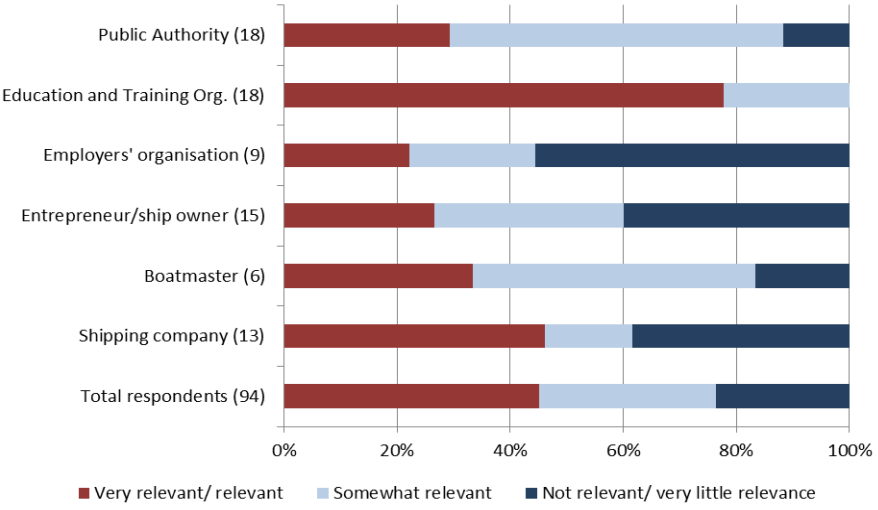


3.4. Relevance of problem drivers by type of stakeholder

3.4.1. Problem driver 1: The standards for professional training in inland navigation which are set at national level have not kept up with technological development

The importance of this problem driver is perceived by the different groups of stakeholders as relatively lower with respect to others, with the exception of education and training organisations, with 78% of its respondents rating it as "relevant" or "very relevant". Despite this, more than 60% of the respondents of each group of stakeholders consider it, at least, "somewhat important", reaching 83% in the case of public authorities and boatmasters. Employers' organisations and entrepreneurs/ship owners are the groups that consider it less important, in relative terms.

Figure 15. Relevance of problem driver 1 (standards for professional training have not kept up with technological development) by type of stakeholder

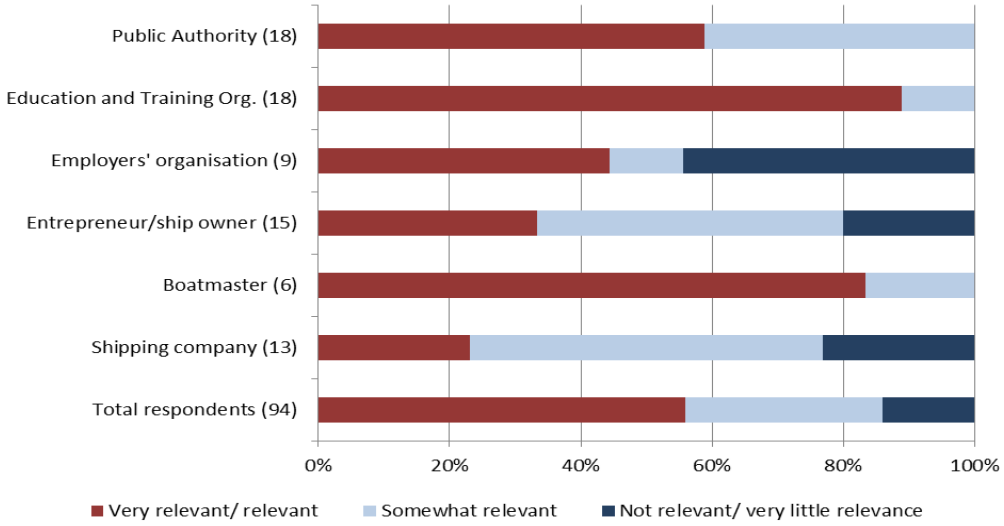


The river commission and the worker's organisation that contributed to the public consultation rated this problem driver as highly relevant, whereas the responses of the four ports range from "somewhat relevant" to "very relevant". In total, 75% of the respondents consider language problems as somewhat relevant to very relevant with regard to safety issues.

3.4.2. Problem driver 2: Language problems caused by crew members of different nationalities, resulting in communication problems

The perception of the importance of language problems for safety differs between groups of stakeholders. Whereas education and training organisations and boatmasters rate it as highly relevant (89% and 83% respectively), shipping companies and entrepreneurs/ship owners find it relatively less relevant. Despite this, almost 80% of both groups consider it either highly relevant or somewhat relevant. As shown in *Figure 16*, the opinion of employers' organisations is the most polarized.

Figure 16. Relevance of problem driver 2 (language problems) by type of stakeholder



The river commission and the worker's organisation that contributed to the public consultation rated this problem driver as highly relevant.

4. Assessment of policy objectives

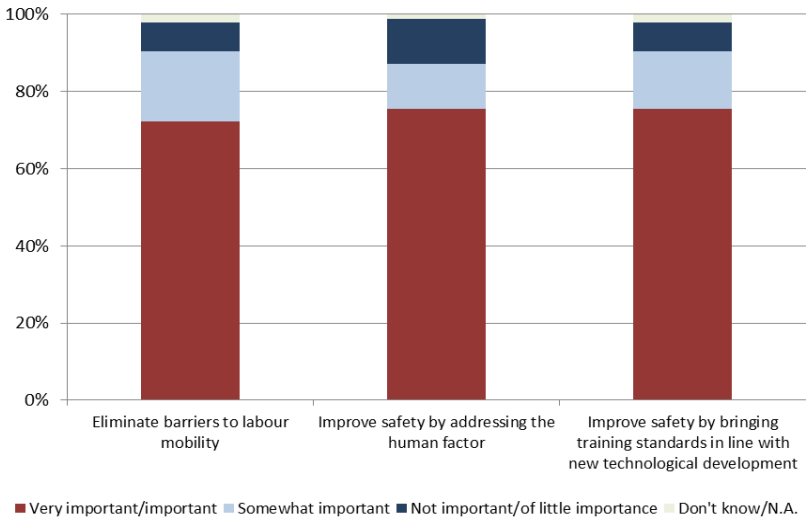
In this section of the public consultation, the Commission sought to identify the degree to which Member States and stakeholders agree with the proposed objectives of the future initiative.

4.1. Overall perception of relevance of different policy objectives

This section presents the overall perception of all stakeholders of the relative importance of different policy objectives of the future initiative regarding the recognition and modernisation of professional qualifications in inland navigation. Responses by type of stakeholder are found in section 4.2. As shown in *Figure 17*, the three policy objectives (eliminate barriers to

labour mobility and improve safety both by addressing the human factor and by bringing training standards in line with new technological development) are considered equally relevant, with around 75% of respondents considering them "very important" or "important". Overall, less than 10% of respondents consider the different policy objectives as not important.

Figure 17. Relevance of different policy objectives

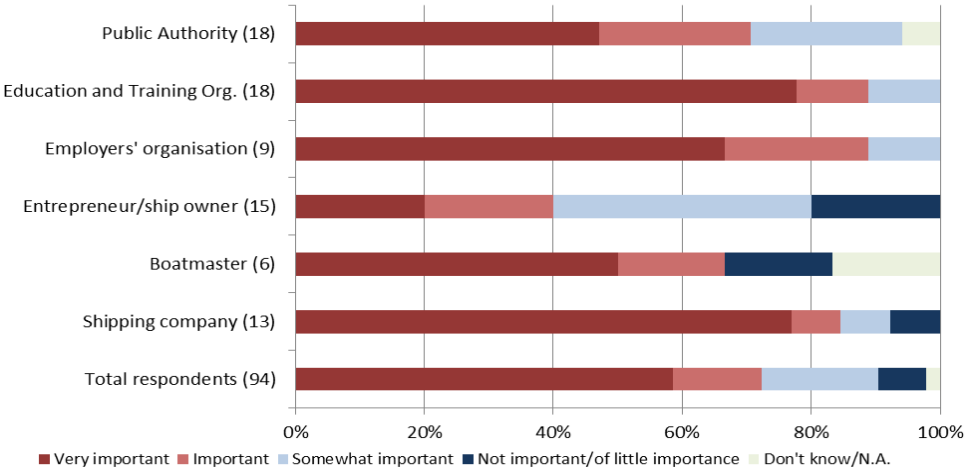


4.2. Relevance of policy objectives by type of stakeholder

4.2.1. Policy objective 1: Eliminate barriers to labour mobility

An important percentage of education and training organisations (89%), employers' organisations (89%), shipping companies (84%), public authorities (71%) and boatmasters (67%) consider this policy objective as "very important" or "important". Entrepreneurs/ship owners present a more dispersed opinion, with 40% of them considering it "somewhat important" and 20% of them stating that it is not an important objective.

Figure 18. Relevance of policy objective 1 by type of stakeholder

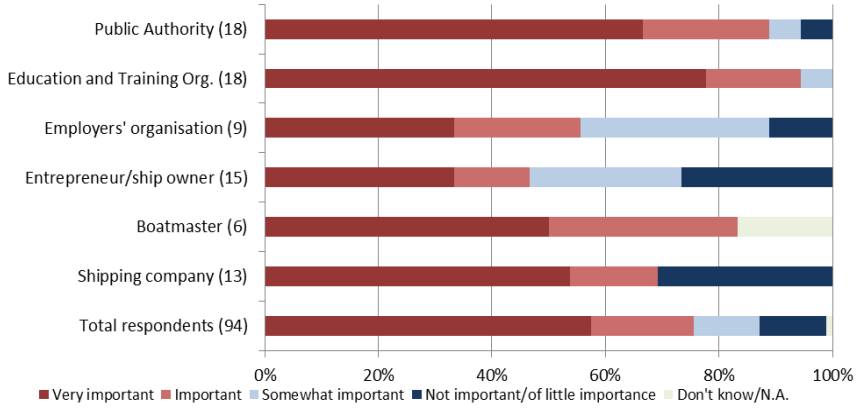


The river commission and the worker's organisation that contributed to the public consultation rated this policy objective as "very important", whereas the responses of the four ports range from "somewhat important" to "very important". As shown in *Figure 18*, the overall support to this policy objective is very high, with only 7% of total respondents considering it not important.

4.2.2. Policy objective 2: Improve safety in the IWT sector by addressing the human factor

With regards to policy objective 2, responses differ considerably between groups of stakeholders. Education and training organisations and public authorities consider that addressing the human factor to improve safety is a highly important objective (with 94% and 89% of them, respectively, stating that it is "very important" or "important"). The groups that in relative terms consider this objective as less important are entrepreneurs/ship owners and employers' organisations.

Figure 19. Relevance of policy objective 2 by type of stakeholder

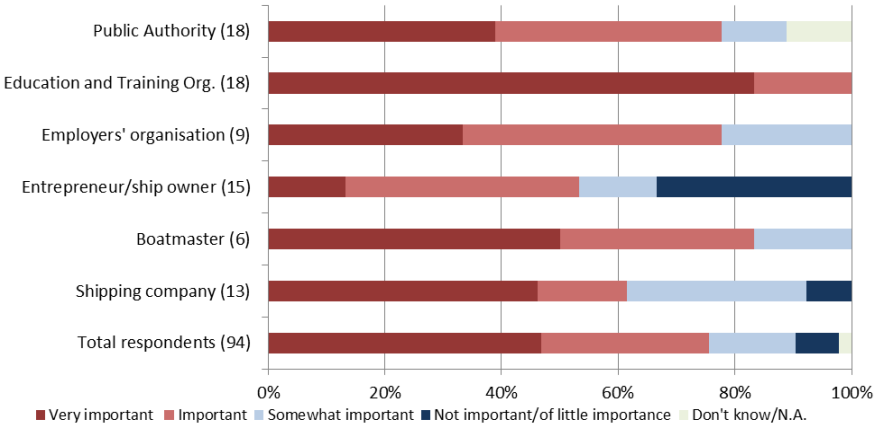


The river commission and the worker's organisation that contributed to the public consultation rated this policy objective as very important, whereas the responses of the four ports range from "somewhat important" to "very important".

4.2.3. Policy objective 3: Improve safety in the IWT sector by bringing training standards in line with new technological development

As shown in *Figure 20*, the support to this policy objective is high in almost all groups of stakeholders, with only 7% of total respondents considering it not important. All education and training organisations participating in the public consultation consider it either "very important" or "important", whereas the percentages are of 83% in the case of boatmasters and of 78% in the case of public authorities and employers' organisations. Moreover, more than 50% of entrepreneurs/ship owners and shipping companies find it highly relevant, a percentage that increases notably if responses "somewhat relevant" are also aggregated.

Figure 20. Relevance of policy objective 3 by type of stakeholder



The worker's organisation that contributed to the public consultation rated this policy objective as "very important", the river commission considers it "important" and the responses of the four ports range from "somewhat important" to "very important".

5. Assessment of policy options

The European Commission has identified a number of possible policy measures that may address the problem areas referred to above. The results presented in this section reflect the opinions of the different stakeholders with regards to the suitability of the different measures.

PROBLEM OF RESTRICTED LABOUR MOBILITY
Problem driver 1: Different requirements for professional qualifications of workers within the inland navigation sector
Policy measure 1: Extension of the CCNR initiated process of mutual recognition of boatmaster certificates by establishing a mechanism for mutual recognition of professional qualifications in SRBs
Policy measure 2: Introduction of mandatory harmonised requirements for age and physical and mental fitness for all crew members
Policy measure 3: Harmonisation of definitions of certain professional qualifications in inland navigation and mandatory harmonised requirements for these qualifications
Policy measure 4: Harmonised EU minimum training standards for professional qualifications in IWT
Policy measure 5: Introduction at EU level of a central register for EU boatmaster certificates
Policy measure 6: Introduction of voluntary measures from the inland navigation sector towards lowering labour mobility obstacles
Problem driver 2: Different requirements for professional qualifications for workers from outside the sector
Policy measure 7: Introduction of a common method for lowering the barriers for maritime sailing time/experience to qualify as inland navigation sailing time/experience
Problem driver 3: LKRs potentially preventing boatmasters to operate on a certain stretch of a river
Policy measure 8: Introduction of mandatory common criteria for establishing LKRs in the EU
Policy measure 9: Harmonisation of competency/examination requirements for LKRs

Policy measure 10: Introduction of non-binding recommendations regarding criteria for establishing LKRs in the EU
Policy measure 11: Introduction of non-binding recommendations regarding criteria for examination requirements for LKRs
Problem driver 4: Difficulty of extracting reliable information from SRBs needed for workers to prove their professional qualifications in order to allow operating in another country or other river basin
Policy measure 12: Introduction of a mandatory electronic SRB and a central register for e-SRB
Problem driver 5: Language problems preventing crew members of a different nationality to perform duties on vessels sailing on the EU inland waterways
Policy measure 13: Introduction of River Speak

PROBLEM OF SAFETY
Problem driver 1: Standards for professional training in inland navigation have not kept up with technological development
Policy measure 14: Harmonisation at EU level of minimum training standards for all professional qualifications in inland navigation
Policy measure 15: Introduction of voluntary measures from the inland navigation sector towards improving safety
Problem driver 2: Language problems, caused by crew members of different nationalities, resulting in communication problems
Policy measure 13: Introduction of River Speak

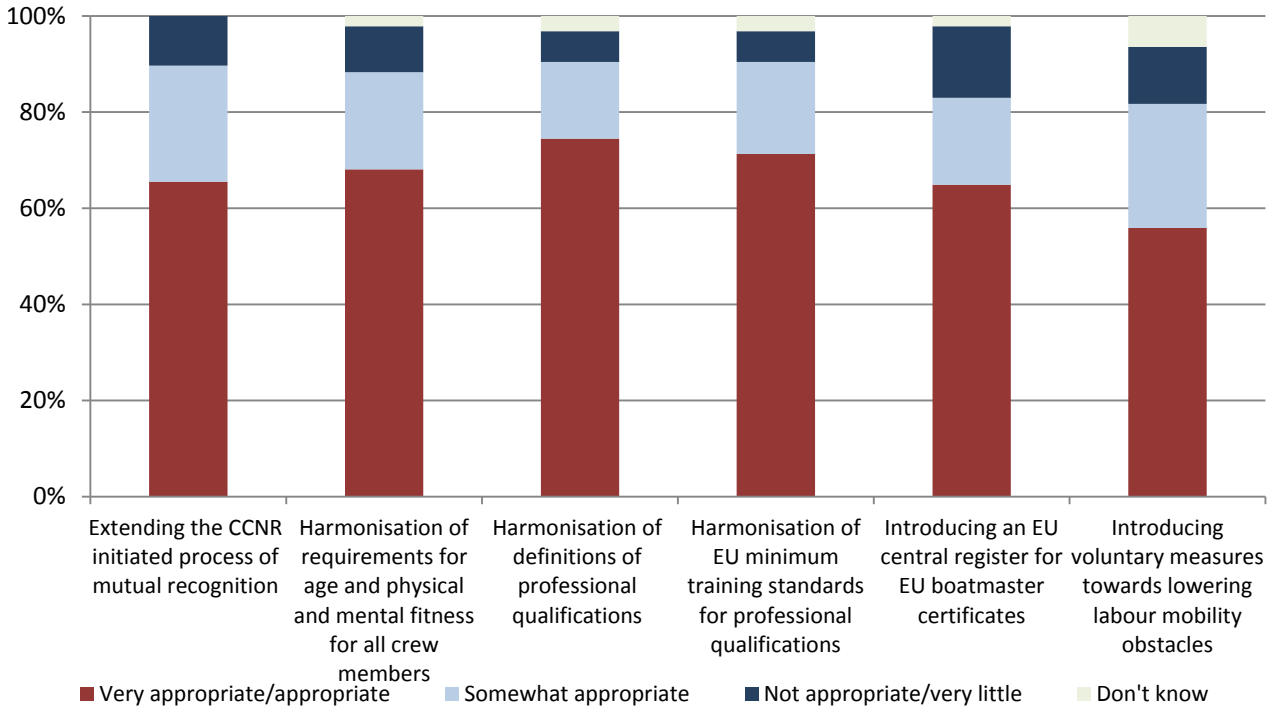
PROBLEM OF RESTRICTED LABOUR MOBILITY

5.1 Overall perception of relevance of different policy measures to deal with the problem of restricted labour mobility due to different requirements for professional qualifications of workers within the inland navigation sector

This section presents the overall perception of the relative suitability of different policy measures to deal with the problem of restricted labour mobility. It is important to note that these are the aggregated responses of all stakeholders. Disaggregation by type of stakeholder is found in section 5.2.

As shown in *Figure 21*, the harmonisation of definitions for certain professional qualifications in inland navigation and mandatory harmonized requirements for these qualifications (74%) and the harmonisation of EU minimum training standards for professional qualifications in inland navigation (71%) are, in relative terms, considered the most adequate policy measures, followed by the mandatory harmonisation of requirements for age and physical and mental fitness (68%). Introducing voluntary measures from the inland navigation sector towards lowering labour mobility obstacles is considered the least adequate policy measure in relative terms by all stakeholders (56%), followed by the measure of extending the CCNR initiated process of mutual recognition of boatmaster certificates by establishing a mechanism for mutual recognition of professional qualifications in Service Record Books (60%). It is important to note that less than 10% of respondents find these policy measures as not appropriate, with the exception of the introduction of an EU central register (15%). Therefore, there is an overall high support to these measures.

Figure 21. Relevance of different policy measures to deal with the problem of restricted labour mobility due to different requirements for professional qualifications of workers within the inland navigation sector



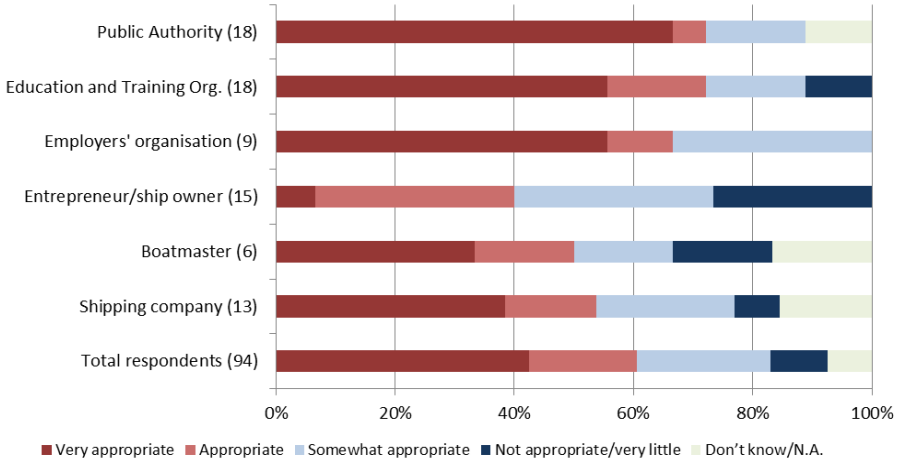
5.2. Relevance of policy measures to deal with the problem of restricted labour mobility due to different requirements for professional qualifications of workers within the inland navigation sector, by type of stakeholder

5.2.1. Policy measure 1: Extending the CCNR initiated process of mutual recognition of boatmaster certificates by establishing a mechanism for mutual recognition of professional qualifications in Service Record Books

As shown in *Figure 22*, extending the CCNR initiated process of mutual recognition would be considered "very adequate" or "adequate" by 72% of public authorities and education and training organisations and by 67% of employers' organisations that responded to the public

consultation. At the same time, the responses of around 70% of entrepreneurs/ship owners, shipping companies and boatmasters range between "very appropriate" and "somewhat appropriate". Entrepreneurs/ship owners are the group that register more "not appropriate" responses.

Figure 22. Relevance of policy measure 1 by type of stakeholder

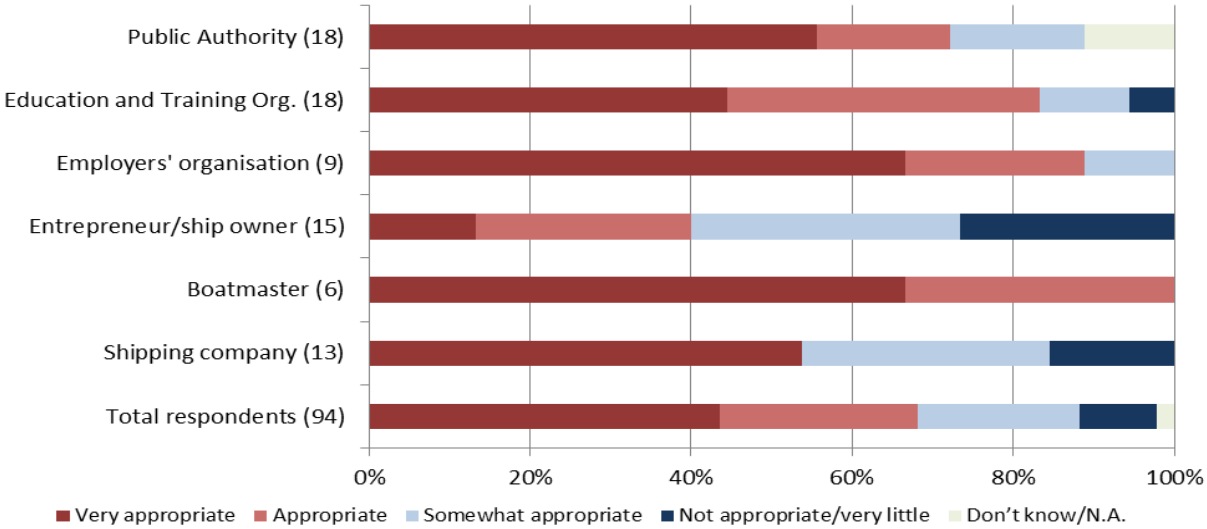


The workers' organisation that contributed to the public consultation rated this policy measure as "very appropriate", the river commission rates it "somewhat appropriate" and the responses of the four ports range between "very appropriate" and "somewhat appropriate".

5.2.2. Policy measure 2: Mandatory harmonised requirements for age and physical and mental fitness for all crew members

All boatmasters, 88% of employers' organisations, 83% of education and training organisations and 72% of public authorities that answered to the public consultation consider that this policy measure would be "appropriate" or "very appropriate" to deal with the problem of labour mobility. The percentages are lower for the other types of stakeholders, in particular for entrepreneurs/ship owners (40%). Despite this, it is important to note that 85% of shipping companies and 73% of entrepreneurs/ship owners consider it, at least, "somewhat appropriate".

Figure 23. Relevance of policy measure 2 by type of stakeholder



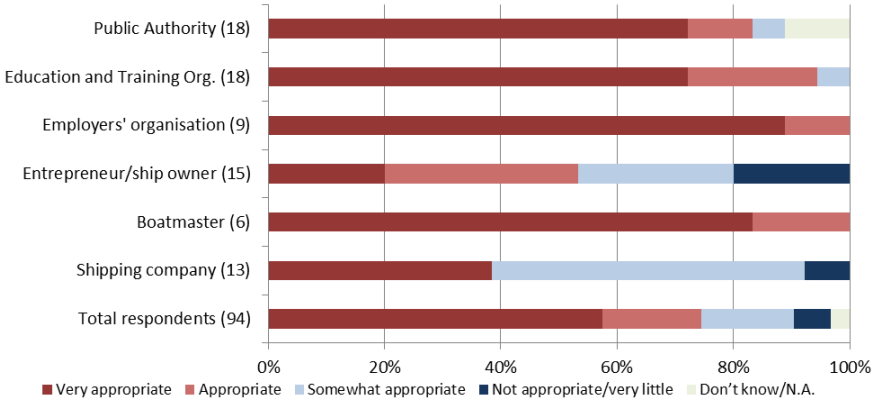
The river commission contributing to the public consultation rated this policy measure as "appropriate", whereas the workers' organisation considers it "somewhat appropriate".

5.2.3. Policy measure 3: Harmonisation of definitions of certain professional qualifications in inland navigation and mandatory harmonised requirements for these qualifications

This measure is considered "very appropriate" or "appropriate" by all employers' organisations and boatmasters that contributed to the public consultation, and by a high percentage of education and training organisations (94%), and public authorities (83%). The majority of shipping companies consider it "somewhat appropriate" (53%), whereas the opinion of entrepreneurs/ship owners is more divided. Moreover, the river commission and the worker's organisation contributing to the public consultation rated this policy measure as "very appropriate".

When asked for which crew members they consider that policy measures 2 and 3 would be most appropriate, **60% of respondents said that they should apply to boatmasters and other crew members**, whereas 24% answered they should only apply to boatmasters.

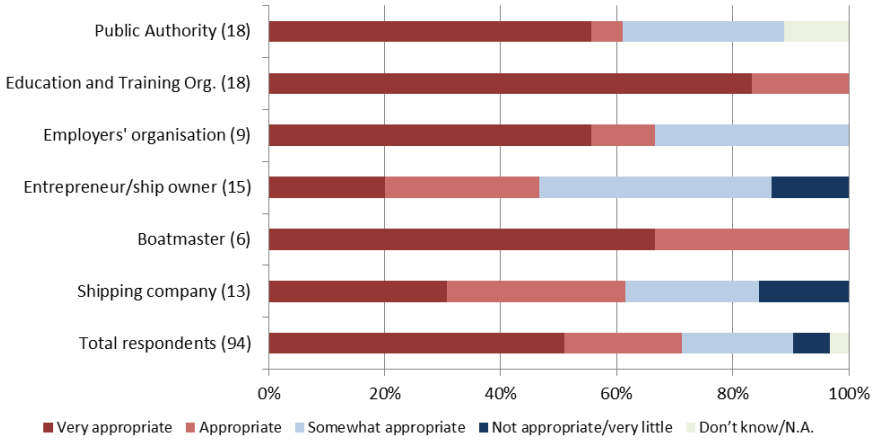
Figure 24. Relevance of policy measure 3 by type of stakeholder



5.2.4. Policy measure 4: Harmonised EU minimum training standards for professional qualifications in inland navigation

Harmonising the EU minimum training standards for professional qualifications in inland navigation is considered a highly appropriate policy measure by all education and training organisations and by all boatmasters that contributed to the public consultation, as well as by 67% of employers' organisations, 61% of shipping companies and 61% of public authorities. The opinion of entrepreneurs/ship owners is more divided, but only 13% consider it not appropriate. It is important to note that more than 90% of all respondents consider this policy measure at least "somewhat appropriate".

Figure 25. Relevance of policy measure 4 by type of stakeholder



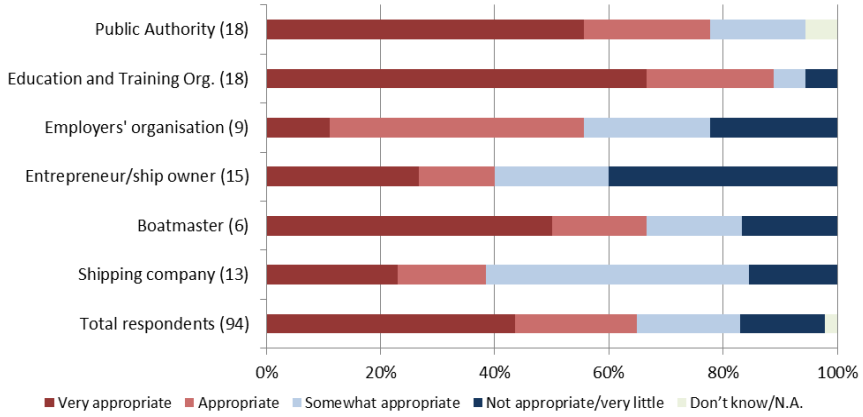
The river commission and the worker's organisation that contributed to the public consultation rated this policy measure as "very appropriate", whereas the four ports consider it either "appropriate" or "very appropriate".

When asked about which crew members they consider that this policy measure would be most appropriate, **61% of respondents stated that it should apply to boatmasters and other crew members**, whereas 28% answered it should only apply to boatmasters.

5.2.5. Policy measure 5: Introducing at EU level of a central register for EU boatmaster certificates

Introducing a central register for EU boatmaster certificate is perceived by the majority of education and training organisations and by public authorities that participated in the public consultation as highly appropriate (with 89% and 78% of their respondents considering it "very appropriate" or "appropriate", respectively), followed by boatmasters (67%). Around 40% of shipping companies and entrepreneurs/ship owners consider it highly appropriate, and the percentage increases notably when "somewhat appropriate" is also taken into account.

Figure 26. Relevance of policy measure 5 by type of stakeholder

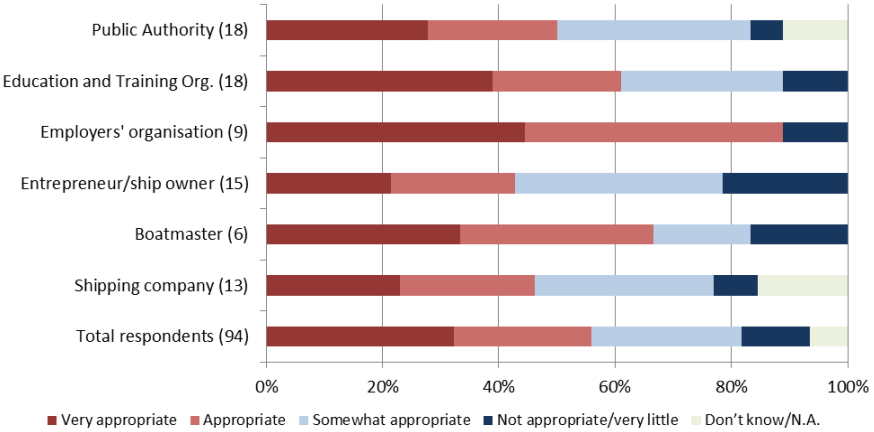


The river commission and the worker's organisation that contributed to the public consultation rated this policy measure as "very appropriate", whereas the four ports consider it either "appropriate" or "very appropriate".

5.2.6. Policy measure 6: Introducing voluntary measures from the inland navigation sector towards lowering labour mobility obstacles

As shown in *Figure 27*, approximately 80% of respondents of all groups of stakeholders consider this policy measure, at least, "somehow appropriate". The groups that register higher percentage of highly appropriate responses are employers' organisations, with 89% of respondents considering the measure as either "very appropriate" or "appropriate", boatmasters (67%) and education and training organisations (61%). The workers' organisation that contributed to the public consultation rated this policy measure as "very appropriate", the river commission considers it "somewhat appropriate" and the responses of the four ports range between "very appropriate" and "somewhat appropriate".

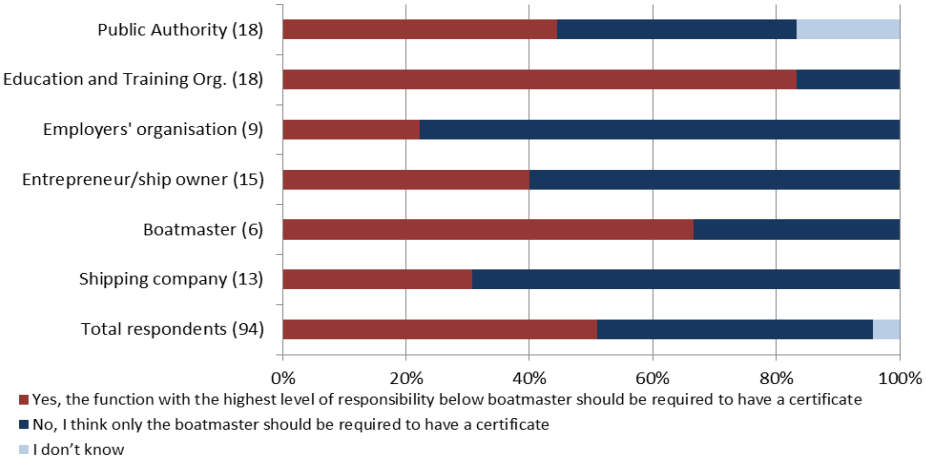
Figure 27. Relevance of policy measure 6 by type of stakeholder



5.2.7. Additional issues: certification of professional qualification

Stakeholders were invited to comment on a number of aspects related to the policy measures previously presented. In particular, this section presents the answers given to questions related to the system of certification of professional qualifications for boatmasters. One of these questions was: "Do you think it is necessary to extend the requirement for certification also to the highest rank under the level of boatmaster?" Responses differ substantially by type of stakeholder (see graph below). While the majority of respondents from education and training organisations gave a positive response (83%), followed by boatmasters (67%), the majority of respondents of other groups of stakeholders consider that only boatmasters should be required to have a certificate, in particular employers' organisations (78%), shipping companies (70%) and entrepreneurs/ship owners (60%).

Figure 28. Extension of certification to the highest rank of responsibility below boatmasters



Stakeholders were also asked about the appropriateness of introducing a modular certification system for boatmasters, which would imply the introduction of specific requirements for certificates with regard to waterways on maritime character, operation of only small vessels on small waterways, and operation of large convoys. *Figure 29* presents the stakeholders' responses. In this case, more than one answer was allowed. Half of the respondents considers that such a modular system should maintain the current specific requirements for boatmasters that operate on waterways of maritime character, 42% of them consider that the modular system should introduce specific more stringent requirements for boatmasters operating large convoys, and 39% of them consider that it should introduce less stringent requirements for boatmasters operating in small vessels on small waterways.

Figure 29. Differentiation of boatmasters certificates

	Number	% of respondents
Yes, such a modular system should maintain the current specific (more stringent) requirements for boatmasters that operate on **waterways of maritime character**	47	50%
Yes, such a modular system should introduce specific (less stringent) requirements for boatmasters that operate **small vessels on small waterways only**	37	39.4%

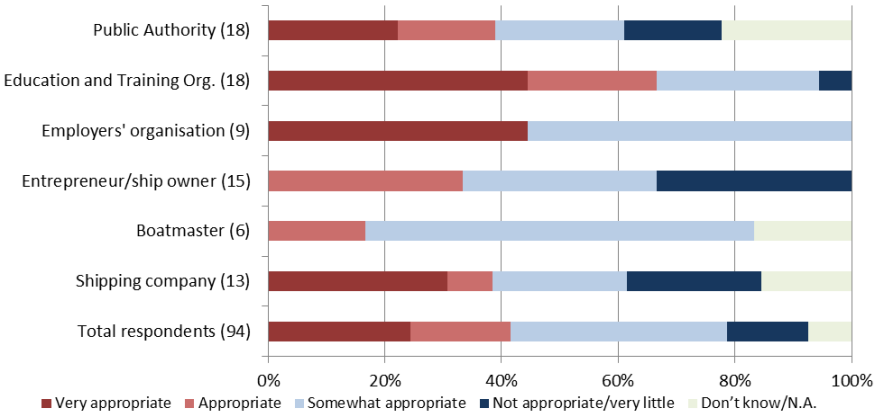
Yes, such a modular system should introduce specific (more stringent) requirements for boatmasters that operate **large passenger vessels**	33	35.1%
Yes, such a modular system should introduce specific (more stringent) requirements for boatmasters that operate **large convoys**	39	41.5%
Yes, such a modular system is important and **other categories need to be considered**	16	17%
No, there is **no need for such a differentiated approach**	12	12.8%
I don't know	11	11.7%
Total	**195**	**-**

5.3. Relevance of policy measure 7 ("Introduction of a common method for lowering the barriers for maritime sailing time/experience to qualify as inland navigation sailing time/experience") to deal with the problem of restricted labour mobility due to different requirements for professional qualifications for workers from outside the sector

The majority of stakeholders answering to this public consultation find this policy measure at least somewhat appropriate. 67% of education and training organisations and 44% of employers' organisations find it either "very appropriate" or "appropriate", whereas boatmasters are the group of stakeholders presenting a lower percentage of these responses. Nevertheless, it is important to note that more 80% of them consider it at least somewhat appropriate. Public authorities, entrepreneurs/ship owners and shipping companies are considerably divided in their responses. Additionally, the workers' organisation, the river commission and two of the four ports contributing to this public consultation rate this policy measure as "somewhat appropriate".

When asked about which crew members they consider that this policy measure would be most appropriate, **53% of respondents said that it should apply to boatmasters and other crew members**, 17% answered it should only apply to boatmasters, and 17% answered that answered it should only apply to other crew members.

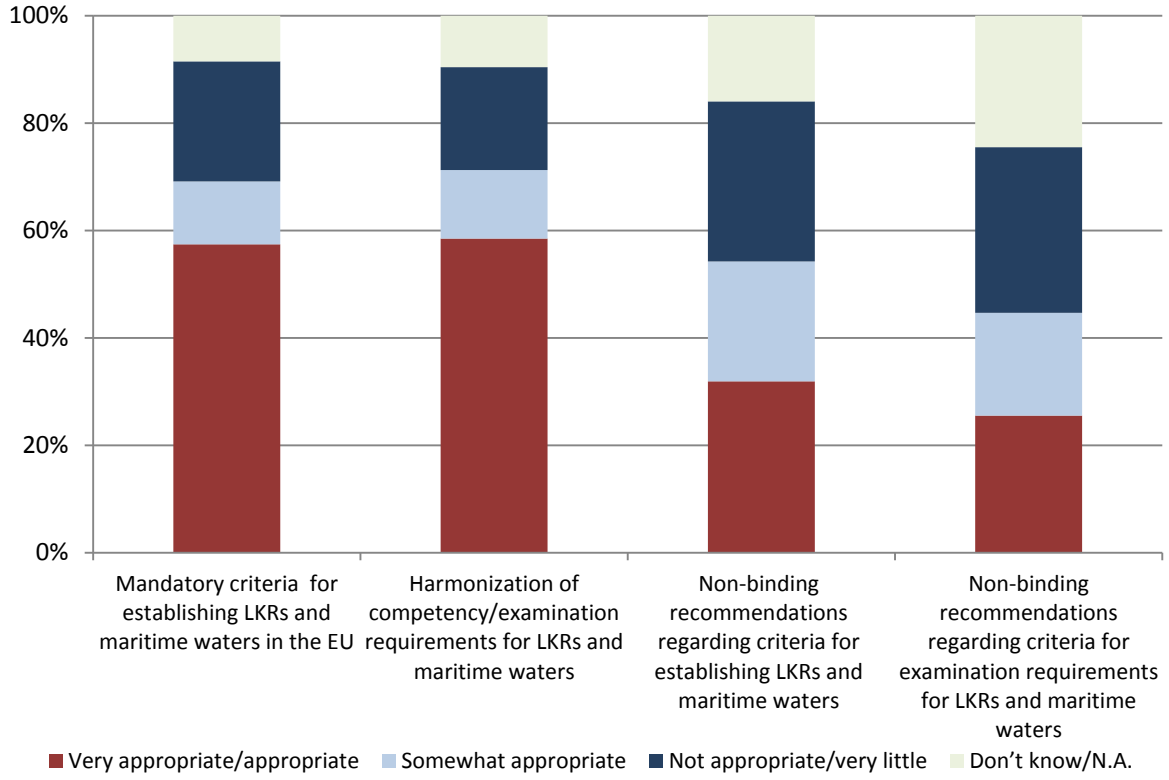
Figure 30. Relevance of policy measure 7 by type of stakeholder



5.4. Overall perception of relevance of different policy measures to deal with the problem of restricted labour mobility due to LKRs potentially preventing boatmasters to operate on a certain stretch of a river

This section presents the overall perception of all respondents of the relative suitability of different policy measures to deal with the problem of restricted labour mobility due to local knowledge requirements. As shown in *Figure 31*, the harmonisation of competency/examination requirements (59%) and the establishment of mandatory common criteria for establishing LKRs in the EU (57%) are, in relative terms, considered the most adequate policy measures. The two remaining measures implying non-binding recommendations are perceived as relatively less appropriate.

Figure 31. Relevance of different policy measures to deal with the problem of restricted labour mobility due to LKRs potentially preventing boatmasters to operate on a certain stretch of a river



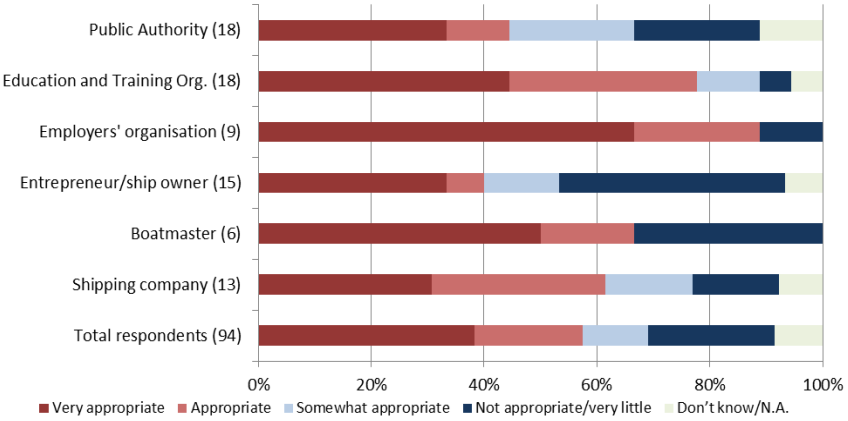
53% of the respondents consider that the **use of simulators** in training programmes or exams could lead to a reduction of training or experience requirements for LKRs, whereas 37% of respondents do not agree with the previous statement.

5.5. Relevance of policy measures to deal with the problem of restricted labour mobility due to LKRs potentially preventing boatmasters to operate on a certain stretch of a river, by stakeholder

5.5.1. Policy measure 8: Mandatory common criteria for establishing LKRs in the EU

This policy measure is considered highly appropriate by the majority of employers' organisations (89% of them rating it either "very appropriate" or "appropriate"), education and training organisations (78%), boatmasters (67%) and shipping companies (62%), whereas it receives lower support from entrepreneurs/ship owners (40%) and public authorities (44%). However, more that 50% of them rate this policy measure at least "somewhat appropriate". Additionally, the river commission contributing to this public consultation considers this measure as "very appropriate".

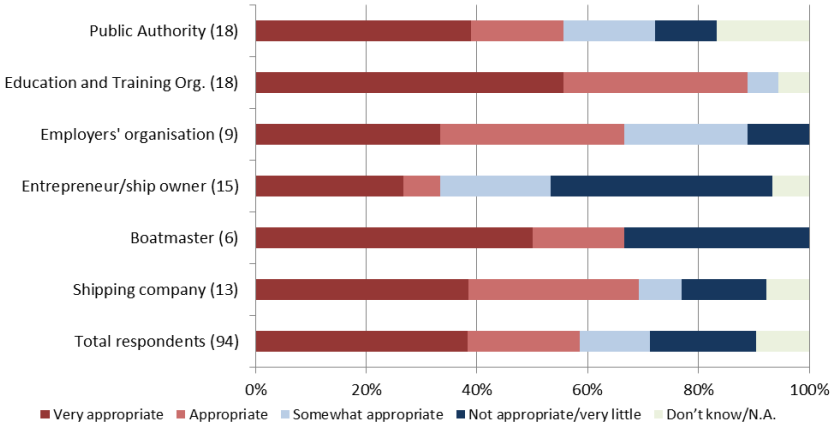
Figure 32. Relevance of policy measure 8 by type of stakeholder



5.5.2. Policy measure 9: Harmonisation of competency/examination requirements for LKR

As shown in *Figure 33*, the distribution of opinions about the appropriateness of this policy measure varies by type of stakeholder. The majority of education and training organisations consider it highly appropriate (89%), followed by shipping companies (69%), boatmasters (67%), employers' organisations (67%) and public authorities (56%). Even though 40% of entrepreneurs/ship owners find it "not appropriate", it should be noted that 53% of their respondents consider the measure at least "somewhat appropriate". The river commission contributing to this public consultation considers this policy measure as "very appropriate".

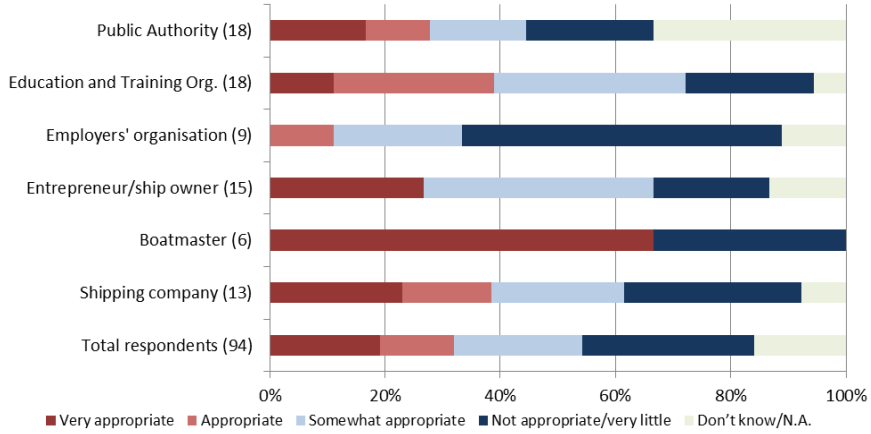
Figure 33. Relevance of policy measure 9 by type of stakeholder



5.5.3. Policy measure 10: Non-binding recommendations regarding criteria for establishing LKRs in the EU

In general, this policy measure receives low support by the different groups of stakeholders, with the only exception of boatmasters. As shown in *Figure 34*, most of the other groups of stakeholders consider this policy measure as either "not appropriate" or only "somewhat appropriate".

Figure 34. Relevance of policy measure 10 by type of stakeholder

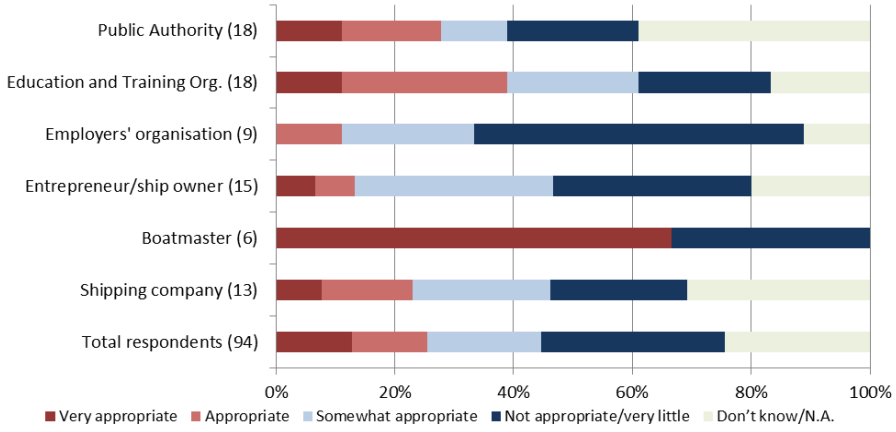


The river commission and two of the four ports contributing to this public consultation consider this policy measure as "not appropriate", whereas the other two ports and the workers' organisation did not provide an answer.

5.5.4. Policy measure 11: Non-binding recommendations regarding criteria for examination requirements for LKR

Similarly to the previous measure, the establishment of non-binding recommendations regarding criteria for examination requirements for LKR is in general not considered an appropriate measure to deal with the problem of restricted labour mobility. This policy measure registers the lowest support among stakeholders, with the only exception of boatmasters. The river commission and two of the four ports contributing to this public consultation consider this policy measure as "not appropriate". The other two ports and the workers' organisation do no provide an answer.

Figure 35. Relevance of policy measure 11 by type of stakeholder

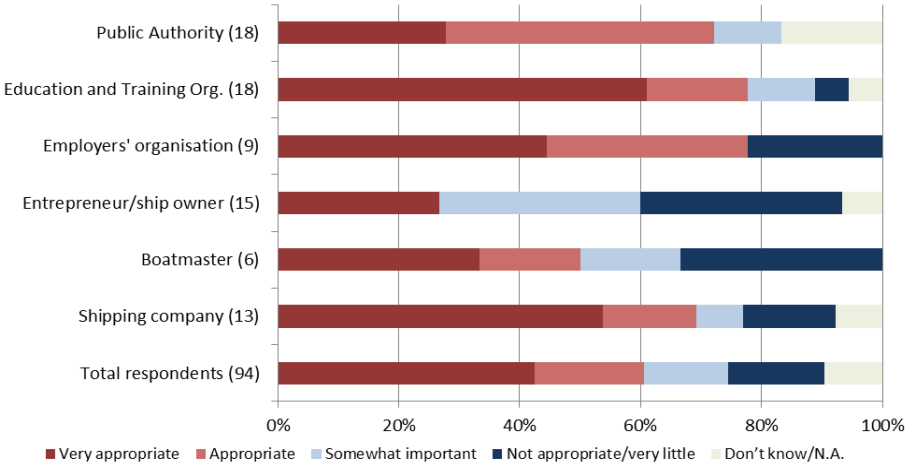


When asked whether the **information provided by River Information Services** could replace in certain cases the need for local knowledge requirements, 52% of the respondents answered "yes, sometimes", 22% answered "never", and 18% answered "yes, always".

5.6. Relevance of policy measure 12 ("Introduce a mandatory electronic SRB and a central register for e-SRB") to deal with the difficulty of extracting reliable information from SRBs needed for workers to prove their professional qualifications, by stakeholder

Introducing a mandatory electronic SRB is considered appropriate by 78% of education and training organisations, 78% of employers' organisations and 72% of public authorities. Despite registering a lower percentage of "very appropriate" and "appropriate" responses than the previously mentioned groups, more than 60% of shipping companies, boatmasters and entrepreneurs/ship owners consider it at least "somewhat appropriate". The specific distribution of responses is shown in *Figure 36*.

Figure 36. Relevance of policy measure 12 by type of stakeholder

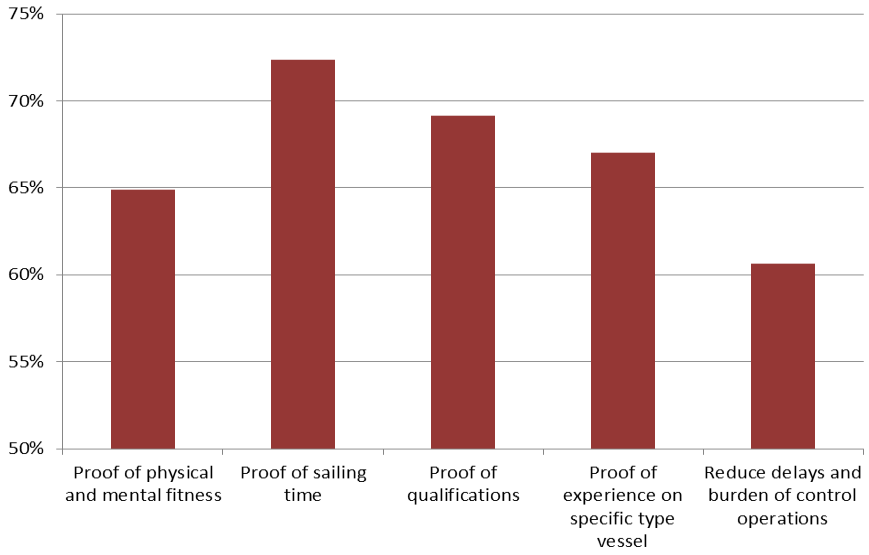


The workers' organisation participating to this public consultation consider this policy measure "very appropriate", whereas the river commission rates it as "very appropriate".

When asked about which crew members they consider that this policy measure would be most appropriate for, **52% of respondents answered boatmasters and other crew members**, 16% answered only boatmasters and 16% answered only other crew members. When asked whether they think that introducing electronic SRBs would be beneficial for inland navigation, 74% of the stakeholders responded positively. Furthermore, 64% of the respondents consider that the introduction of electronic SRBs should be accompanied by the introduction of **electronic logbooks** (for instance to verify entries made in the e-SRB with regard to sailing time).

Stakeholders where additionally asked for what purposes would the e-SRB be used. *Figure 37* below shows the percentage of total stakeholders that stated that they "totally agree" or "tend to agree".

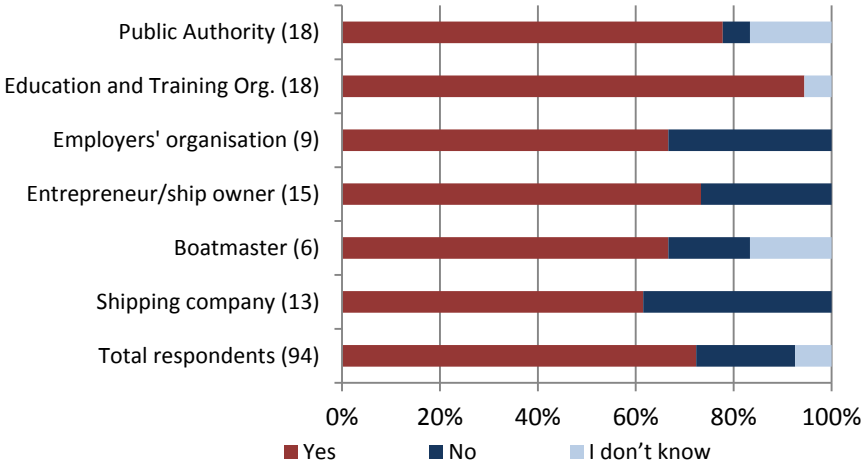
Figure 37. Use of the e-SRBs



5.7. Relevance of policy measure 13 ("Introduction of River Speak") to deal with the problem of restricted labour mobility derived from language problems

The introduction of River Speak or other language-neutral means of communication in the training programmes and as a part of professional qualifications is considered by 72% of stakeholders contributing to the public consultation as a measure that could help addressing the problem of mobility of IWT workers. As shown in *Figure 38*, education and training organisations are the group that presents a higher support to this measure (94%), followed by public authorities (78%) and entrepreneurs/ship owners (73%). 60% of shipping companies rate the measure as relevant to improve labour mobility, despite being the group that gives the lowest support to the measure, in relative terms. The river commission and the workers' organisation that participated in the public consultation also consider this measure as very appropriate.

Figure 38. Relevance of policy measure 13 to deal with the problem of mobility, by type of stakeholder

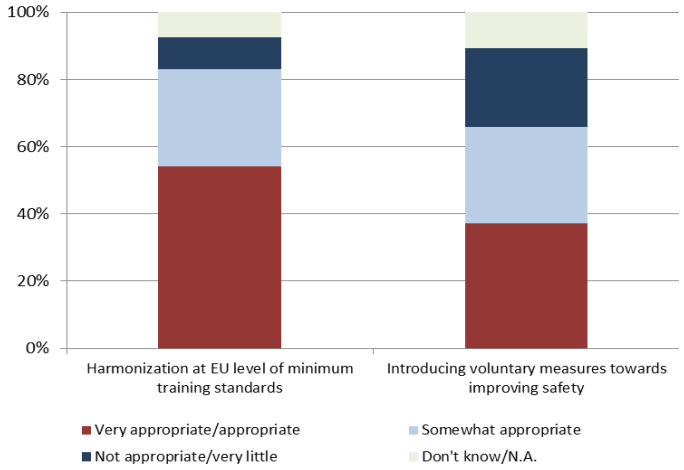


PROBLEM OF SAFETY

5.8 Overall perception of relevance of different policy measures to deal with the safety problem related to the fact that the standards for professional training in inland navigation have not kept up with technological development

This section presents the relative importance of different policy measures to the problem of safety, as results from the responses of all the stakeholders participating in the public consultation. Responses by type of stakeholder are found in the following section 5.8. As shown in *Figure 39*, the harmonisation at EU level of minimum training standards for all professional qualifications in inland navigation is in relative terms considered more appropriate to deal with safety problems than introducing voluntary measures (83% of respondents consider harmonisation "somewhat appropriate", "appropriate" or "very appropriate", versus 66% in the case of voluntary measures). Only 10% considers the harmonisation measures as not appropriate, whereas this figure rises up to 23% for the voluntary measures.

Figure 39. Relevance of policy measures to deal with the safety problem related to the fact that standards for professional training have not kept up with technological development



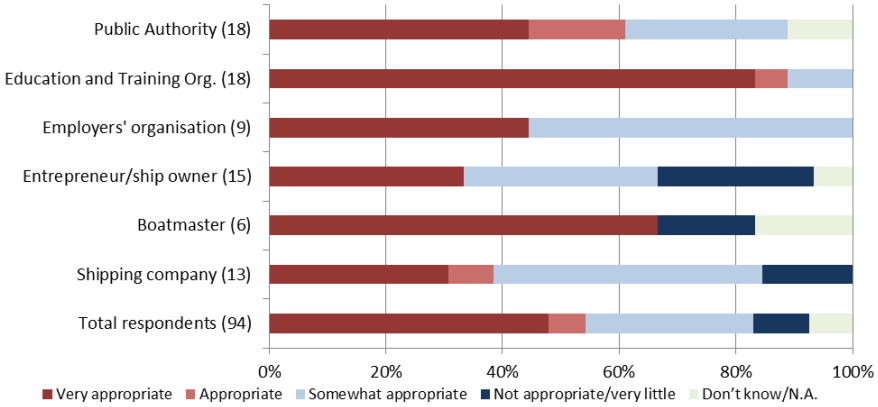
Stakeholders were asked whether the **use of simulators** in inland navigation training and education programmes would increase safety in the sector. The majority of respondents (84%) answered positively.

5.9. Relevance of policy measures to deal with the safety problem related to the fact that the standards for professional training in inland navigation have not kept up with technological development, by type of stakeholder

5.9.1. Policy measure 14: Harmonisation at EU level of minimum training standards for all professional qualifications in inland navigation

The distribution of responses with regards to the appropriateness of this policy measure differs notably by group of stakeholder. Approximately 90% of education and training organisations consider it highly appropriate, followed by 67% of boatmasters and 61% of public authorities. At the same time, employers' organisations, shipping companies and entrepreneurs/ship owners present a higher percentage of "somewhat important" responses.

Figure 40. Relevance of policy measure 14 by type of stakeholder



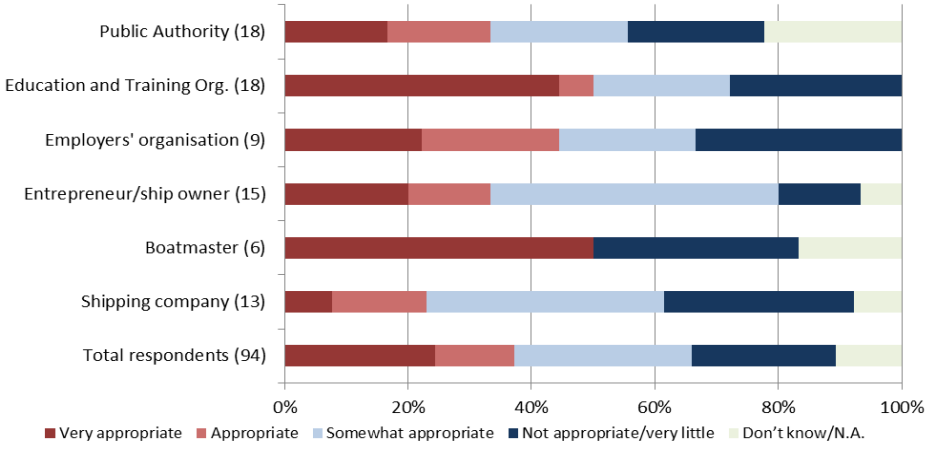
The river commission contributing to this public consultation considers that this policy measure is "very appropriate", whereas the workers' organisation finds it "appropriate". The opinion of ports is highly dispersed in this case. It is important to note that, in general, more than 80% of respondents find this policy measure, at least, "somewhat important".

When asked for which crew members you consider that this policy measure would be the most appropriate, **71% of respondents answered boatmasters and other crew members**, whereas 17% stated only boatmasters.

5.9.2. Policy measure 15: Introducing voluntary measures from the inland navigation sector towards improving safety

The perception of the appropriateness of this measure to deal with the problem of safety is comparatively more dispersed than in previous cases. The majority of respondents of all groups of stakeholders perceive this measure as at least "somewhat appropriate". Education and training organisations and boatmasters are the groups registering a higher percentage of "very appropriate" or "appropriate" responses, with 50% of the respondents in each case.

Figure 41. Relevance of policy measure 15 by type of stakeholder

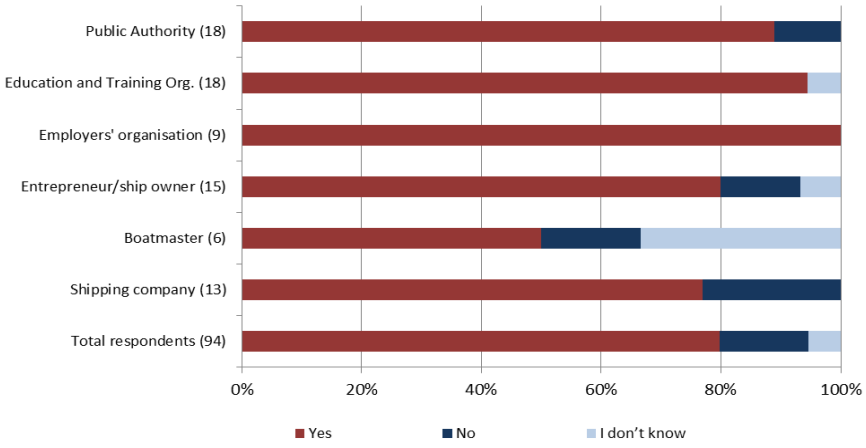


The river commission participating in this public consultation considers that this policy measure is "somewhat appropriate".

5.10. Relevance of policy measure 13 ("Introduction of River Speak") to deal with the safety problem derived from language problems

Around 80% of the respondents consider that the introduction of River Speak or other language-neutral means of communication in the training programmes and as a part of professional qualifications would help improving the levels of safety in the sector. As shown in *Figure 42*, all employers' organisations that participated in this public consultation give support to this measure, followed by 94% of education and training organisations, 89% of public authorities, 80% of entrepreneurs/ship owners and 77% of shipping companies. The workers' organisation and the river commission participating in this public consultation also have a positive opinion on this measure.

Figure 42. Relevance of policy measure 13 to deal with problem of safety, by type of stakeholder



6. Regional differences in the impact of the measures as perceived by the stakeholders

The stakeholders in the online public consultation were asked to compare harmonised requirements measures with voluntary measures. The main results for two important river areas, the Rhine and Danube, are summarized below:

- With regard to labour mobility, mandatory harmonised professional qualifications and training standards will, according to 85% of CCNR stakeholders, and a bit less than 80% of Danube stakeholders, result in fairly to very positive effects on labour mobility. For voluntary measures these percentages are respectively around 50% and 60%.
- With regard to administrative burden: mandatory harmonised professional qualifications and training standards will, according to 54% of CCNR stakeholders and more than 70% of Danube stakeholders, result in fairly to very positive effects on the administrative burden. For voluntary measures these percentages are respectively around 23 and 62%.
  With regard to safety: mandatory harmonised professional qualifications and training standards will according to around 90% of CCNR stakeholders, and more than 85% of Danube stakeholders result in fairly to very positive safety effects. For voluntary measures these percentages are both only around 60%. For the voluntary approach, respectively 8 and 4 % of CCNR and Danube respondents foresee negative effects.

The online public consultation revealed similar support both from the CCRN and the Danube region

7. Conclusions

The responses received within the online public stakeholder consultation on the "Recognition and modernisation of professional qualifications in inland navigation" confirm that the problems of restricted labour mobility and safety identified by the European Commission are of high importance and need to be dealt with, in order to remove the barriers between EU Member States for exercising professions in the field of inland navigation. The majority of the respondents considered the different problem drivers and subsequent policy objectives identified as highly relevant.

The online consultation also gathered information about the opinion of different groups of stakeholders with regards to the appropriateness of 15 different policy measures. The responses received confirm a high level of support to measures implying the harmonisation of professional requirements, qualifications and examinations in inland navigation between EU Member States, whereas the introduction of voluntary measures or non-binding recommendations receives a considerably lower level of support.

The voice of the stakeholders on specific problems and measures gathered through this public consultation will help the European Commission to devise a set of appropriate policy measures during the process of elaboration of the impact assessment accompanying a potential legislative proposal on the recognition and modernisation of professional qualifications in inland navigation.

Annex 12:

Online public consultation: summary of the stakeholders' view

INTRODUCTION

In the context of the impact assessment accompanying a potential legislative proposal on the recognition and modernisation of professional qualifications in inland navigation, the Commission services have conducted an online public stakeholder consultation. The goal of the potential initiative is the removal of barriers between EU Member States for exercising professions in the field of inland navigation, thus subscribing to the main goal of the European Commission's common transport policy of the free movement of persons and goods across the EU. The harmonisation of national legal and administrative regulations is of high importance for creating fair conditions for competition within and between the different transport modes[7]. The aim of this public online consultation was to collect the stakeholders' views in order to have their opinion on the identified problems and policy objectives and to assess their support to the proposed policy measures.

The public consultation was open for 13 weeks (26/03/2013 to 21/06/2013), and it contained a total of 90 questions, both quantitative and qualitative. The Commission services received a total of 94 replies. This note follows the structure of the consultation document and provides a summary of the nature of responses of different stakeholders. It is important to note that the sample of respondents is not statistically representative, and thus results should be interpreted with caution.

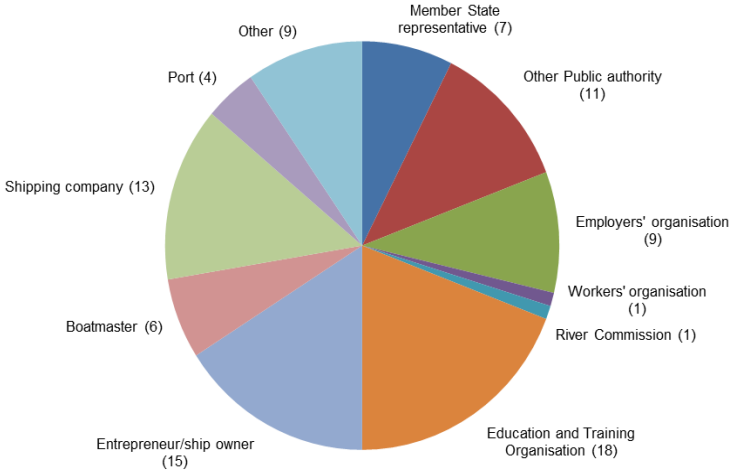
1. IDENTIFICATION OF THE RESPONDENTS

1.1 Overall breakdown of consultation respondents by stakeholder type

The Commission services received a total of 94 contributions. 10 stakeholder groups (divided by organisation type)[8] were represented among the respondents. Education and training organisations were the largest participating group, with 18 responses, followed by entrepreneurs/ship owners (15) and shipping companies (13). Public authorities account for a total of 17 responses, divided between Member State representatives (7) and other public authorities (10). The other categories had relatively few respondents (see graph below).
The graphs accompanying each section of this report indicate the proportions of each category of respondents that gave a certain answer. Given the low number of responses received from workers' organisations (1), river commissions (1)[9] and ports (4), these categories will not be included in the graphs throughout the report, but will be qualitatively assessed and referred to in the text when appropriate.

[7] See the background document for more information.
[8] Please note that opinions expressed do not always represent the position of an organisation (e.g. training institute), but sometimes only the view of the person who responded to the public consultation. For the purpose of data analysis, these contributions have nevertheless been considered as opinions expressed by a member of the stakeholder's group to which the organisation they work for belongs.
[9] The river commission participating in the public consultation was the Danube Commission.

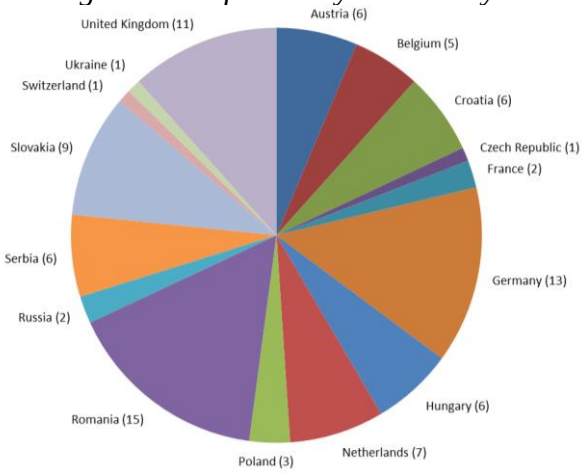
Figure 1. Consultation respondents by stakeholder type



1.2 Overall summary of responses by nationality

The responses came from a total of 16 countries. Romania (15), Germany (13), the United Kingdom (11) and Slovakia (9) account for the largest number of respondents, followed by the Netherlands (7), Hungary (6), Austria (6), Croatia (6) and Belgium (5).

Figure 2. Responses by nationality



1.3. Specific geographical range(s) for which stakeholders have experience

Figure 3 presents the geographical ranges for which the respondents to the public consultation have experience. The information provided reflects that a lot of respondents have experience in multiple river basins. 47 stakeholders have experience in the Danube and Sava Basin, 38 have it for the Rhine basin and 30 for the Moselle Basin.

Figure 3. Respondents by geographical range of experience

Category	Number
Rhine Basin	38
Moselle Basin	30

Danube and Sava Basin	47
Scheld and Meuse Basin	15
Elbe Basin	12
Other French waterways	6
Other German waterways	21
Other Dutch waterways	16
Oder Basin	7
Inland waterways of maritime character	28
Others	19
Total	**239**

2. Problems to be addressed

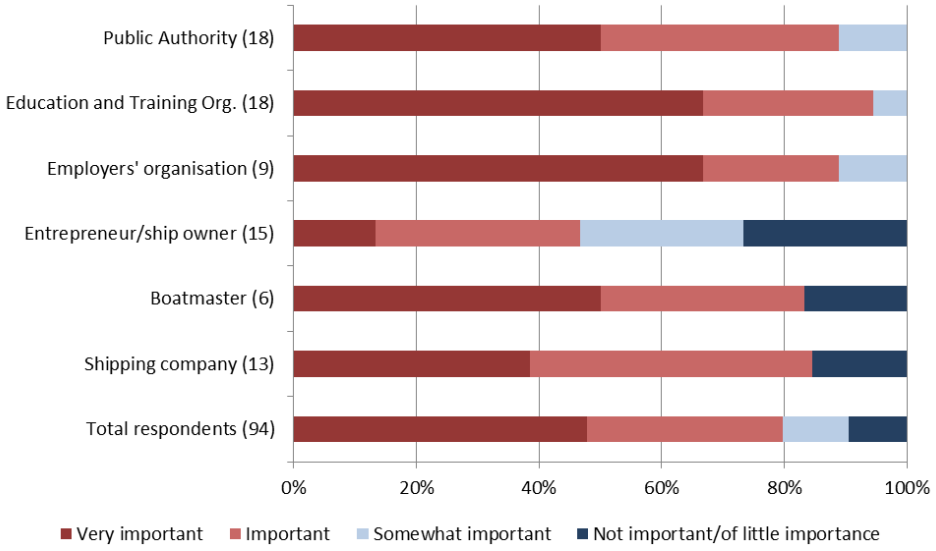
In this section of the public consultation, the European Commission sought to understand to which extent stakeholders agree with the existence of the pre-identified problems regarding the recognition of professional qualifications and training standards in inland navigation and to identify other problems that would need to be taken into account.

2.1. Is the problem of restricted labour mobility relevant?

Almost 80% of all respondents rated the problem of restricted labour mobility derived from the differences between countries in professional qualifications and training standards in inland navigation as "important" or "very important". Education and training organisations are the group that rates it as most important (95%), followed by public authorities and employers' organisations (around 89% each). Entrepreneurs/ship owners present a more dispersed distribution of responses, with almost 50% of the respondents considering the labour mobility restrictions as "very important" or "important".

Figure 4. Relevance of the problem of restricted labour mobility by stakeholder type[10]

[10] This graph shows the distribution of answers given by each category of stakeholder, allowing the reader to compare the answers provided by different groups of stakeholders. At the same time, the vertical axis presents the number of respondents in each category (e.g. 18 public authorities). The last category of the graph (i.e. "total respondents") includes the ones presented in the categories above, and also the answers of four ports, one river commission, a workers 'organisation and nine responses classified as "others". This type of graph will be used throughout the report.

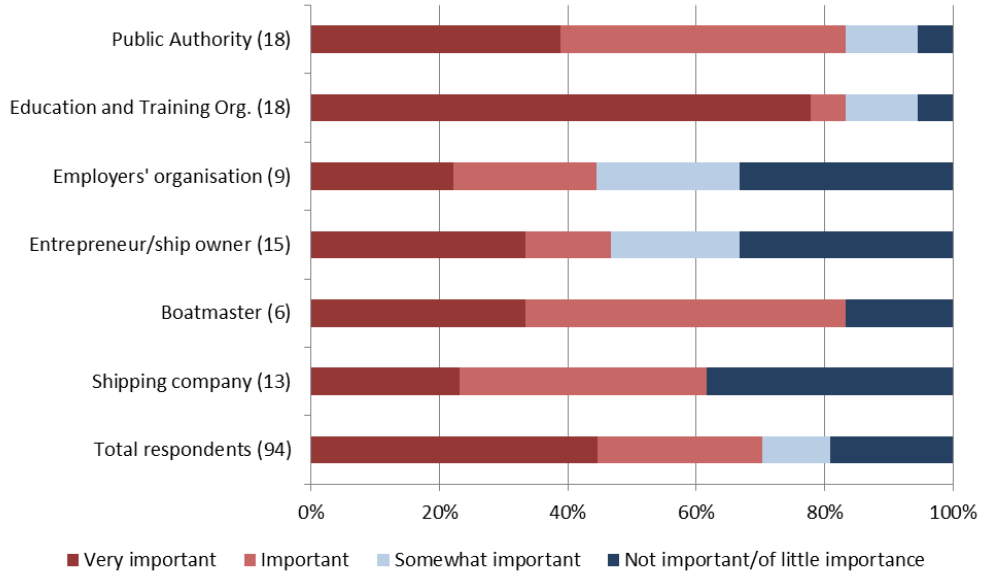


The river commission and the worker's organisation that contributed to the public consultation rated this problem as highly important. The four ports provided responses that range from "somewhat important" to "very important".

2.2. Is the problem of safety relevant?

Around 70% of all respondents consider that safety problems derived from the differences between countries in professional qualifications and training standards in inland navigation are "important" or "very important". Nevertheless, responses vary by group of stakeholder: whereas 83% of public authorities, boatmasters and education and training organisations consider this problem as "very important" or "important", the percentage is of around 45% for entrepreneurs/ship owners and employers' organisations. Despite this, it is important to note that more than 60% of respondents of each group of stakeholders consider this problem at least "somewhat important".

Figure 5. Relevance of the problem of safety by stakeholder type



3. Problem drivers

3.1. Problem of Restricted Labour Mobility: Overall perception of relevance of different problem drivers

This section presents the overall perception of the relative importance of different drivers to the problem of restricted labour mobility. It is important to note that these are the aggregated responses of all stakeholders. Disaggregation by type of stakeholder is found in the following section 3.2.

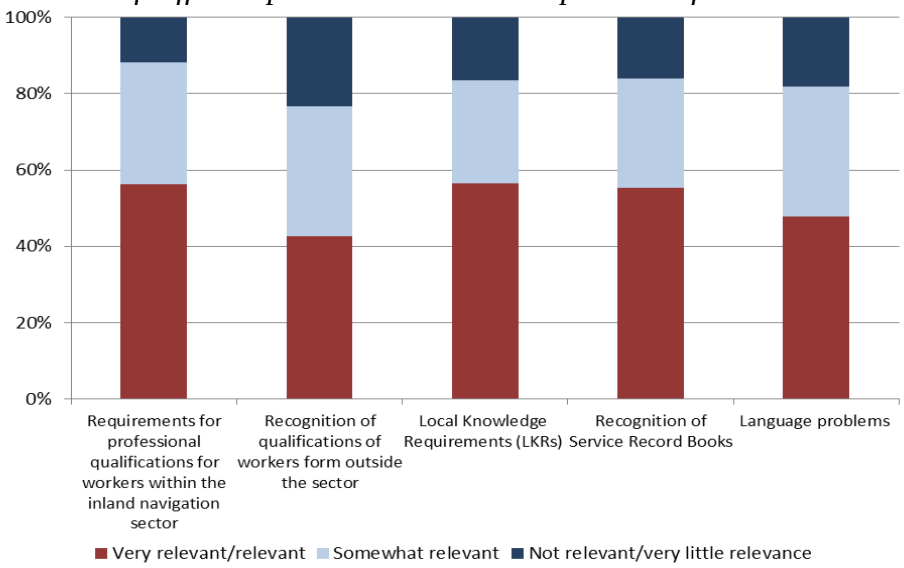
As shown in *Figure 6*, difficulties due to different requirements for professional qualifications of workers within the inland navigation sector (56%) and the difficulties with the recognition by national authorities of service record books (SRBs) or of the information contained in the SRBs (55%) are in relative terms considered the aspects contributing the most to the problem of restricted labour mobility. Around 50% of all respondents find that local knowledge requirements (LKRs) preventing boatmasters to operate on a certain stretch (51%) and language problems preventing crew members of different nationalities to perform duties on vessels sailing on the EU inland waters (48%) are "relevant" or "very relevant" problem drivers. Finally, difficulties with the recognition of relevant professional qualifications of workers from outside the sector are considered as the least important problem driver in relative terms (43% rating it "very relevant" or "relevant").

The stakeholders were asked to assess the **current system of mutual recognition of Service Record Books operated through multilateral agreements between the CCNR and a number of non-Rhine EU Member States**. 40% of the respondents stated that this system serves its purpose only partially, 21% consider that it does not serve its purpose and only 13% of them consider that it serves its purpose fully.

When asked whether the **current system of mutual recognition of boatmasters certificates** adequately addresses the labour mobility barriers for boatmasters from the Non-Rhine EU Member States on the Rhine, 45% of the respondents say that mobility

barriers are only partially addressed, 26% think that they are not adequately addressed, and only 12% consider that they are fully addressed through this system.

Figure 6. Relevance of different problem drivers to the problem of restricted labour mobility

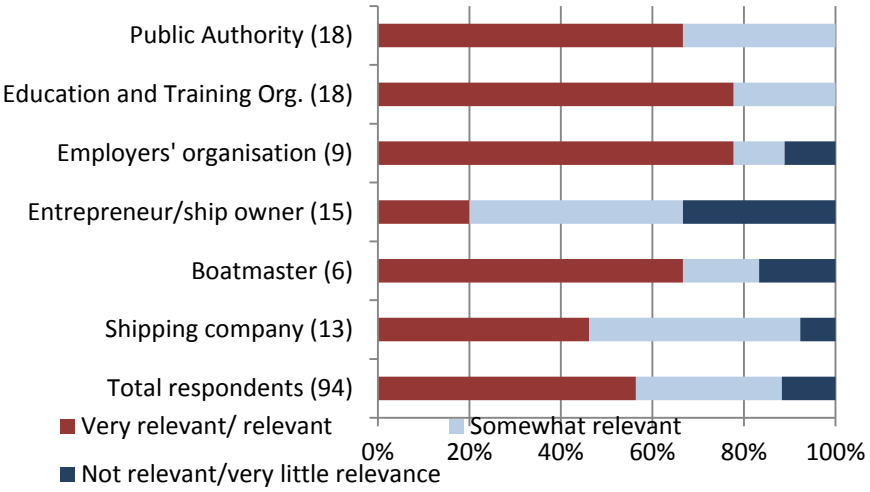


3.2. Relevance of different problem drivers by type of stakeholder

3.2.1. Problem driver 1: Difficulties due to different requirements for professional qualifications of workers within the inland navigation sector (requirements for experience, exam programmes, physical and mental fitness)

Around 78% of education and training organisations and employers' organisations that responded to the public consultation consider this problem driver as highly relevant, followed by around 67% of boatmasters and public authorities, and 46% of shipping companies. Most entrepreneurs/ship owners rated it as "somewhat relevant" (47%).

Figure 7. Relevance of problem driver 1 (different requirements for professional qualifications) by type of stakeholder

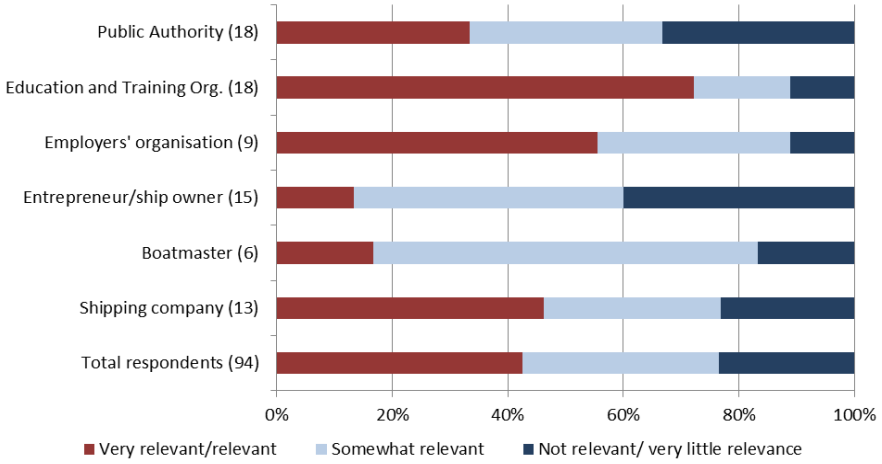


Additionally, the river commission and the worker's organisation that contributed to the public consultation rated this problem driver as highly relevant, whereas three out of four ports rated it as "somewhat important". It is important to note that only 11% of the total number of respondents finds this problem driver as "not relevant" or of "little relevance".

3.2.2. Problem driver 2: Difficulties with recognition of relevant professional qualifications of workers from outside the sector (such as the maritime or fishing sector)

The distribution of responses with regard to the second problem driver differs substantially by group of stakeholder. An important percentage of education and training organisations (72%) and employers' organisations (56%) consider it a highly relevant problem, followed by shipping companies (46%). All the other groups consider it mainly "somewhat relevant", in particular boatmasters (67%). Around 67% of public authorities and 60% entrepreneurs/ship owners consider it at least "somewhat relevant".

Figure 8. Relevance of problem driver 2 (recognition of qualifications of workers from outside the sector) by type of stakeholder



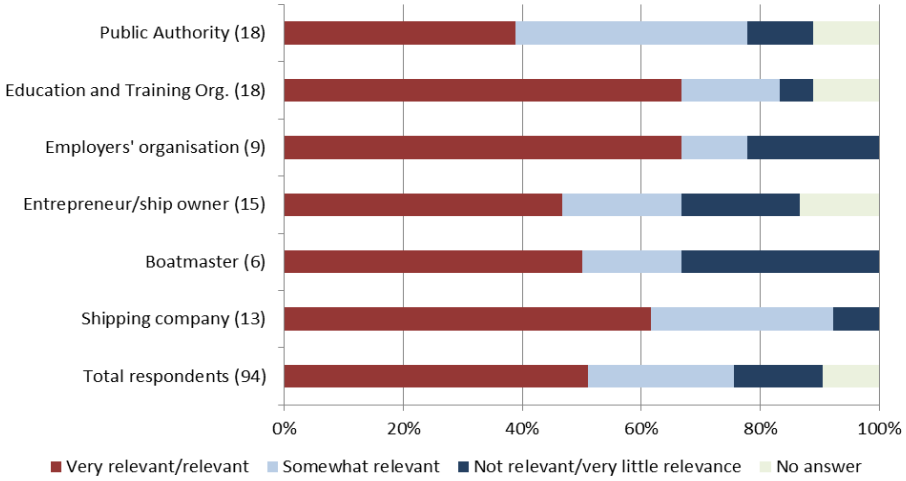
The river commission and the worker's organisation that contributed to the public consultation rated this problem driver as highly relevant, whereas three out of four ports rated it as "somewhat important".

3.2.3. Problem driver 3: Local Knowledge Requirements (LKRs) may prevent boatmasters to operate on a certain stretch (relevant for boatmasters only)

Perceptions of the relevance of this problem driver vary between types of stakeholders, as shown in *Figure 9*. Education and training organisations and employers' organisations are the groups that consider it more important, with 67% of their respondents rating it as highly relevant, followed by shipping companies (62%). At the same time, entrepreneurs/ship owners and boatmasters are the groups of stakeholders that perceive this problem driver as less relevant, in relative terms, with 67% of their respondents rating it as highly important or somewhat important. With regards to public authorities, it should be noted that despite presenting a relatively low percentage of "highly relevant" responses, only 11% of them consider the issues with LKRs of no relevance. Additionally, the river commission and the

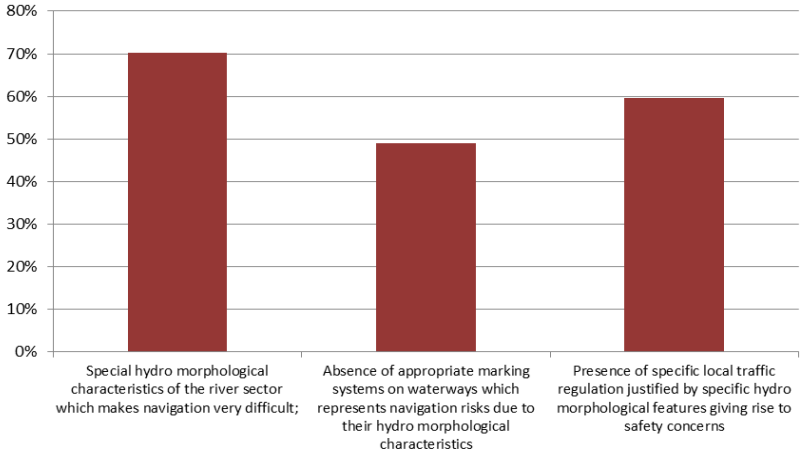
worker's organisation that contributed to the public consultation consider this problem driver as highly relevant.

Figure 9. Relevance of problem driver 3 (Local Knowledge Requirements) by type of stakeholder



The public consultation also asked the stakeholders about the justification of local knowledge requirements. As shown in *Figure 10*, 70% of the respondents consider that LKRs are justified when there are some special hydro morphological characteristics of the river sector which make navigation very difficult; 60% of them consider they are justified when there are specific local traffic regulations in place due to safety concerns, and 49% of them refer to the absence of appropriate marking systems.

Figure 10. Criteria for the establishment of Local Knowledge Requirements[11]



[11] This graph shows the percentage of stakeholders that consider each of these criteria relevant for the establishment of LKRs. It has to be taken into account that more than one response was allowed.

When asked about whether the LKRs which are currently in force in Member States are justified in view of the criteria referred to above (hydro morphological characteristics, absence of marking systems, local traffic regulations), the responses provided were the following:

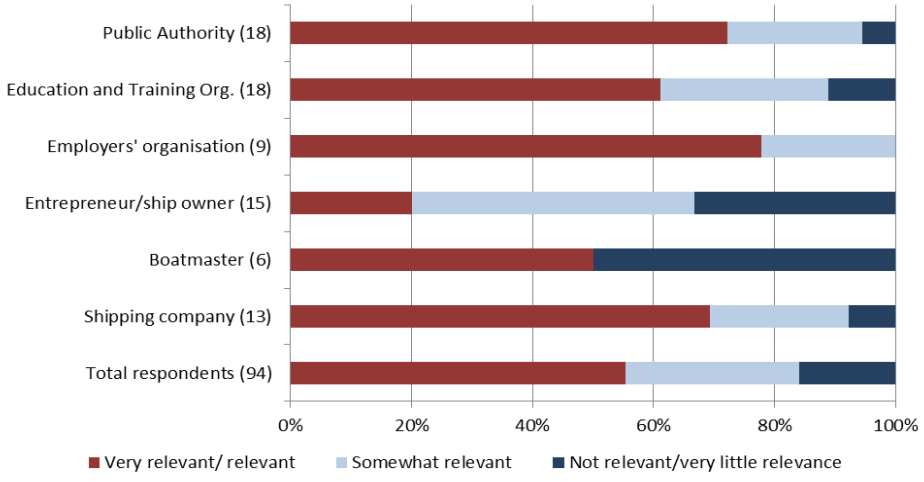
Figure 11. Justification of the currently enforced LKRs[12]

Answer	Number
The currently enforced LKRs are **fully justified** in view of the criteria mentioned	38
The currently enforced LKRs are **partially justified** in view of the criteria mentioned	30
The currently enforced LKRs are **not justified** in view of the criteria mentioned	47
Don't Know	15
Total	**94**

3.2.4. Problem driver 4: Difficulties with the recognition by national authorities in the Member States of Service Record Books (SRBs) or of the information contained in the SRBs

The difficulties with the recognition of SRBs are considered by 78% of employers' organisations responding to the public consultation as "relevant" or "very relevant" drivers to the problem of restricted labour mobility. A slightly lower percentage is registered for public authorities and shipping companies (around 70% in each case). Entrepreneurs/ship owners are the group of stakeholders that registers a lower percentage of "highly relevant" responses (20%). Despite this, it is important to note that 67% of them consider it either "somewhat relevant" or "highly relevant". Boatmasters present a divided position: half of the respondents consider it very relevant, whereas the other half consider it of little relevance.

Figure 12. Relevance of problem driver 4 (recognition of Service Record Books) by type of stakeholder



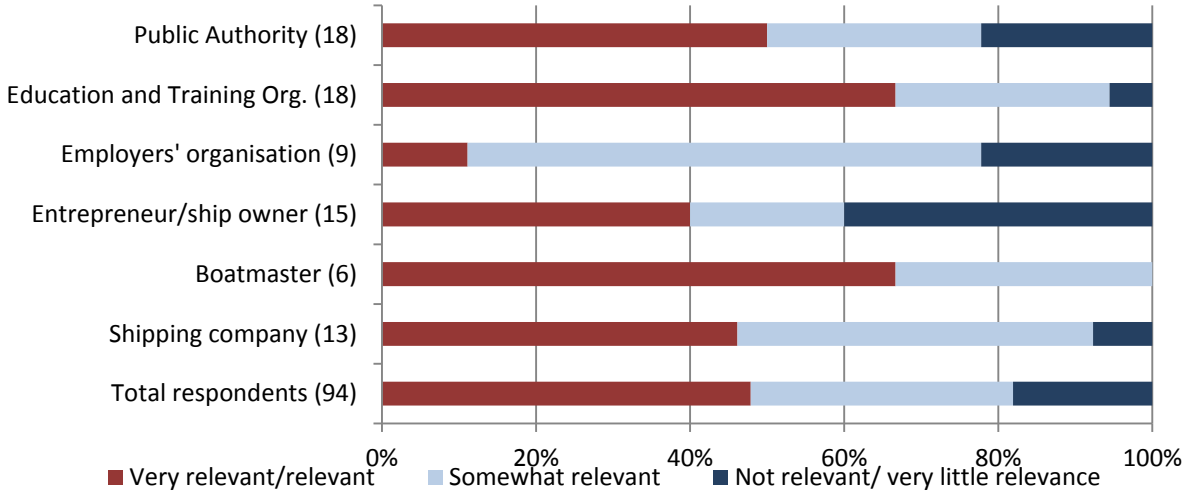
[12] This graph shows the number of stakeholders that gave each response.

The river commission and the worker's organisation that contributed to the public consultation rated this problem driver as "very relevant" or "relevant", whereas three out of four ports rated it as "somewhat relevant".

3.2.5. Problem driver 5: Language problems prevent crew members of a different nationality to perform duties on vessels sailing on the EU inland waterways

Language problems are considered a relevant barrier to labour mobility in inland navigation by education and training organisations and by boatmasters (67% each), while it is considered as "somewhat relevant" by most employers' organisations responding to the consultation (67%). Public authorities, shipping companies and entrepreneurs/ship owners have an intermediate position, with around 40-50% of them rating language problems as highly relevant.

Figure 13. Relevance of problem driver 5 (language problems) by type of stakeholder



Furthermore, the river commission and the worker's organisation that contributed to the public consultation rated this problem driver as highly relevant, whereas the ports present a more dispersed opinion. In total, 80% of the respondents consider language problems as somewhat relevant to very relevant with regard to labour mobility issues.

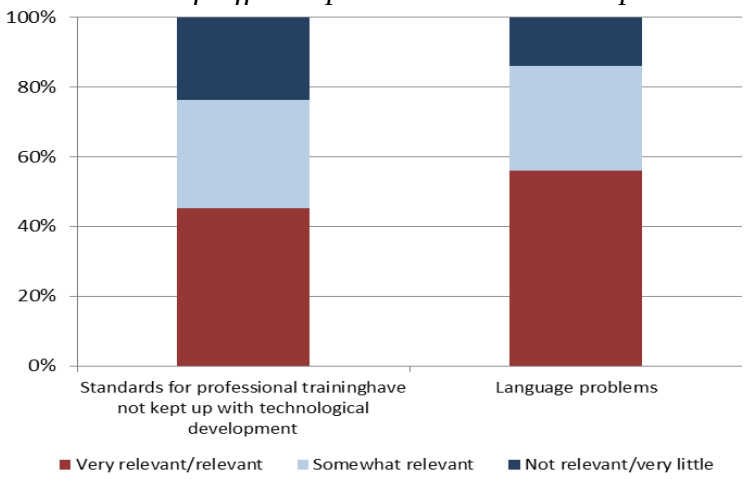
3.3. Safety problem: Overall perception of relevance of different problem drivers

This section presents the overall perception of all stakeholders of the relative importance of different problem drivers to the problem of safety. In order to do this, the responses "relevant" and "very relevant" were aggregated. Responses by type of stakeholder are found in the following section 3.4.

As shown in *Figure 14*, language problems caused by crew members of different nationalities resulting in communication problems is, in relative terms, considered the aspect contributing the most to the problem of safety (85% of the respondents considering it either highly relevant

or somewhat relevant). Around 76% of all respondents find that the standards for professional training in inland navigation which are set at national level have not kept up with technological development, making it a highly relevant or somewhat relevant problem driver.

Figure 14. Relevance of different problem drivers to the problem of safety

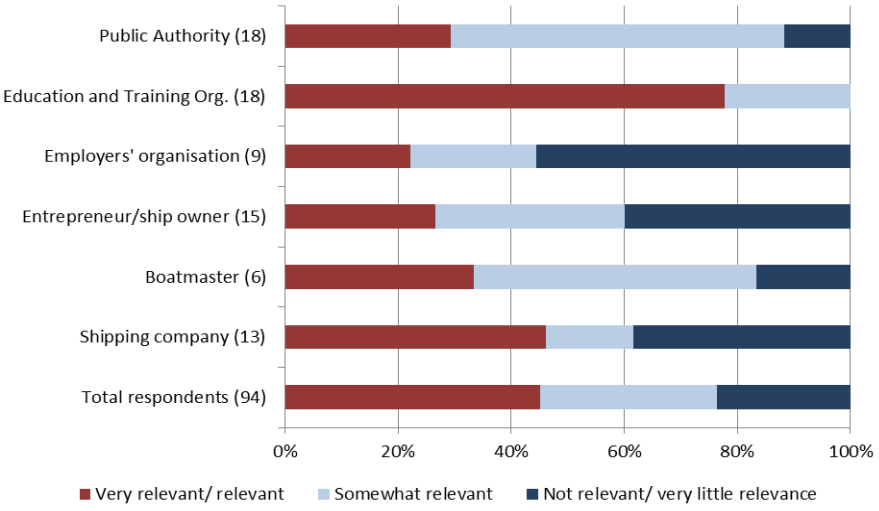


3.4. Relevance of problem drivers by type of stakeholder

3.4.1. Problem driver 1: The standards for professional training in inland navigation which are set at national level have not kept up with technological development

The importance of this problem driver is perceived by the different groups of stakeholders as relatively lower with respect to others, with the exception of education and training organisations, with 78% of its respondents rating it as "relevant" or "very relevant". Despite this, more than 60% of the respondents of each group of stakeholders consider it, at least, "somewhat important", reaching 83% in the case of public authorities and boatmasters. Employers' organisations and entrepreneurs/ship owners are the groups that consider it less important, in relative terms.

Figure 15. Relevance of problem driver 1 (standards for professional training have not kept up with technological development) by type of stakeholder

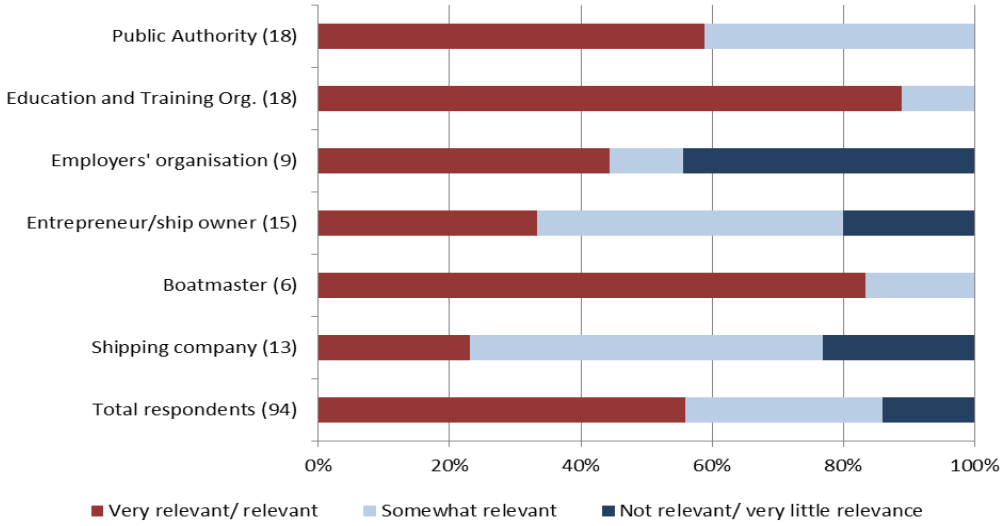


The river commission and the worker's organisation that contributed to the public consultation rated this problem driver as highly relevant, whereas the responses of the four ports range from "somewhat relevant" to "very relevant". In total, 75% of the respondents consider language problems as somewhat relevant to very relevant with regard to safety issues.

3.4.2. Problem driver 2: Language problems caused by crew members of different nationalities, resulting in communication problems

The perception of the importance of language problems for safety differs between groups of stakeholders. Whereas education and training organisations and boatmasters rate it as highly relevant (89% and 83% respectively), shipping companies and entrepreneurs/ship owners find it relatively less relevant. Despite this, almost 80% of both groups consider it either highly relevant or somewhat relevant. As shown in *Figure 16*, the opinion of employers' organisations is the most polarized.

Figure 16. Relevance of problem driver 2 (language problems) by type of stakeholder



The river commission and the worker's organisation that contributed to the public consultation rated this problem driver as highly relevant.

4. Assessment of policy objectives

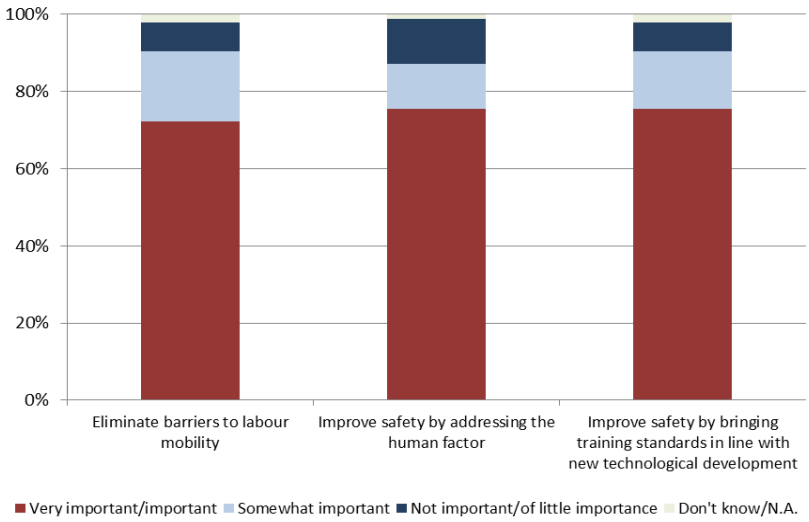
In this section of the public consultation, the Commission sought to identify the degree to which Member States and stakeholders agree with the proposed objectives of the future initiative.

4.1. Overall perception of relevance of different policy objectives

This section presents the overall perception of all stakeholders of the relative importance of different policy objectives of the future initiative regarding the recognition and modernisation of professional qualifications in inland navigation. Responses by type of stakeholder are found in section 4.2. As shown in *Figure 17*, the three policy objectives (eliminate barriers to

labour mobility and improve safety both by addressing the human factor and by bringing training standards in line with new technological development) are considered equally relevant, with around 75% of respondents considering them "very important" or "important". Overall, less than 10% of respondents consider the different policy objectives as not important.

Figure 17. Relevance of different policy objectives

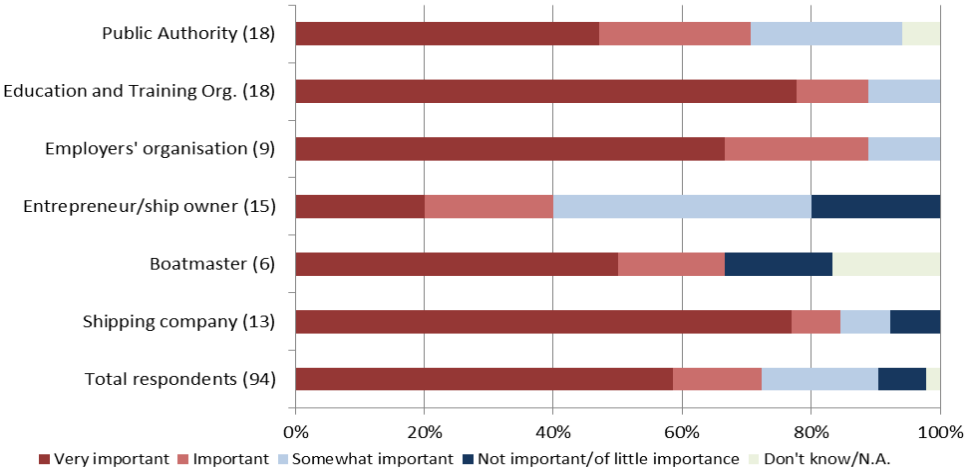


4.2. Relevance of policy objectives by type of stakeholder

4.2.1. Policy objective 1: Eliminate barriers to labour mobility

An important percentage of education and training organisations (89%), employers' organisations (89%), shipping companies (84%), public authorities (71%) and boatmasters (67%) consider this policy objective as "very important" or "important". Entrepreneurs/ship owners present a more dispersed opinion, with 40% of them considering it "somewhat important" and 20% of them stating that it is not an important objective.

Figure 18. Relevance of policy objective 1 by type of stakeholder

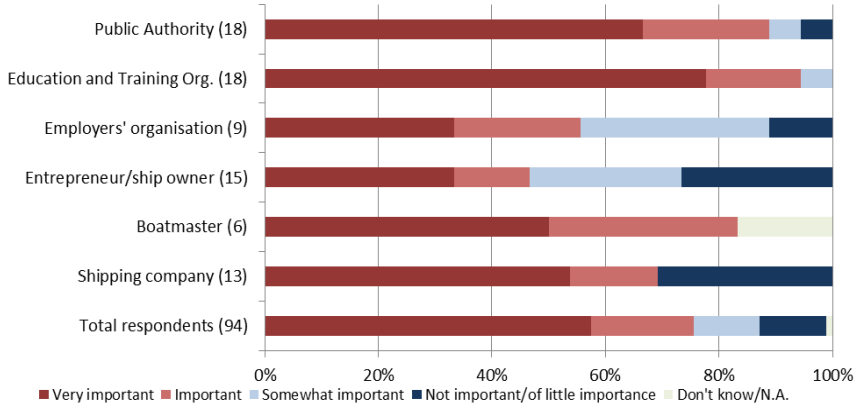


The river commission and the worker's organisation that contributed to the public consultation rated this policy objective as "very important", whereas the responses of the four ports range from "somewhat important" to "very important". As shown in *Figure 18*, the overall support to this policy objective is very high, with only 7% of total respondents considering it not important.

4.2.2. Policy objective 2: Improve safety in the IWT sector by addressing the human factor

With regards to policy objective 2, responses differ considerably between groups of stakeholders. Education and training organisations and public authorities consider that addressing the human factor to improve safety is a highly important objective (with 94% and 89% of them, respectively, stating that it is "very important" or "important"). The groups that in relative terms consider this objective as less important are entrepreneurs/ship owners and employers' organisations.

Figure 19. Relevance of policy objective 2 by type of stakeholder

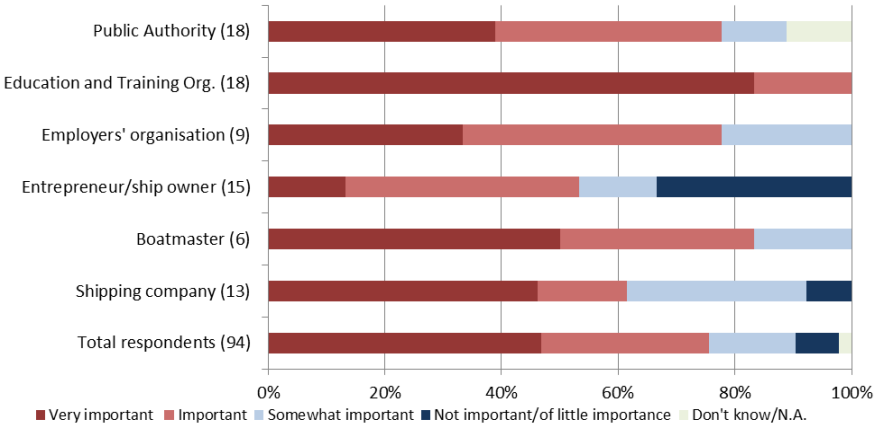


The river commission and the worker's organisation that contributed to the public consultation rated this policy objective as very important, whereas the responses of the four ports range from "somewhat important" to "very important".

4.2.3. Policy objective 3: Improve safety in the IWT sector by bringing training standards in line with new technological development

As shown in *Figure 20*, the support to this policy objective is high in almost all groups of stakeholders, with only 7% of total respondents considering it not important. All education and training organisations participating in the public consultation consider it either "very important" or "important", whereas the percentages are of 83% in the case of boatmasters and of 78% in the case of public authorities and employers' organisations. Moreover, more than 50% of entrepreneurs/ship owners and shipping companies find it highly relevant, a percentage that increases notably if responses "somewhat relevant" are also aggregated.

Figure 20. Relevance of policy objective 3 by type of stakeholder



The worker's organisation that contributed to the public consultation rated this policy objective as "very important", the river commission considers it "important" and the responses of the four ports range from "somewhat important" to "very important".

5. Assessment of policy options

The European Commission has identified a number of possible policy measures that may address the problem areas referred to above. The results presented in this section reflect the opinions of the different stakeholders with regards to the suitability of the different measures.

PROBLEM OF RESTRICTED LABOUR MOBILITY
Problem driver 1: Different requirements for professional qualifications of workers within the inland navigation sector
Policy measure 1: Extension of the CCNR initiated process of mutual recognition of boatmaster certificates by establishing a mechanism for mutual recognition of professional qualifications in SRBs
Policy measure 2: Introduction of mandatory harmonised requirements for age and physical and mental fitness for all crew members
Policy measure 3: Harmonisation of definitions of certain professional qualifications in inland navigation and mandatory harmonised requirements for these qualifications
Policy measure 4: Harmonised EU minimum training standards for professional qualifications in IWT
Policy measure 5: Introduction at EU level of a central register for EU boatmaster certificates
Policy measure 6: Introduction of voluntary measures from the inland navigation sector towards lowering labour mobility obstacles
Problem driver 2: Different requirements for professional qualifications for workers from outside the sector
Policy measure 7: Introduction of a common method for lowering the barriers for maritime sailing time/experience to qualify as inland navigation sailing time/experience
Problem driver 3: LKRs potentially preventing boatmasters to operate on a certain stretch of a river
Policy measure 8: Introduction of mandatory common criteria for establishing LKRs in the EU
Policy measure 9: Harmonisation of competency/examination requirements for LKRs

Policy measure 10: Introduction of non-binding recommendations regarding criteria for establishing LKRs in the EU
Policy measure 11: Introduction of non-binding recommendations regarding criteria for examination requirements for LKRs
Problem driver 4: Difficulty of extracting reliable information from SRBs needed for workers to prove their professional qualifications in order to allow operating in another country or other river basin
Policy measure 12: Introduction of a mandatory electronic SRB and a central register for e-SRB
Problem driver 5: Language problems preventing crew members of a different nationality to perform duties on vessels sailing on the EU inland waterways
Policy measure 13: Introduction of River Speak

PROBLEM OF SAFETY
Problem driver 1: Standards for professional training in inland navigation have not kept up with technological development
Policy measure 14: Harmonisation at EU level of minimum training standards for all professional qualifications in inland navigation
Policy measure 15: Introduction of voluntary measures from the inland navigation sector towards improving safety
Problem driver 2: Language problems, caused by crew members of different nationalities, resulting in communication problems
Policy measure 13: Introduction of River Speak

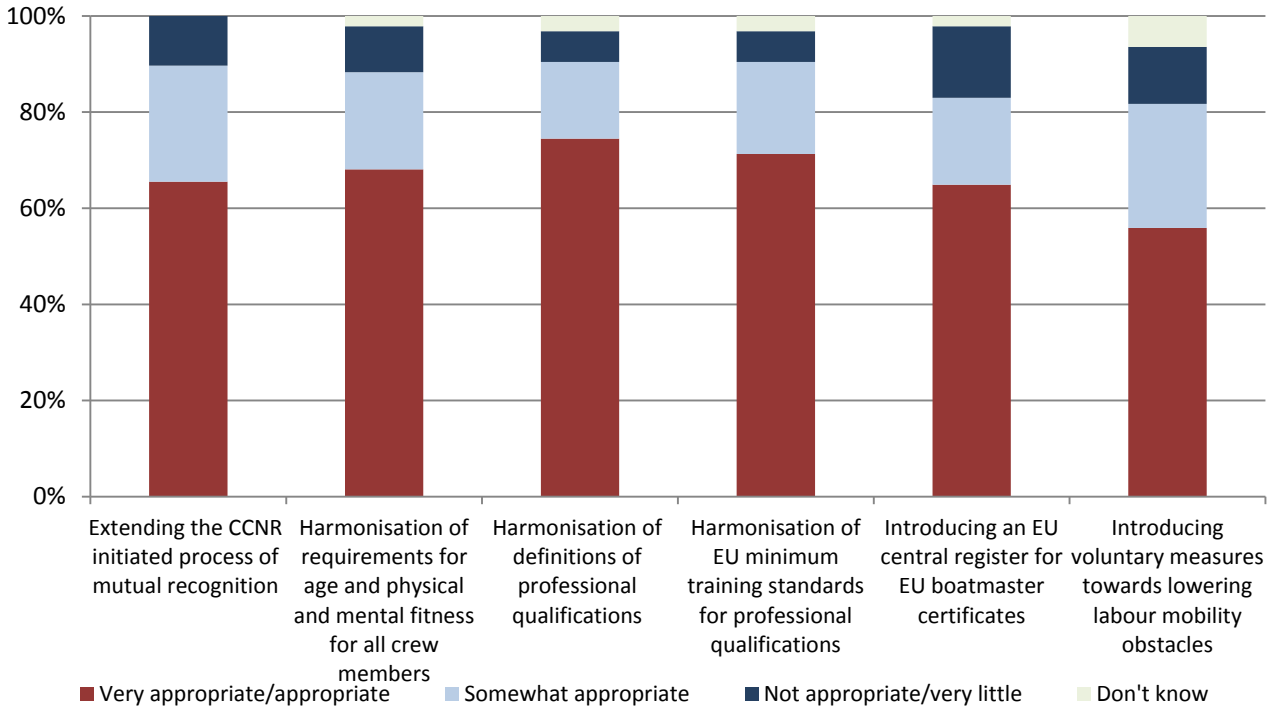
PROBLEM OF RESTRICTED LABOUR MOBILITY

5.1 Overall perception of relevance of different policy measures to deal with the problem of restricted labour mobility due to different requirements for professional qualifications of workers within the inland navigation sector

This section presents the overall perception of the relative suitability of different policy measures to deal with the problem of restricted labour mobility. It is important to note that these are the aggregated responses of all stakeholders. Disaggregation by type of stakeholder is found in section 5.2.

As shown in *Figure 21*, the harmonisation of definitions for certain professional qualifications in inland navigation and mandatory harmonized requirements for these qualifications (74%) and the harmonisation of EU minimum training standards for professional qualifications in inland navigation (71%) are, in relative terms, considered the most adequate policy measures, followed by the mandatory harmonisation of requirements for age and physical and mental fitness (68%). Introducing voluntary measures from the inland navigation sector towards lowering labour mobility obstacles is considered the least adequate policy measure in relative terms by all stakeholders (56%), followed by the measure of extending the CCNR initiated process of mutual recognition of boatmaster certificates by establishing a mechanism for mutual recognition of professional qualifications in Service Record Books (60%). It is important to note that less than 10% of respondents find these policy measures as not appropriate, with the exception of the introduction of an EU central register (15%). Therefore, there is an overall high support to these measures.

Figure 21. Relevance of different policy measures to deal with the problem of restricted labour mobility due to different requirements for professional qualifications of workers within the inland navigation sector



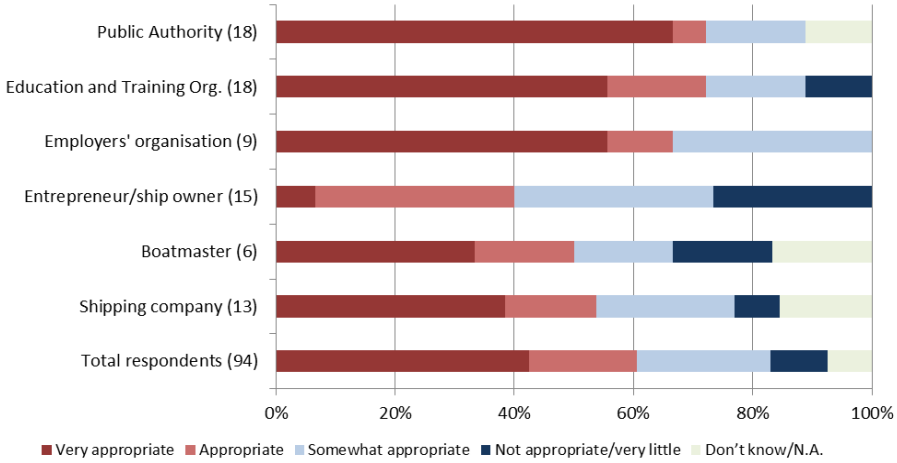
5.2. Relevance of policy measures to deal with the problem of restricted labour mobility due to different requirements for professional qualifications of workers within the inland navigation sector, by type of stakeholder

5.2.1. Policy measure 1: Extending the CCNR initiated process of mutual recognition of boatmaster certificates by establishing a mechanism for mutual recognition of professional qualifications in Service Record Books

As shown in *Figure 22*, extending the CCNR initiated process of mutual recognition would be considered "very adequate" or "adequate" by 72% of public authorities and education and training organisations and by 67% of employers' organisations that responded to the public

consultation. At the same time, the responses of around 70% of entrepreneurs/ship owners, shipping companies and boatmasters range between "very appropriate" and "somewhat appropriate". Entrepreneurs/ship owners are the group that register more "not appropriate" responses.

Figure 22. Relevance of policy measure 1 by type of stakeholder

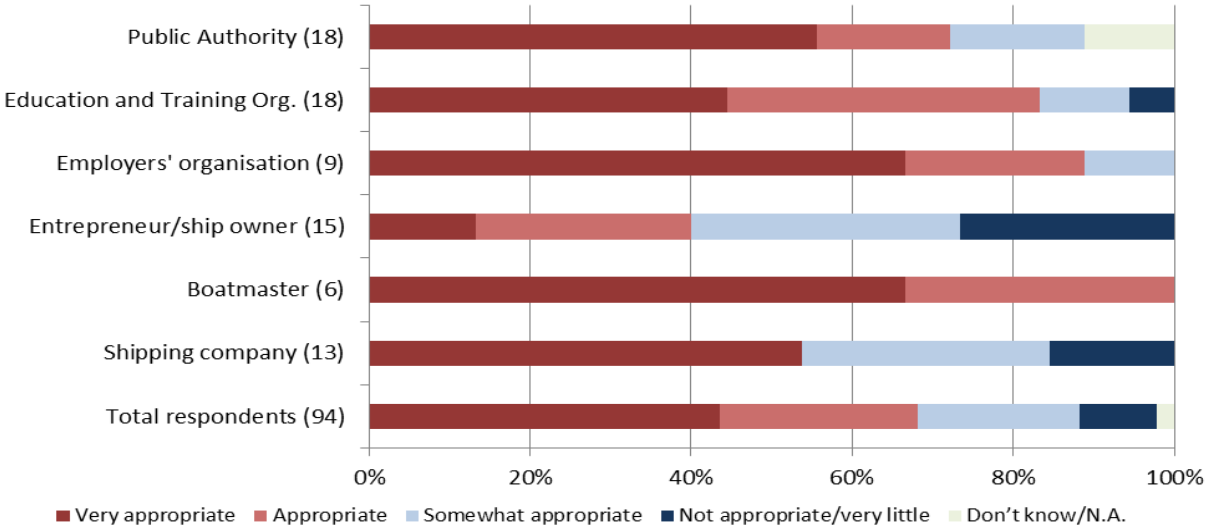


The workers' organisation that contributed to the public consultation rated this policy measure as "very appropriate", the river commission rates it "somewhat appropriate" and the responses of the four ports range between "very appropriate" and "somewhat appropriate".

5.2.2. Policy measure 2: Mandatory harmonised requirements for age and physical and mental fitness for all crew members

All boatmasters, 88% of employers' organisations, 83% of education and training organisations and 72% of public authorities that answered to the public consultation consider that this policy measure would be "appropriate" or "very appropriate" to deal with the problem of labour mobility. The percentages are lower for the other types of stakeholders, in particular for entrepreneurs/ship owners (40%). Despite this, it is important to note that 85% of shipping companies and 73% of entrepreneurs/ship owners consider it, at least, "somewhat appropriate".

Figure 23. Relevance of policy measure 2 by type of stakeholder



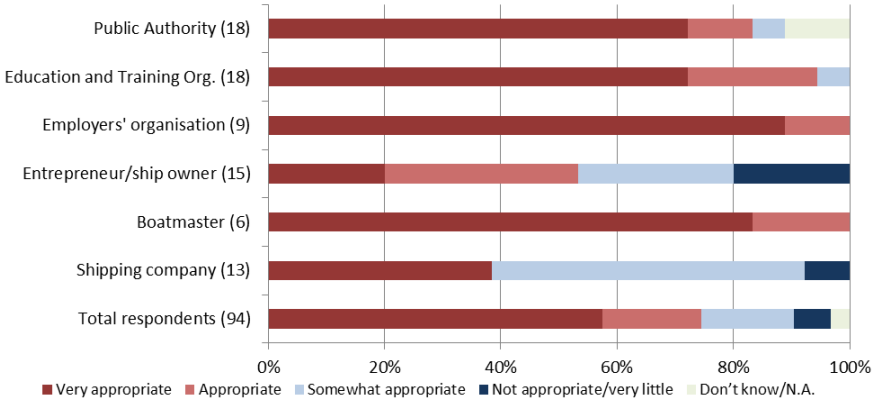
The river commission contributing to the public consultation rated this policy measure as "appropriate", whereas the workers' organisation considers it "somewhat appropriate".

5.2.3. Policy measure 3: Harmonisation of definitions of certain professional qualifications in inland navigation and mandatory harmonised requirements for these qualifications

This measure is considered "very appropriate" or "appropriate" by all employers' organisations and boatmasters that contributed to the public consultation, and by a high percentage of education and training organisations (94%), and public authorities (83%). The majority of shipping companies consider it "somewhat appropriate" (53%), whereas the opinion of entrepreneurs/ship owners is more divided. Moreover, the river commission and the worker's organisation contributing to the public consultation rated this policy measure as "very appropriate".

When asked for which crew members they consider that policy measures 2 and 3 would be most appropriate, **60% of respondents said that they should apply to boatmasters and other crew members**, whereas 24% answered they should only apply to boatmasters.

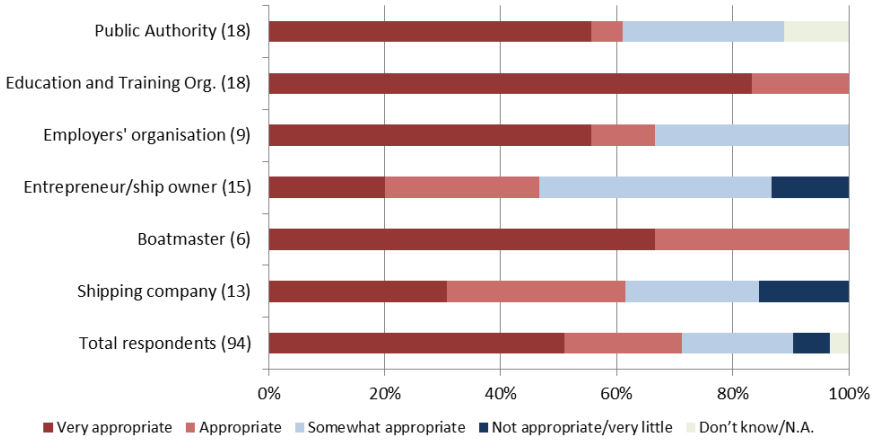
Figure 24. Relevance of policy measure 3 by type of stakeholder



5.2.4. Policy measure 4: Harmonised EU minimum training standards for professional qualifications in inland navigation

Harmonising the EU minimum training standards for professional qualifications in inland navigation is considered a highly appropriate policy measure by all education and training organisations and by all boatmasters that contributed to the public consultation, as well as by 67% of employers' organisations, 61% of shipping companies and 61% of public authorities. The opinion of entrepreneurs/ship owners is more divided, but only 13% consider it not appropriate. It is important to note that more than 90% of all respondents consider this policy measure at least "somewhat appropriate".

Figure 25. Relevance of policy measure 4 by type of stakeholder



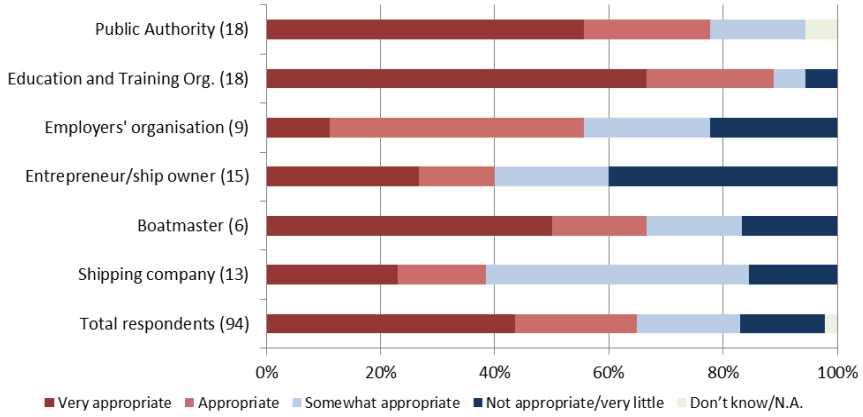
The river commission and the worker's organisation that contributed to the public consultation rated this policy measure as "very appropriate", whereas the four ports consider it either "appropriate" or "very appropriate".

When asked about which crew members they consider that this policy measure would be most appropriate, **61% of respondents stated that it should apply to boatmasters and other crew members**, whereas 28% answered it should only apply to boatmasters.

5.2.5. Policy measure 5: Introducing at EU level of a central register for EU boatmaster certificates

Introducing a central register for EU boatmaster certificate is perceived by the majority of education and training organisations and by public authorities that participated in the public consultation as highly appropriate (with 89% and 78% of their respondents considering it "very appropriate" or "appropriate", respectively), followed by boatmasters (67%). Around 40% of shipping companies and entrepreneurs/ship owners consider it highly appropriate, and the percentage increases notably when "somewhat appropriate" is also taken into account.

Figure 26. Relevance of policy measure 5 by type of stakeholder

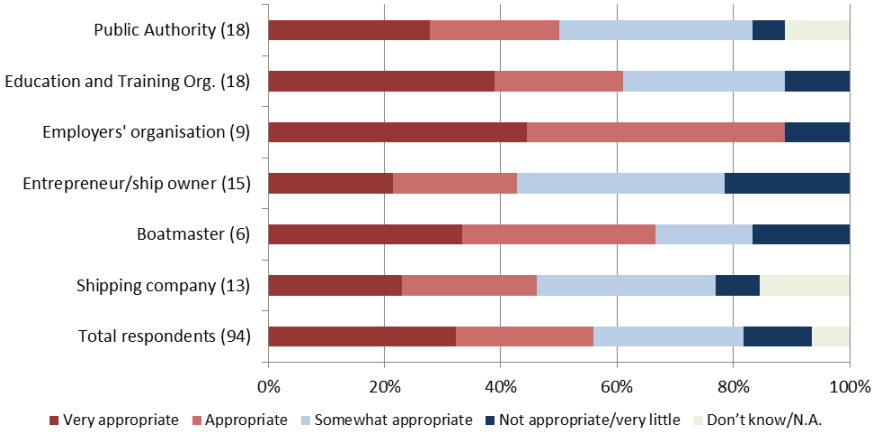


The river commission and the worker's organisation that contributed to the public consultation rated this policy measure as "very appropriate", whereas the four ports consider it either "appropriate" or "very appropriate".

5.2.6. Policy measure 6: Introducing voluntary measures from the inland navigation sector towards lowering labour mobility obstacles

As shown in *Figure 27*, approximately 80% of respondents of all groups of stakeholders consider this policy measure, at least, "somehow appropriate". The groups that register higher percentage of highly appropriate responses are employers' organisations, with 89% of respondents considering the measure as either "very appropriate" or "appropriate", boatmasters (67%) and education and training organisations (61%). The workers' organisation that contributed to the public consultation rated this policy measure as "very appropriate", the river commission considers it "somewhat appropriate" and the responses of the four ports range between "very appropriate" and "somewhat appropriate".

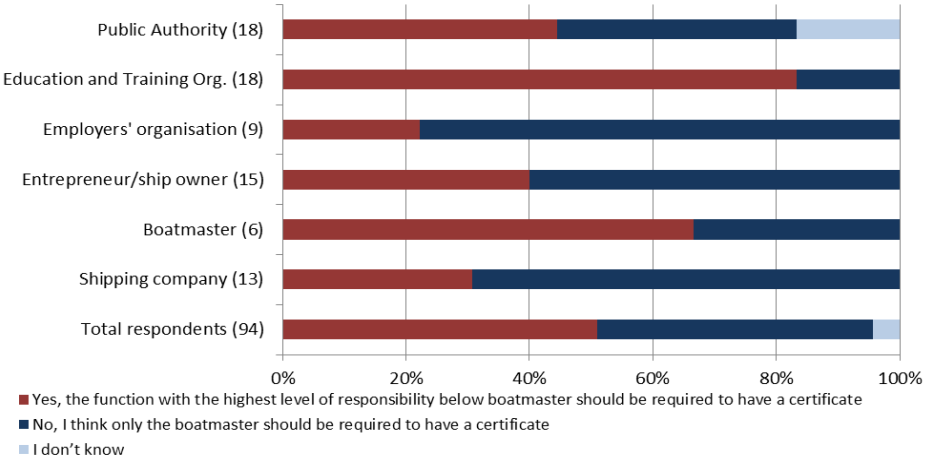
Figure 27. Relevance of policy measure 6 by type of stakeholder



5.2.7. Additional issues: certification of professional qualification

Stakeholders were invited to comment on a number of aspects related to the policy measures previously presented. In particular, this section presents the answers given to questions related to the system of certification of professional qualifications for boatmasters. One of these questions was: "Do you think it is necessary to extend the requirement for certification also to the highest rank under the level of boatmaster?" Responses differ substantially by type of stakeholder (see graph below). While the majority of respondents from education and training organisations gave a positive response (83%), followed by boatmasters (67%), the majority of respondents of other groups of stakeholders consider that only boatmasters should be required to have a certificate, in particular employers' organisations (78%), shipping companies (70%) and entrepreneurs/ship owners (60%).

Figure 28. Extension of certification to the highest rank of responsibility below boatmasters



Stakeholders were also asked about the appropriateness of introducing a modular certification system for boatmasters, which would imply the introduction of specific requirements for certificates with regard to waterways on maritime character, operation of only small vessels on small waterways, and operation of large convoys. *Figure 29* presents the stakeholders' responses. In this case, more than one answer was allowed. Half of the respondents considers that such a modular system should maintain the current specific requirements for boatmasters that operate on waterways of maritime character, 42% of them consider that the modular system should introduce specific more stringent requirements for boatmasters operating large convoys, and 39% of them consider that it should introduce less stringent requirements for boatmasters operating in small vessels on small waterways.

Figure 29. Differentiation of boatmasters certificates

	Number	% of respondents
Yes, such a modular system should maintain the current specific (more stringent) requirements for boatmasters that operate on **waterways of maritime character**	47	50%
Yes, such a modular system should introduce specific (less stringent) requirements for boatmasters that operate **small vessels on small waterways only**	37	39.4%

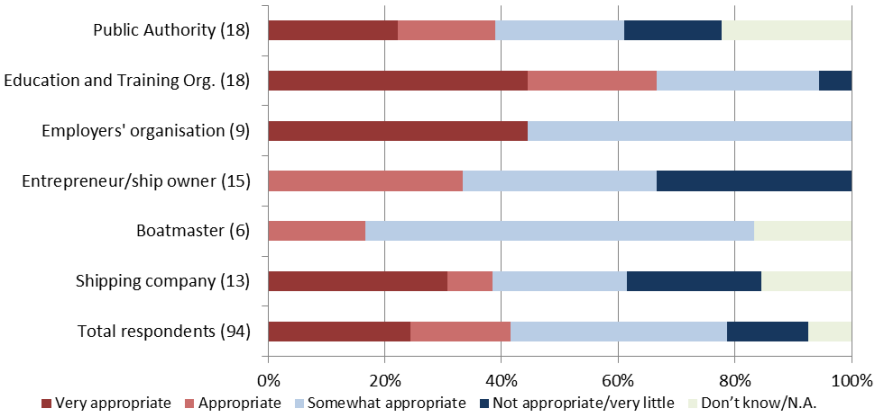
Yes, such a modular system should introduce specific (more stringent) requirements for boatmasters that operate **large passenger vessels**	33	35.1%
Yes, such a modular system should introduce specific (more stringent) requirements for boatmasters that operate **large convoys**	39	41.5%
Yes, such a modular system is important and **other categories need to be considered**	16	17%
No, there is **no need for such a differentiated approach**	12	12.8%
I don't know	11	11.7%
Total	**195**	**-**

5.3. Relevance of policy measure 7 ("Introduction of a common method for lowering the barriers for maritime sailing time/experience to qualify as inland navigation sailing time/experience") to deal with the problem of restricted labour mobility due to different requirements for professional qualifications for workers from outside the sector

The majority of stakeholders answering to this public consultation find this policy measure at least somewhat appropriate. 67% of education and training organisations and 44% of employers' organisations find it either "very appropriate" or "appropriate", whereas boatmasters are the group of stakeholders presenting a lower percentage of these responses. Nevertheless, it is important to note that more 80% of them consider it at least somewhat appropriate. Public authorities, entrepreneurs/ship owners and shipping companies are considerably divided in their responses. Additionally, the workers' organisation, the river commission and two of the four ports contributing to this public consultation rate this policy measure as "somewhat appropriate".

When asked about which crew members they consider that this policy measure would be most appropriate, **53% of respondents said that it should apply to boatmasters and other crew members**, 17% answered it should only apply to boatmasters, and 17% answered that answered it should only apply to other crew members.

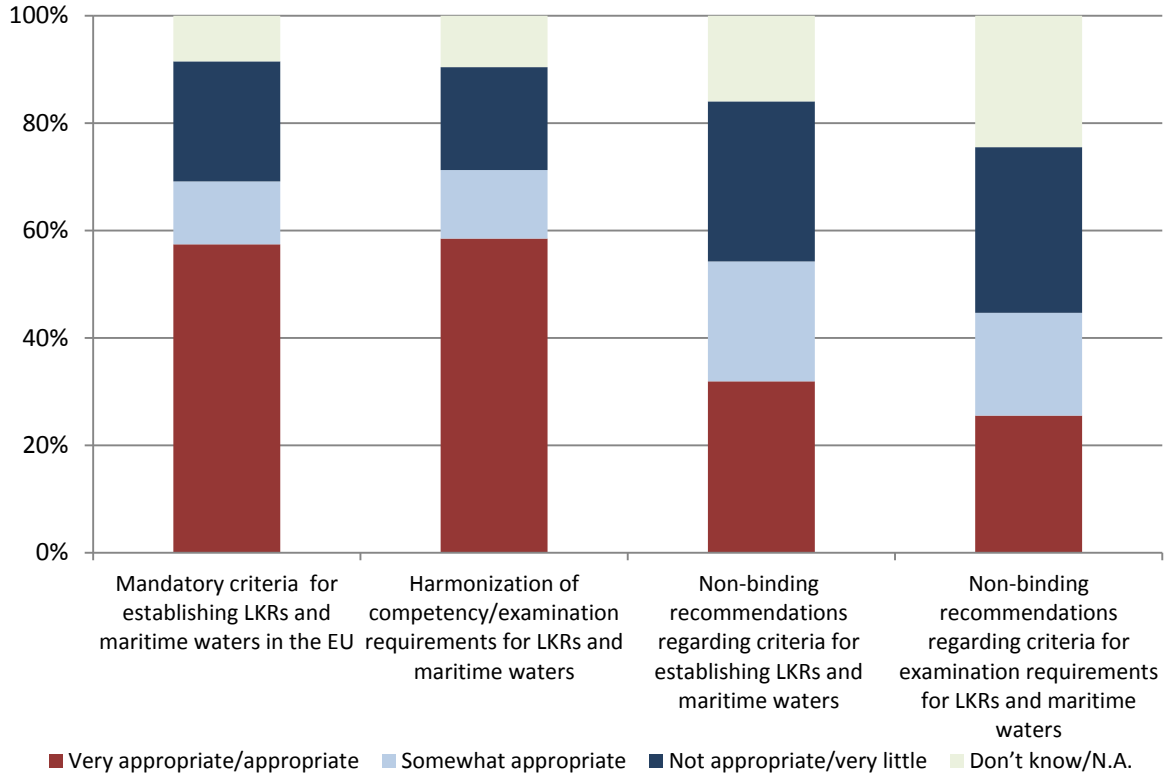
Figure 30. Relevance of policy measure 7 by type of stakeholder



5.4. Overall perception of relevance of different policy measures to deal with the problem of restricted labour mobility due to LKRs potentially preventing boatmasters to operate on a certain stretch of a river

This section presents the overall perception of all respondents of the relative suitability of different policy measures to deal with the problem of restricted labour mobility due to local knowledge requirements. As shown in *Figure 31*, the harmonisation of competency/examination requirements (59%) and the establishment of mandatory common criteria for establishing LKRs in the EU (57%) are, in relative terms, considered the most adequate policy measures. The two remaining measures implying non-binding recommendations are perceived as relatively less appropriate.

Figure 31. Relevance of different policy measures to deal with the problem of restricted labour mobility due to LKRs potentially preventing boatmasters to operate on a certain stretch of a river



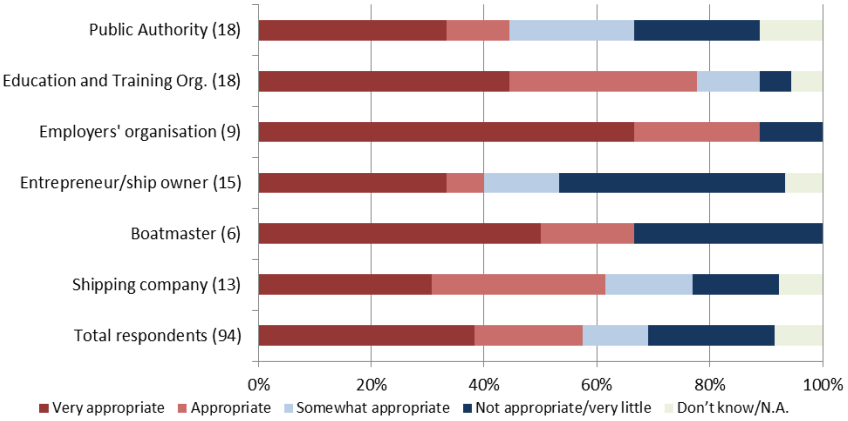
53% of the respondents consider that the **use of simulators** in training programmes or exams could lead to a reduction of training or experience requirements for LKRs, whereas 37% of respondents do not agree with the previous statement.

5.5. Relevance of policy measures to deal with the problem of restricted labour mobility due to LKRs potentially preventing boatmasters to operate on a certain stretch of a river, by stakeholder

5.5.1. Policy measure 8: Mandatory common criteria for establishing LKRs in the EU

This policy measure is considered highly appropriate by the majority of employers' organisations (89% of them rating it either "very appropriate" or "appropriate"), education and training organisations (78%), boatmasters (67%) and shipping companies (62%), whereas it receives lower support from entrepreneurs/ship owners (40%) and public authorities (44%). However, more that 50% of them rate this policy measure at least "somewhat appropriate". Additionally, the river commission contributing to this public consultation considers this measure as "very appropriate".

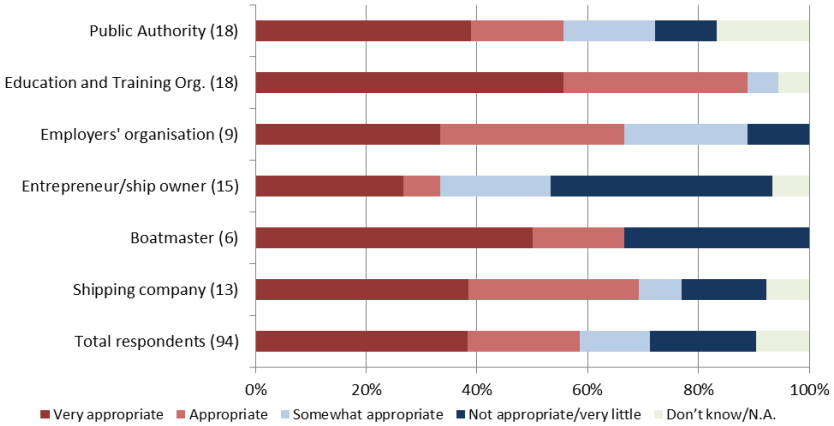
Figure 32. Relevance of policy measure 8 by type of stakeholder



5.5.2. Policy measure 9: Harmonisation of competency/examination requirements for LKR

As shown in *Figure 33*, the distribution of opinions about the appropriateness of this policy measure varies by type of stakeholder. The majority of education and training organisations consider it highly appropriate (89%), followed by shipping companies (69%), boatmasters (67%), employers' organisations (67%) and public authorities (56%). Even though 40% of entrepreneurs/ship owners find it "not appropriate", it should be noted that 53% of their respondents consider the measure at least "somewhat appropriate". The river commission contributing to this public consultation considers this policy measure as "very appropriate".

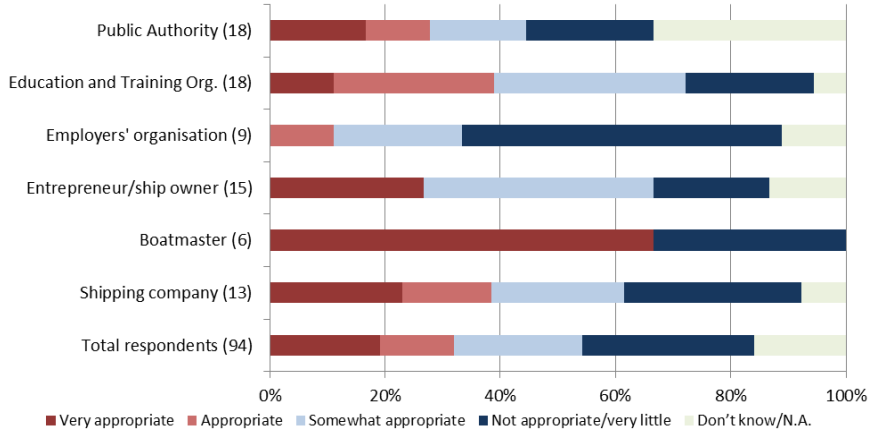
Figure 33. Relevance of policy measure 9 by type of stakeholder



5.5.3. Policy measure 10: Non-binding recommendations regarding criteria for establishing LKRs in the EU

In general, this policy measure receives low support by the different groups of stakeholders, with the only exception of boatmasters. As shown in *Figure 34*, most of the other groups of stakeholders consider this policy measure as either "not appropriate" or only "somewhat appropriate".

Figure 34. Relevance of policy measure 10 by type of stakeholder

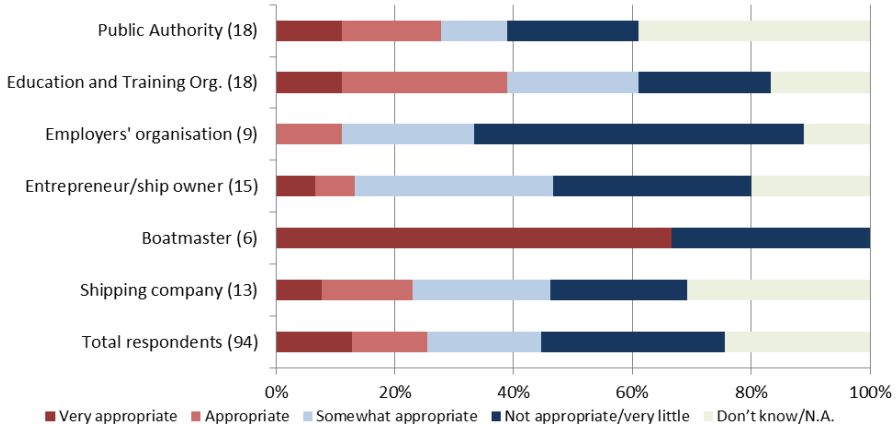


The river commission and two of the four ports contributing to this public consultation consider this policy measure as "not appropriate", whereas the other two ports and the workers' organisation did not provide an answer.

5.5.4. Policy measure 11: Non-binding recommendations regarding criteria for examination requirements for LKR

Similarly to the previous measure, the establishment of non-binding recommendations regarding criteria for examination requirements for LKR is in general not considered an appropriate measure to deal with the problem of restricted labour mobility. This policy measure registers the lowest support among stakeholders, with the only exception of boatmasters. The river commission and two of the four ports contributing to this public consultation consider this policy measure as "not appropriate". The other two ports and the workers' organisation do no provide an answer.

Figure 35. Relevance of policy measure 11 by type of stakeholder

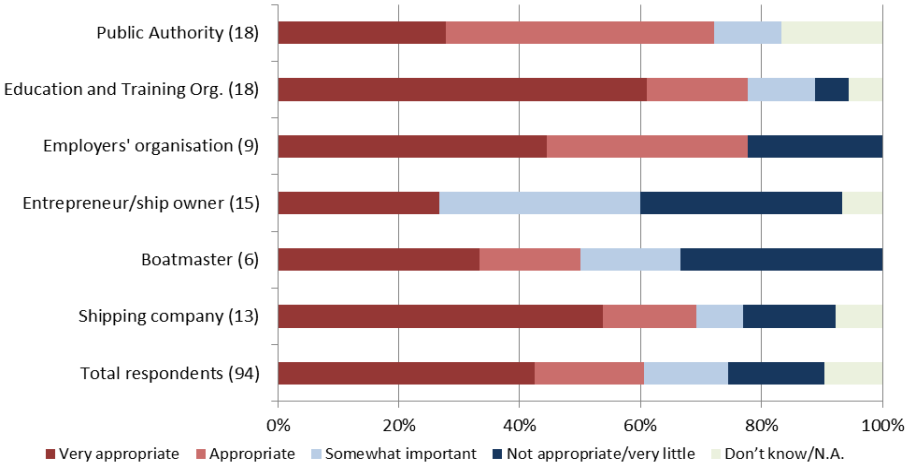


When asked whether the **information provided by River Information Services** could replace in certain cases the need for local knowledge requirements, 52% of the respondents answered "yes, sometimes", 22% answered "never", and 18% answered "yes, always".

5.6. Relevance of policy measure 12 ("Introduce a mandatory electronic SRB and a central register for e-SRB") to deal with the difficulty of extracting reliable information from SRBs needed for workers to prove their professional qualifications, by stakeholder

Introducing a mandatory electronic SRB is considered appropriate by 78% of education and training organisations, 78% of employers' organisations and 72% of public authorities. Despite registering a lower percentage of "very appropriate" and "appropriate" responses than the previously mentioned groups, more than 60% of shipping companies, boatmasters and entrepreneurs/ship owners consider it at least "somewhat appropriate". The specific distribution of responses is shown in *Figure 36*.

Figure 36. Relevance of policy measure 12 by type of stakeholder

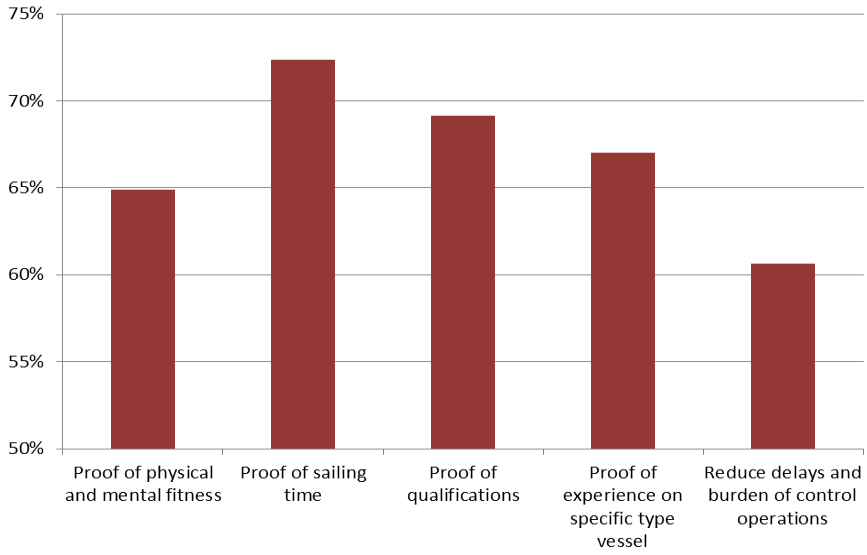


The workers' organisation participating to this public consultation consider this policy measure "very appropriate", whereas the river commission rates it as "very appropriate".

When asked about which crew members they consider that this policy measure would be most appropriate for, **52% of respondents answered boatmasters and other crew members**, 16% answered only boatmasters and 16% answered only other crew members. When asked whether they think that introducing electronic SRBs would be beneficial for inland navigation, 74% of the stakeholders responded positively. Furthermore, 64% of the respondents consider that the introduction of electronic SRBs should be accompanied by the introduction of **electronic logbooks** (for instance to verify entries made in the e-SRB with regard to sailing time).

Stakeholders where additionally asked for what purposes would the e-SRB be used. *Figure 37* below shows the percentage of total stakeholders that stated that they "totally agree" or "tend to agree".

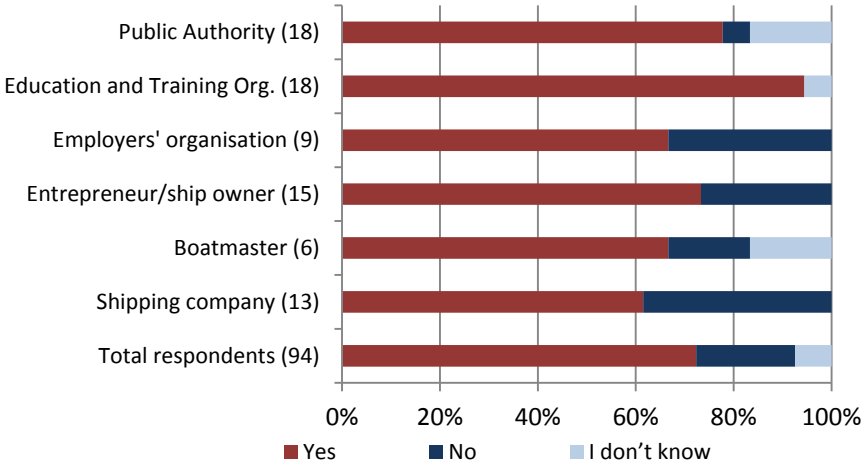
Figure 37. Use of the e-SRBs



5.7. Relevance of policy measure 13 ("Introduction of River Speak") to deal with the problem of restricted labour mobility derived from language problems

The introduction of River Speak or other language-neutral means of communication in the training programmes and as a part of professional qualifications is considered by 72% of stakeholders contributing to the public consultation as a measure that could help addressing the problem of mobility of IWT workers. As shown in *Figure 38*, education and training organisations are the group that presents a higher support to this measure (94%), followed by public authorities (78%) and entrepreneurs/ship owners (73%). 60% of shipping companies rate the measure as relevant to improve labour mobility, despite being the group that gives the lowest support to the measure, in relative terms. The river commission and the workers' organisation that participated in the public consultation also consider this measure as very appropriate.

Figure 38. Relevance of policy measure 13 to deal with the problem of mobility, by type of stakeholder

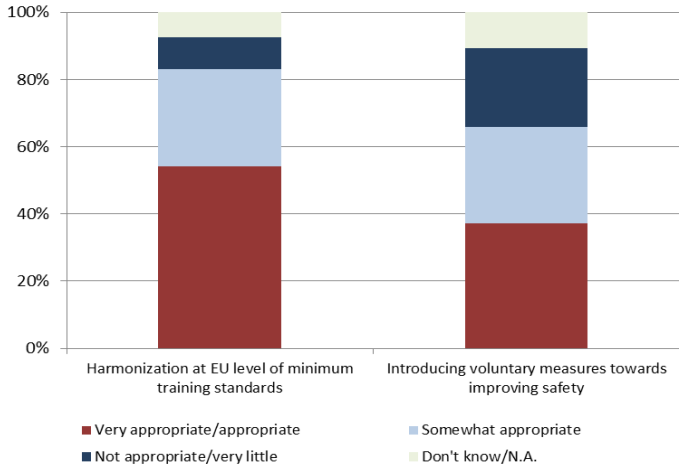


PROBLEM OF SAFETY

5.8 Overall perception of relevance of different policy measures to deal with the safety problem related to the fact that the standards for professional training in inland navigation have not kept up with technological development

This section presents the relative importance of different policy measures to the problem of safety, as results from the responses of all the stakeholders participating in the public consultation. Responses by type of stakeholder are found in the following section 5.8. As shown in *Figure 39*, the harmonisation at EU level of minimum training standards for all professional qualifications in inland navigation is in relative terms considered more appropriate to deal with safety problems than introducing voluntary measures (83% of respondents consider harmonisation "somewhat appropriate", "appropriate" or "very appropriate", versus 66% in the case of voluntary measures). Only 10% considers the harmonisation measures as not appropriate, whereas this figure rises up to 23% for the voluntary measures.

Figure 39. Relevance of policy measures to deal with the safety problem related to the fact that standards for professional training have not kept up with technological development



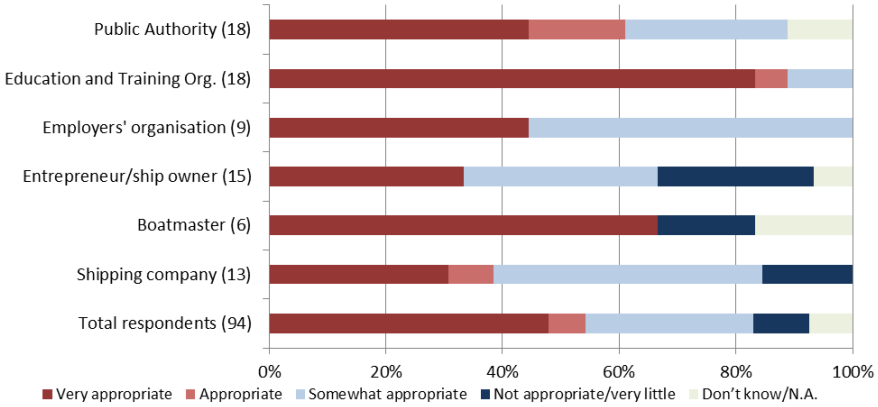
Stakeholders were asked whether the **use of simulators** in inland navigation training and education programmes would increase safety in the sector. The majority of respondents (84%) answered positively.

5.9. Relevance of policy measures to deal with the safety problem related to the fact that the standards for professional training in inland navigation have not kept up with technological development, by type of stakeholder

5.9.1. Policy measure 14: Harmonisation at EU level of minimum training standards for all professional qualifications in inland navigation

The distribution of responses with regards to the appropriateness of this policy measure differs notably by group of stakeholder. Approximately 90% of education and training organisations consider it highly appropriate, followed by 67% of boatmasters and 61% of public authorities. At the same time, employers' organisations, shipping companies and entrepreneurs/ship owners present a higher percentage of "somewhat important" responses.

Figure 40. Relevance of policy measure 14 by type of stakeholder



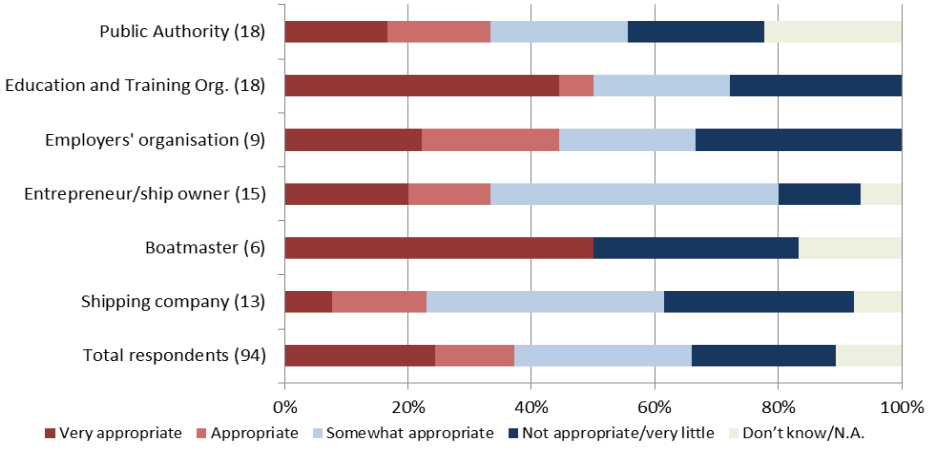
The river commission contributing to this public consultation considers that this policy measure is "very appropriate", whereas the workers' organisation finds it "appropriate". The opinion of ports is highly dispersed in this case. It is important to note that, in general, more than 80% of respondents find this policy measure, at least, "somewhat important".

When asked for which crew members you consider that this policy measure would be the most appropriate, **71% of respondents answered boatmasters and other crew members**, whereas 17% stated only boatmasters.

5.9.2. Policy measure 15: Introducing voluntary measures from the inland navigation sector towards improving safety

The perception of the appropriateness of this measure to deal with the problem of safety is comparatively more dispersed than in previous cases. The majority of respondents of all groups of stakeholders perceive this measure as at least "somewhat appropriate". Education and training organisations and boatmasters are the groups registering a higher percentage of "very appropriate" or "appropriate" responses, with 50% of the respondents in each case.

Figure 41. Relevance of policy measure 15 by type of stakeholder

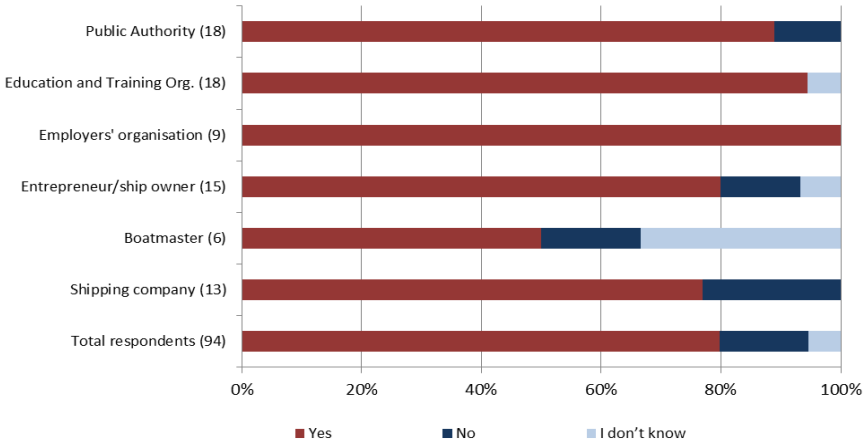


The river commission participating in this public consultation considers that this policy measure is "somewhat appropriate".

5.10. Relevance of policy measure 13 ("Introduction of River Speak") to deal with the safety problem derived from language problems

Around 80% of the respondents consider that the introduction of River Speak or other language-neutral means of communication in the training programmes and as a part of professional qualifications would help improving the levels of safety in the sector. As shown in *Figure 42*, all employers' organisations that participated in this public consultation give support to this measure, followed by 94% of education and training organisations, 89% of public authorities, 80% of entrepreneurs/ship owners and 77% of shipping companies. The workers' organisation and the river commission participating in this public consultation also have a positive opinion on this measure.

Figure 42. Relevance of policy measure 13 to deal with problem of safety, by type of stakeholder



6. Regional differences in the impact of the measures

The stakeholders in the online public consultation were asked to compare harmonised requirements measures with voluntary measures. The main results for two important river areas, the Rhine and Danube, are summarized below:

- With regard to labour mobility, mandatory harmonised professional qualifications and training standards will, according to 85% of CCNR stakeholders, and a bit less than 80% of Danube stakeholders, result in fairly to very positive effects on labour mobility. For voluntary measures these percentages are respectively around 50% and 60%.
- With regard to administrative burden: mandatory harmonised professional qualifications and training standards will, according to 54% of CCNR stakeholders and more than 70% of Danube stakeholders, result in fairly to very positive effects on the administrative burden. For voluntary measures these percentages are respectively around 23 and 62%.
  With regard to safety: mandatory harmonised professional qualifications and training standards will according to around 90% of CCNR stakeholders, and more than 85% of Danube stakeholders result in fairly to very positive safety effects. For voluntary measures these percentages are both only around 60%. For the voluntary approach, respectively 8 and 4 % of CCNR and Danube respondents foresee negative effects.

The online public consultation revealed similar support both from the CCRN and the Danube region

7. Conclusions

The responses received within the online public stakeholder consultation on the "Recognition and modernisation of professional qualifications in inland navigation" confirm that the problems of restricted labour mobility and safety identified by the European Commission are of high importance and need to be dealt with, in order to remove the barriers between EU Member States for exercising professions in the field of inland navigation. The majority of the respondents considered the different problem drivers and subsequent policy objectives identified as highly relevant.

The online consultation also gathered information about the opinion of different groups of stakeholders with regards to the appropriateness of 15 different policy measures. The responses received confirm a high level of support to measures implying the harmonisation of professional requirements, qualifications and examinations in inland navigation between EU Member States, whereas the introduction of voluntary measures or non-binding recommendations receives a considerably lower level of support.

The voice of the stakeholders on specific problems and measures gathered through this public consultation will help the European Commission to devise a set of appropriate policy measures during the process of elaboration of the impact assessment accompanying a potential legislative proposal on the recognition and modernisation of professional qualifications in inland navigation.

Annex 2:
Estimated number of IWT workers

Table 1 Estimated number of workers in 2011

Countries	Total freight	Total passenger	Total IWT employment	Total boatmasters	Total operational staff
Netherlands*	10,820	3,088	13,908	6,053	7,855
Germany*****	*2,774*	*2,815*	5,589	1,337	4,252
France*	*1,673*	*2,027*	*3,700*	790	2,910
Luxembourg**	*2,555*	*256*	*2,811*	668	2,143
Italy*	634	1,919	2,553	1,290	1,263
Belgium*	*1,851*	*548*	2,399	1,659	740
Romania*	2,081	248	2,329	491	1,838
Bulgaria*/***	1,385	*294*	*1,679*	911	768
Switzerland	417	1,197	1,614	416	1,198
Sweden*	118	983	1,101	250	851
United Kingdom*	299	752	1,051	263	788
Hungary*	267	600	867	201	666
Portugal**	0	853	853	55	798
Czech Republic*	*517*	*283*	*800*	135	665
Poland*	*313*	*303*	616	284	332
Slovakia*	*413*	*31*	444	89	355
Spain*	44	344	388	62	326
Finland*	39	228	267	41	226
Austria*	*51*	*157*	208	88	120
Lithuania*	*0*	145	145	11	134
Denmark*/**	*48*	*95*	*143*	24	119
Croatia*/**	*121*	*12*	133	20	113
Latvia*	89	17	106	5	101
Estonia**	0	61	*61*	7	54
Slovenia*	*40*	*21*	*61*	38	23
Total	**26,549**	**17,277**	**43,826**	**15,190**	**28,636**

* Based on division between mobile workers and self-employed given by EUROSTAT for 2010
** Based on number of enterprises in 2010 (or most recent information) and the average number of self-employed and average number of workers per enterprise.
*** Based on survey carried out in 2013 under Ministries, Trade unions and Employer organisations in EU-28.
**** Based on share freight and passenger vessel within the IVR ship registration for the 2011.
***** Based on available statistics for 2011.

Source: Ecorys (2013), updated by Panteia (2014).

Annex 3:
Baseline scenario: evolution of current IWT labour market (demand supply model)

This Annex is an extract from the study « Contribution to the problem definition in the context of the preparation of the Impact Assessment: Recognition of professional qualification and training standards in inland navigation" (Panteia 2014, pages 59-71 as well as Appendix 4 of Panteia (2014), Recognition and modernisation of professional qualifications in inland navigation : technical support for an impact assessment). The extract provides the assumptions, methodology and calculations supporting the demand supply model developed by Panteia, and underpinning the evidence in the problem definition, baseline scenario and assessment of impact of this IAR.

Introduction

In this Annex, the evolution of the IWT labour market will be further described. Building on the data from the earlier chapters, a labour market model is set up that takes account of the demand for IWT workers on the one hand and the supply of IWT workers on the other hand. This will be done for each IWT corridor and altogether, so that regional differences in the demand/supply gap over time can be identified. A sensitivity analysis will test for the impact of changes in the assumptions that have been made.

Demand for workers for different IWT corridors

The demand for workers in the inland navigation sector is related to the total number of vessels (and the amount of cargo transported) and the manning requirements. In the study concerning the European Agreement on Working Time in IWT[13], the total amount of workers needed in EU IWT has been forecasted from now up to 2050, taking into account the enlargement of the fleet and the prospected growth of IWT transport.

This demand of labour has been distributed proportionally over four main IWT corridors in Europe. The corridors and the countries which are in these corridors can be seen in Table 1.

Table 1 Corridor-country matrix

	Rhine	North-South*	Danube	East-West**
Netherlands	X	X		X
Belgium	X	X		
Germany	X			X
Poland				X
France	X	X		
Switzerland	X			
Austria			X	
Slovakia			X	
Czech Republic				X
Hungary			X	
Romania			X	
Bulgaria			X	

** The North-South corridor includes the following river basins: Scheldt, Rhône, Meuse and Seine*
*** The East-West corridor includes the following river basins: Elbe, Weser and Odra*

[13] Ecorys (2013), Study on the costs and benefits of the implementation of the European Agreement on working time in inland waterway transport – A comparison with the status quo

Source: Panteia (2013)

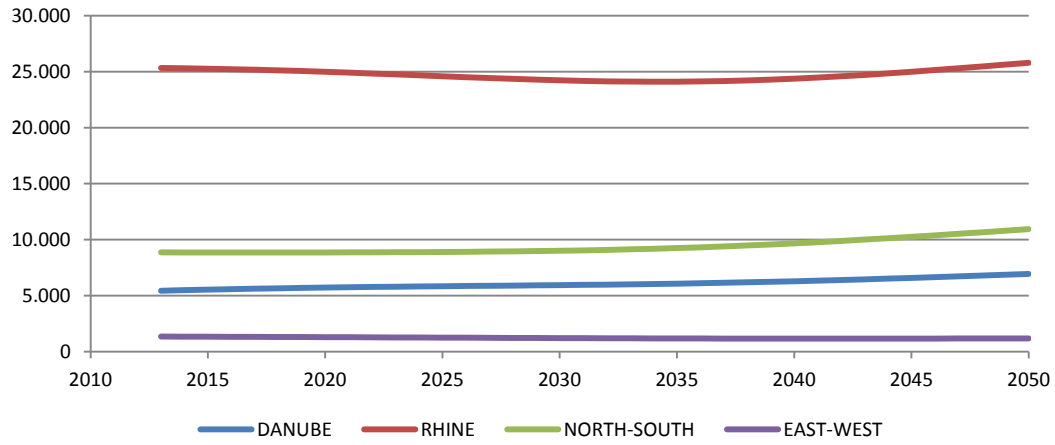
Demand of workers

The demand of workers is determined as follows:

1. The distribution of the demand for workers over the various corridors is related to the amount of cargo transported on these corridors.
2. The total amount of cargo transported on the corridors has been determined for 2007, 2020 and 2040 (NEA et al., 2011).
3. Extrapolating this data resulted in the amount of cargo transported in the years in between the intervals and after 2040.
4. As smaller vessels operate on the North-South and East-West and thus traffic on these corridors is more labour-intensive. A multiplication factor of 1.5 is used for traffic on these corridors for the extra personnel needed.
5. Dividing the values for each corridor by the total, will give the ratios for the distribution for demand of workers.
6. Multiplying the ratios by the total demand of workers as determined in Ecorys (2013)[14] will give the demand of workers per corridor per year.

The results of the proportional distribution of labour demand (for both operational workers and boatmasters) for the period 2013 - 2050 can be seen in Figure 1. Figures are presented in Annex 5, table A2 of the external study[15].

Figure 1Demand for workers in IWT sector (operational workers and boatmasters)



Source: Panteia (2013), based on Study on the costs and benefits of the implementation of the European Agreement on working time in inland waterway transport – A comparison with the status quo (Ecorys, 2013), adjusted for corridors and the projected transport performances in 2020 and 2040 in Medium and Long Term Perspectives of IWT in the European Union, Annex 2. NEA (2011).

Figure 1 shows that the demand for workers is expected to increase at the start of 2035. This can be seen for all corridors, however, the amount of workers needed in the Rhine corridor will increase more steeply. A small decline can be noted on the Rhine corridor up to 2035,

[14] Ecorys et al. (2013), Study on the costs and benefits of the implementation of the European Agreement on working time in inland waterway transport – A comparison with the status quo.

[15] Panteia (2014), Contribution to the problem definition in the context of the preparation of the Impact Assessment: Recognition of professional qualification and training standards in inland navigation.

whilst the demand of workers on the Danube and North-South corridor is expected to increase slightly. In general, the demand of workers is expected to decrease up to 2035, as can be seen from Figure 1 and Annex 5, Table A2 of the external study[16].

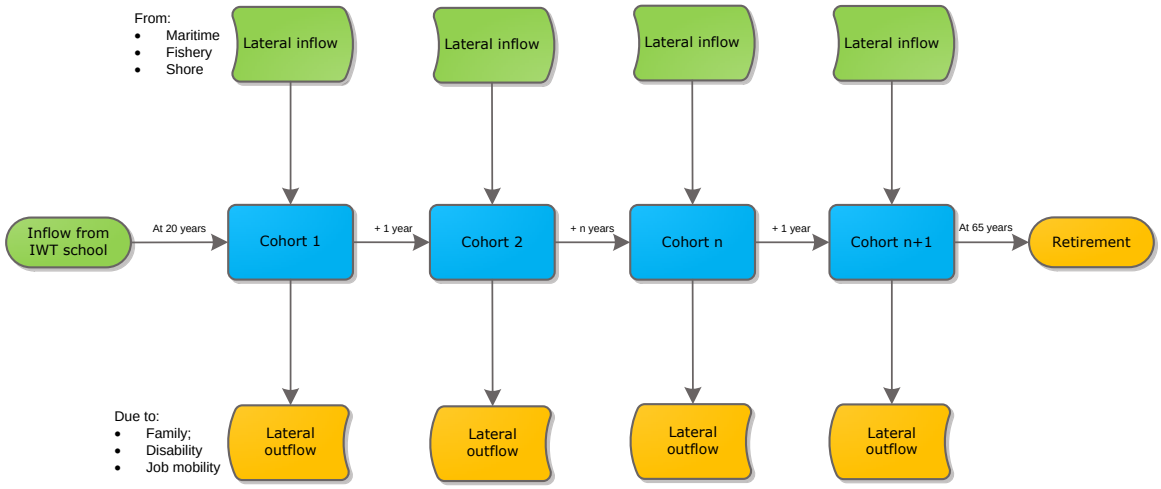
Supply of workers for different corridors

The supply side of IWT workers is modelled according to the scheme that is shown in Figure 2. The core of the model consists of a subdivision of the workforce in different age cohorts. Over a certain time span, the various age cohorts either increase or decrease, because of:

- Inflow from younger workers from a lower age cohort
- Outflow of workers to a higher age cohort
- Lateral inflow of workers in an age cohort from other sectors (fishery, maritime, shore side, others)
- Lateral outflow of workers in an age cohort (family circumstances, disability, job mobility)

As special cases, the lowest age cohort also has inflow from IWT training institutes (demonstrating the attractiveness of the IWT sector), while the highest age cohort has an outflow due to retirement.

Figure 2 Schematic overview of evolution of age structure of IWT workforce



The following assumptions are made in order to estimate the supply of workers:

- All persons that enrol in a IWT-training institute will have an IWT job, either by graduating (85%) or by a pathway via gaining experience in practice (15%);

Table 2 Statistics on the amount of students enrolled and graduating

Institute	Time[17]	Year	Students enrolled	Students graduating	Percentage graduating[18]
STC (NL)	2	2006	185	184	99,5%
		2007	177	172	97,2%

[16] ibidem
[17] Duration of Education Program (2 years for boatsmen, 3 years for helmsman and 4 years for captain)
[18] This number can be above 100%, when students double a year.

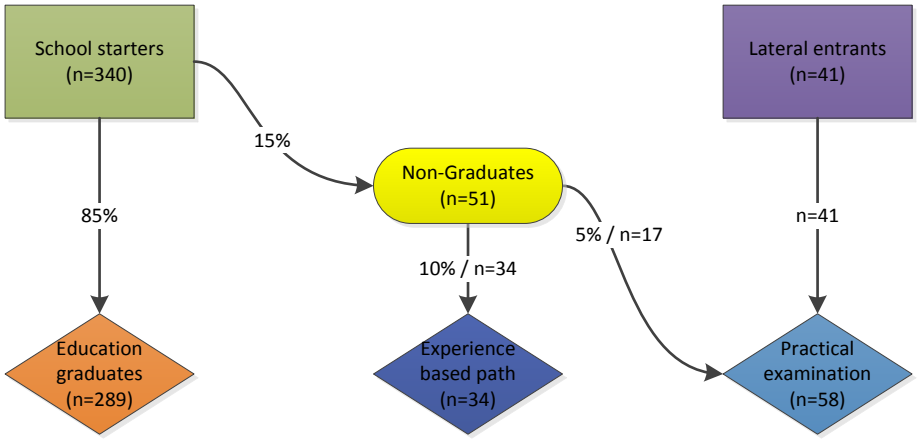
Institute	Time[17]	Year	Students enrolled	Students graduating	Percentage graduating[18]
		2008	169	172	101,8%
		2009	180	178	98,9%
	4	2006	135	121	89,6%
		2007	124	126	101,6%
Harlingen (NL)	2	2005	57	48	84,2%
		2006	70	55	78,6%
		2007	52	35	67,3%
		2008	61	61	100,0%
		2009	40	43	107,5%
Duisburg Schullschiff (DE)	3	2005	108	101	93,5%
		2006	94	87	92,6%
		2007	98	91	92,9%
		2008	119	99	83,2%
Duisburg SBK (DE)	3	2005	116	83	71,6%
		2006	106	91	85,8%
		2007	123	99	80,5%
		2008	144	134	93,1%
Total	**N/a**	**N/a**	**2158**	**1980**	**91,8%**

Source: Data collected by STC (2013)

- If applicable, out of the 15%, 2/3rd take the experience based path to obtain their qualifications and 1/3rd will take a practical examination.
- All people entering the IWT workforce via education, enter at the age of 20.
- Outflow (apart from retiring at the age of 65) and lateral inflow from other sectors balance each other for all age categories, as currently no data is available concerning lateral entrants or people leaving the sector before retiring[19].
  Onderwijs Centrum Binnenvaart (2014) has reported 58 practical exams in 2013. We have assumed that 17 (=1/3rd of 15% of 340) of them are early school leavers that obtain their professional qualifications by practical examination. The latter (41 workers) is considered lateral inflow. Nederland Maritiem Land (2012) also reported an outflow of 130 workers in 2012, of which 32% is considered as lateral outflow. This equals 41 workers.
  Thus, see figure 3 for an overview of entrants to the IWT sector

Figure 3 Schematic overview of entrants and paths to qualifications

[19] Apart from the fact that in the base case, lateral entrants are not taken into account due to the absence of reliable data, it must be noted that lateral inflow/outflow may help to level a labour market imbalance between demand and supply.



- Attractiveness of IWT-education remains constant over the years, meaning that a constant proportion of 20-year olds choose to enrol in an IWT training institute per year.
- The age of retirement for all workers has been set at 65 years.
- The distribution of IWT workers over the corridors remains proportionate.

In this study, the supply of workers is therefore determined by the current amount of workers plus the amount of new students entering in training institutes, minus the amount of retirements per year.

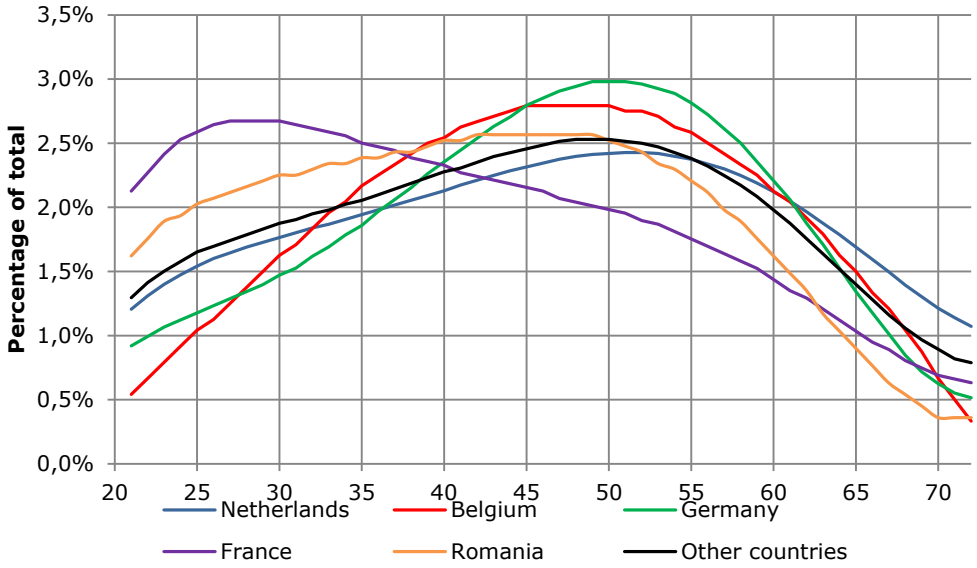
Current age distribution

The age distributions for the five countries with the largest workforce in IWT can be seen in Figure 4. These age distributions are continuous, while the one from Figure 2.4 of the external study[20] have been divided into cohorts that span 10 years. In addition, an estimation was made for the age distributions for Romania and other countries[21], due to lack of data for these Member States. An average of the total EU IWT workforce population was used to estimate the age distributions in these countries. For Romania, data was only available for boatmasters and not for operational workers.

Figure 4 Age distributions for the five countries with most workers in IWT for 2013

[20] ibidem

[21] Other countries include Poland, Switzerland, Austria, Slovakia, the Czech Republic, Hungary and Bulgaria, as well as all the other countries listed in table 2.1 and not specifically mentioned in this footnote and in figure 6.3. This involves countries with isolated IWT networks, such as Italy, the United Kingdom, etc.



Source: Panteia (2013) based on data from ITB and Ecorys (2013)

Future developments of IWT labour market

Attractiveness of IWT sector (representing the students outflow from training institutes)

For the evolution of the IWT workforce in time it is important to predict the outflow from training institutes. Partly, this depends on the amount of youth available. In the base case, it is assumed that a constant proportion of youth will choose to enrol (and graduate) in IWT training. The proportion of students enrolled in IWT training institutes compared to the total amount of students is defined as the attractiveness of IWT training. In this study, we have assumed the amount of 20-year-olds per country as a proxy to the total amount of students per country. The attractiveness of IWT education is further assumed to remain constant over time and it is estimated, based on the current proportion between new entrants to IWT education and current 20-year-olds.

The Europop2010[22] population projections on country level have been taken for the Netherlands, Belgium, Germany, France and Austria to determine the amount of 20-year-olds within the period of scope (2013 – 2050). For all the other countries, data from the World Bank has been used[23]. By multiplying this amount by the attractiveness of IWT education, the amount of young people entering the profession can be determined for each year.

[22] http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Population_projections

[23] The national statistical institutes of the mentioned countries have shown disaggregated data for the Europop2010 population projections. Eurostat, the data source for the other countries, showed the population projections in age groups of five years. World Bank data, however, provided disaggregated data for these countries.

Attractiveness of IWT education in 2013

STC[24] determined the amount of students entering in IWT training institutes. The survey comprised 12 countries and 26 training institutes. The attractiveness of IWT education is calculated as follows:

1 The amount of 20-year-olds for each country, is taken from Europop2010 or World Bank population projections;
2 The amount of new entrants per year as reported by STC is taken and divided by the amount of 20-year-olds from the population projections.

As not all of these institutes provided data for the amount of graduates per year, the amount of new entrants per year has been taken as a proxy for the amount of people eventually entering the IWT sector, either by a path through the education institutes or by gaining experience. See section 2.9 of the external study[25] for further evidence of this.
The attraction of IWT education in 2013 per 10,000 adolescents of 20 years old can be observed in Table 3. In total, it is estimated that the sector attracts 923 new entrants in 2013.

Table 3 Attractiveness of IWT education in 2013, per country

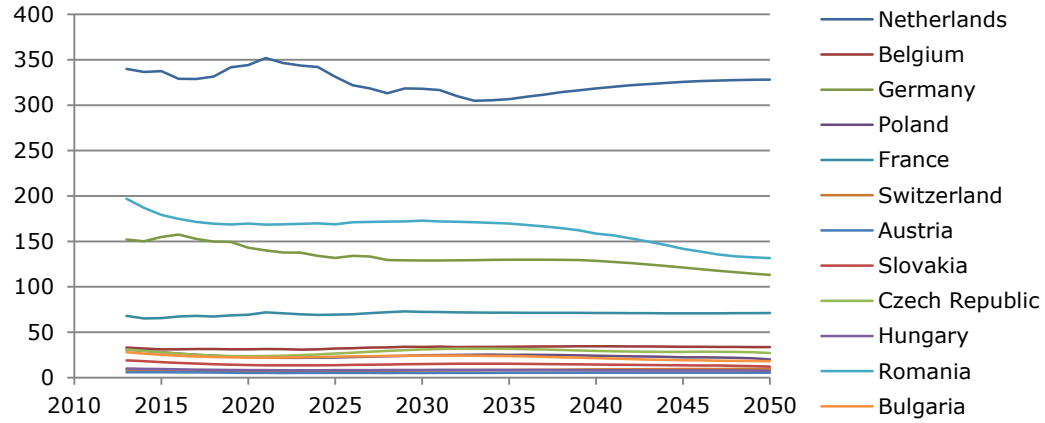
Country	Entrants in IWT	Attraction (per 10,000)	Country	Entrants in IWT	Attraction (per 10,000)
Netherlands	340	16.3	Germany	152	1.9
Romania	197	7.9	France	68	0.9
Bulgaria	28	3.7	Switzerland	8	0.8
Slovakia	19	2.6	Hungary	10	0.8
Belgium	33	2.4	Poland	31	0.6
Czech R.	31	2.4	Austria	6	0.6

Source: STC (2013), adjusted by Panteia based on Europop2010 population projections for the Netherlands, Belgium, Germany, France and Austria and Worldbank-projections for the other countries.

As we have assumed the attractiveness of IWT education institutes to remain constant over time, multiplying the amount of 20-year-olds per year by the attractiveness of IWT (divided by 10,000) will give the amount of new entrants per year. This can be seen in Figure 5.

Figure 5 New entrants to IWT sector per country (2013-2050)

[24] STC B.V. provides tailor-made training and education for the complete logistics chain, offshore, dredging, shipping, maintenance and process industry.
[25] ibidem



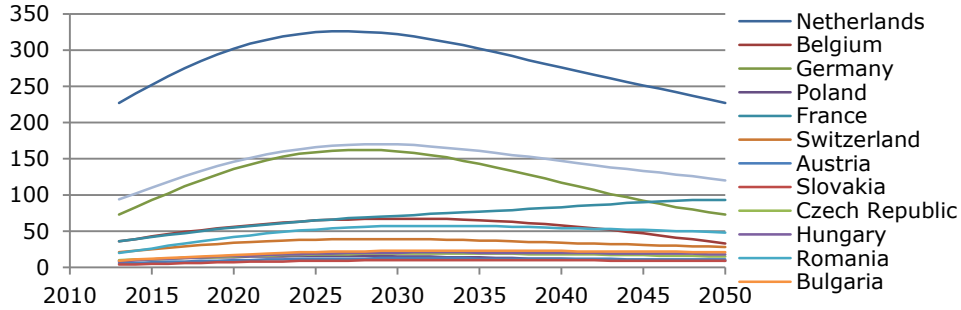
Source: STC, 2013, adjusted by Panteia based on Europop2010 population projections for the Netherlands, Belgium, Germany, France and Austria and World Bank-projections for the other countries.

Figure 5 shows that, in general, the amount of new entrants to the sector is expected to decrease over time. Starting with 923 new entrants in 2013, the number of new entrants will drop to 860 in 2020, 823 in 2040 and 778 in 2050. The main 'contributors' to this decrease over time are Romania, the Czech Republic and Germany. In the case of Romania, 197 new entrants to the sector have been observed in 2013 and this is expected to decrease to 132 new entrants in 2050. In other countries, the number of new entrants to the sector each year is expected to be rather constant.

Retirements

In this study, we have made the assumption that IWT workers will retire at the age of 65. As we know the age distribution per country, the amount of retirements per year can be determined. This can be seen in Figure 6.

Figure 6 Amount of retirements in IWT per country per year



Source: Panteia (2013)

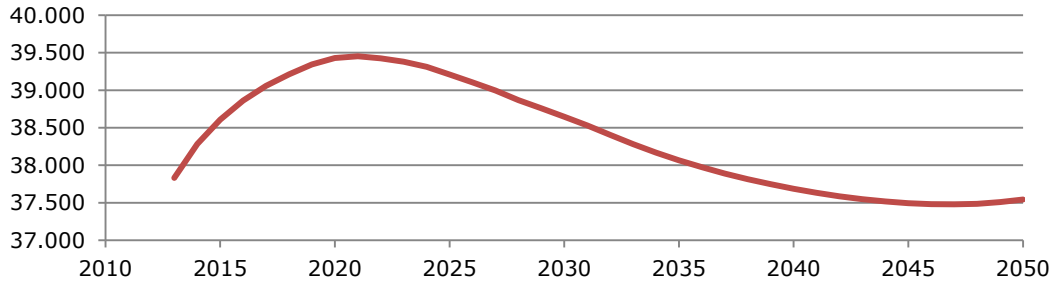
The amount of retirements per year will reach its maximum levels in the period 2025 – 2030. All current workers aged 50 or more – the majority of IWT workers as can be observed from Figure 6 – will retire during this period.

Evolution of total supply of workers

The total amount of workers can be determined by summing up the amount of workers in the previous year and the new entrants to the sector, minus the amount of retirements per year. The expected evolution of the amount of workers in the period of scope (2013

– 2050) can be observed in Figure 7. The exact figures per country are listed in Annex 5 of the external study[26].

Figure 7 Total aggregated supply of workers in IWT sector (2013-2050)

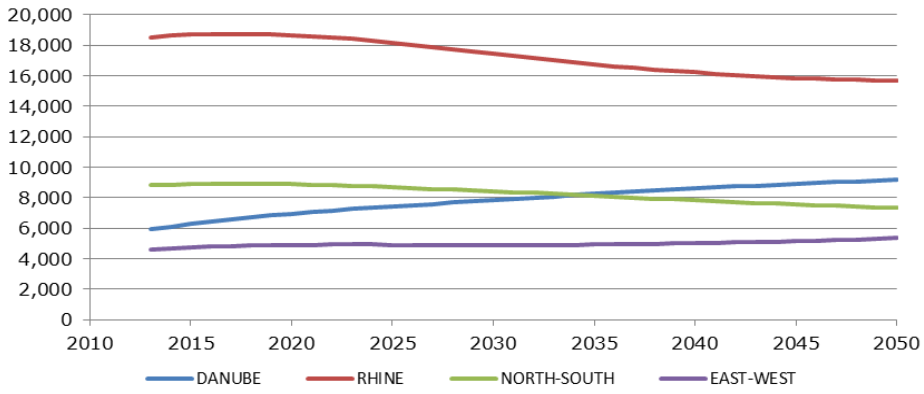


Source: Panteia (2013)

In order to distribute the workers among the corridors, a distribution has been applied. The values and further background on the calculation of this distribution can be found in Annex 7 of the external study[27]. This distribution is assumed to remain constant over time.

The distribution of workers among corridors is determined by multiplying the total amount of workers per year by the distribution rate per corridor (see Annex 5). The amount of workers per corridor is shown in Figure 8 (see Annex 5 of the external study[28] for a table with the data that was used for this figure).

Figure 8 Total supply of workers in IWT sector per corridor (2013-2050)



Source: Panteia (2013)

It can be concluded from Figure 8 that the supply of workers in the Rhine corridor and North-South corridor is expected to decrease over the period 2013-2050, whilst the amount of workers in the Danube corridor and East-West corridor is expected to increase.

Evolution of the gap between demand and supply of workers in IWT per corridor

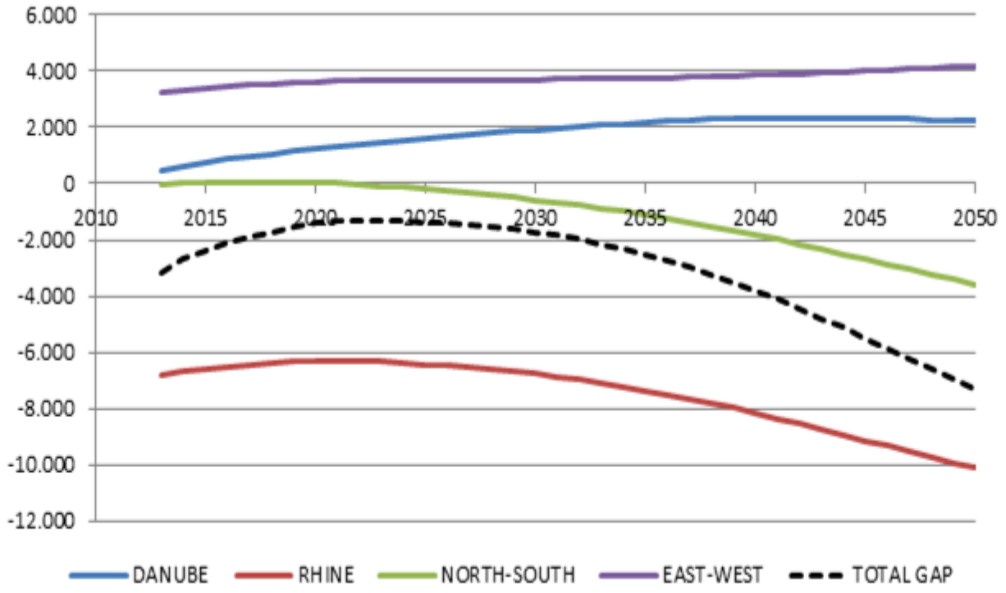
The gap between the demand for workers and the supply of workers can be determined by subtracting the graphs in Figure 1 and Figure 8. The difference between demand and supply

[26] ibidem
[27] ibidem
[28] ibidem

for each of the corridors shows the regional differences. Also the total EU gap between demand and supply has been included (see Figure 9).

As shown in Figure 8, regional differences between corridors are expected to increase in the long term. On the Danube corridor and the East-West corridor, there will be a surplus of about 2,500 and 4,000 workers respectively. On the other hand, on the North-South and Rhine corridor there will be a shortage of labour.

Figure 3 Gap between demand and supply of workers in IWT per corridor (2013-2050)



Source: Panteia (2014)

It must be noted that deficits exist at this moment for the Rhine corridor, while there is a surplus of workers on the Danube, the North-South and East-West corridor. This gap is the reason for which so many workers from Eastern-Europe are working on vessels sailing under the flag of the Netherlands and Germany, as can be seen in Table 4.

Table 4 Amount of workers per country of origin in the Netherlands in 2011

Nationality	Numbers counted in survey of Dutch Inspectorate	Total workers in IWT in the Netherlands[29]	% of total workers in IWT in the Netherlands
Dutch	414	6,473	60%
Czech	69	1,079	10%
German	64	1,001	9%
Polish	38	594	5%
Belgian	32	500	5%
Romanian	25	391	4%
Philippine	16	250	2%
French	14	219	2%
Slovenian	4	63	1%
Hungarian	3	47	0%
Bulgarian	2	31	0%
Spanish	2	31	0%

[29] Percentage multiplied by amount of workers in IWT in the Netherlands, see Table 2.1.

Serbian	2	31	0%
Russian	2	31	0%
Ukrainian	2	31	0%
British	1	16	0%
Yugoslavian[30]	1	16	0%
Cape Verdian	1	16	0%
Total	**692**	**10,820**	**100%**

Source: Dutch Human Environment and Transport Inspectorate, inspection language problems (2011)

Figure 9 shows that labour mobility is very important for the functioning of the IWT labour market. Restrictions on accessibility on the Rhine occur even now with a shortage of over 8,000 workers on the Rhine corridor. These figures are expected to increase over time, up to a shortage of nearly 12,000 workers in 2050.

Although agreements exist between a certain number of countries, ensuring mutual recognizing of Service Record Books and boatmaster licences, these agreements are not yet perfect and further legislation on these subjects can help the IWT sector.

Sensitivity analysis

In order to test the sensitivity of the model to the parameters used, five scenarios have been tested. The assumptions apply for the whole period of scope. The scenarios include:

A) 10% dropout at the age of 35, due to paternity and movement to 'shore';
B) 10% dropout at the age of 45, due to disabilities;
C) 10% influx at the age of 35 from other sectors, such as maritime or fishery;
D) 10% extra attractiveness of IWT education;
E) 10% less attractiveness of IWT education;

For each of these scenarios, the impact has been determined:

- Inflow of employees (Figure 10);
- Outflow of employees (Figure 11);
- Difference between inflow and outflow (Figure 110[11]);
- Gap between demand of workers and supply (Figure 1341[12]);

In the Figures mentioned above, also the Base Case has been included (as "0"). The impacts of the five scenarios on the inflow, outflow and thus the balance can be observed from Table 5.

Table 5 Impact of scenarios on parameters compared to the baseline for the whole period

	Inflow	Outflow	Difference
A	0	+	-
B	0	+	-
C	+	+[31]	+
D	+	0	+

[30] The exact nationality could not be retrieved in the database.
[31] The extra inflow at the age of 35 will retire within the period of scope, starting in 2043, thus causing extra outflow in this scenario as well.

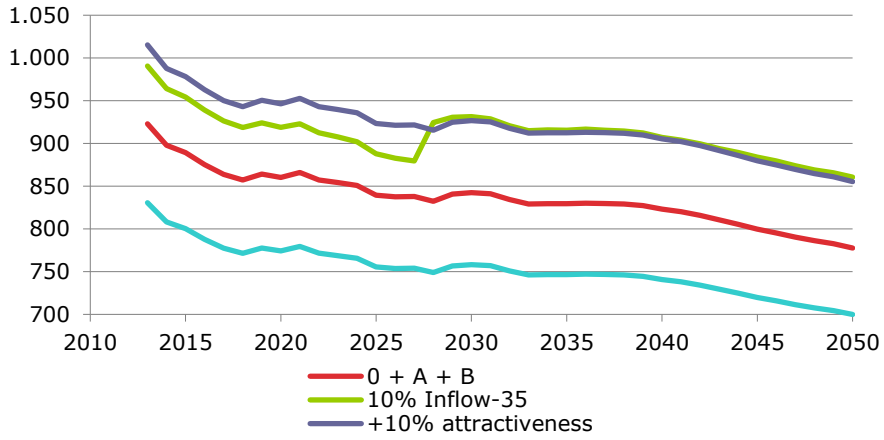
E	-	0	-
0 means no difference compared to the baseline scenario; + means an increase compared to the baseline scenario; - means a decrease compared to the baseline scenario.			

Source: Panteia (2013)

Inflow

Figure 10 shows the amount of new entrants to the sector for all the scenarios. It can be observed that the 10% influx at the age of 35 from other maritime sectors (scenario C) gives the total inflow a boost, when compared to the baseline scenario. The sharp increase (2028) is the result of the enlarged inflow in 2013 compared to the years before and the multiplier of 10% on 35-year-olds. The age distribution of 2013, only involves 513 21-year-olds. Compared with the projected increase of 923 new entrants at the age of 20[32], there will be a sharp increase of the amount of 35-year-olds in 2028 compared to 2027. The amount of new entrants to the sector does not change for scenarios A and B compared to the baseline scenario The new entrants in scenarios D and E are either 10% higher and 10% lower than the baseline scenario.

Figure 10 Total inflow of workers per scenario (2013-2050)



Source: Panteia (2013)

Outflow

Figure 11 shows the amount of outflow of workers in the IWT sector for all the scenarios. It can be observed that the outflows follow a pattern that resembles a parabola, mainly due to current age characteristics of the IWT sector. However, minor differences between the curves can be seen. Firstly, scenarios O, D and E (green line) and scenario C follow the same line, until 2043. At that time, the new entrants due to lateral inflow (which again was a result of the enlarged inflow in 2013, compared to the years before[33] and the multiplying effect) from other maritime sectors retire, thus causing extra retirements compared to the baseline scenario.

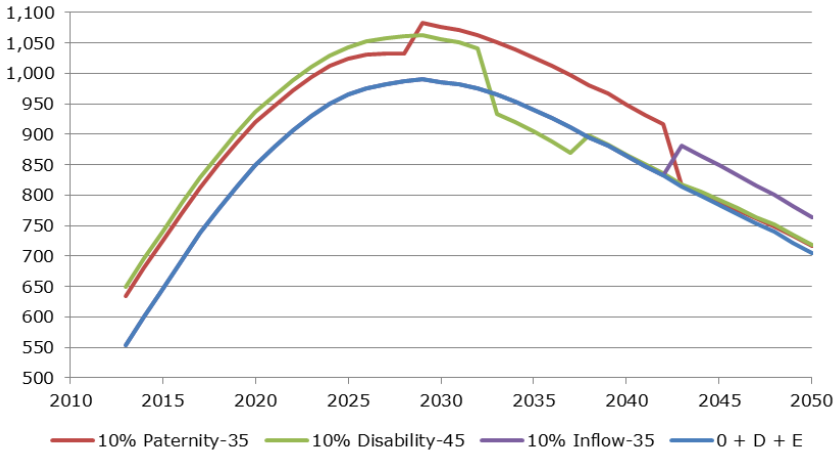
The same goes for scenario A in 2028. Here, at the age of 35, 10% of the employees are supposed to leave the sector due to paternity. Since the inflow in 2013 was enlarged compared to the years before, this causes a sharp rise. However, the amount of

[32] See Annex 5, table A 4

[33] In 2013, there are 923 new entrants to the sector. In 2012, only 503 new entrants have been reported.

retirements drops to normal levels in 2043, which is the result of the fewer amount of 65-year olds at that time. It must be noted that 10% of these workers already left the sector in 2013 at the age of 35.
Scenario B seems much alike scenario A at first sight. However, big differences can be observed from the graph. This is the result of people first leaving the sector, before the big wave of new entrants (in 2013) will cause an increase in the outflow. It takes 20 years before the graph 'benefits' from the fewer amount of 65-year olds, and it takes 25 years before the new entrants in 2013 reach the age of 45.

Figure 11 Total outflow of workers in scenarios

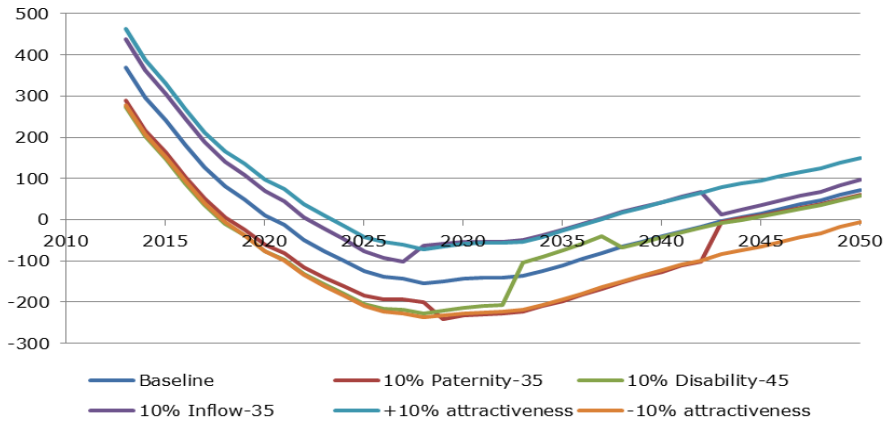


Source: Panteia (2013)

Differences between inflow and outflow

From Figure 112[11] it can be observed that all graphs follow the same pattern. All scenarios start with a surplus of entrants compared to the workers leaving the sector. Compared to the baseline scenario, scenario D (10% more attractiveness of IWT education) seems to show the best results in terms of net inflow, as inflow overcomes outflow for most of the years. On the other hand, a less attractive IWT sector (scenario E) would mean a deficit for nearly all the years. No scenario manages to create positive numbers all the time, mainly due to the large amount of 40-55-year-olds that will retire between 2020 and 2040.

Figure 12 Net result of inflow minus outflow for all scenarios



Source: Panteia (2013)

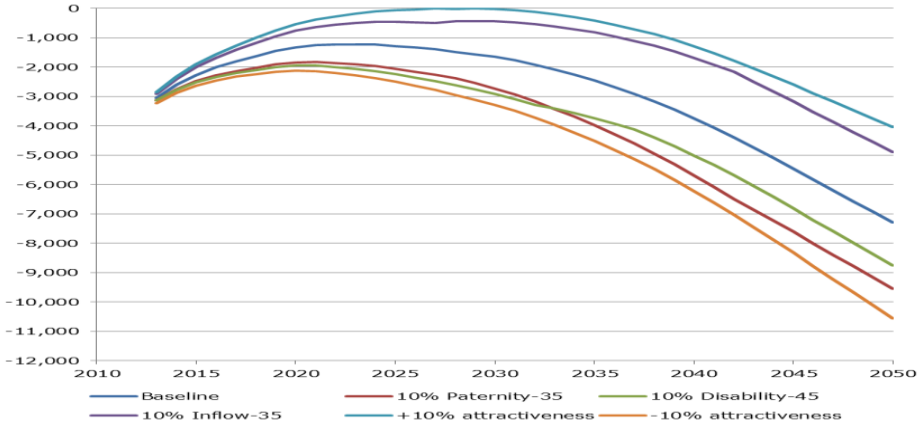
Gap between demand and supply of workers

Figure 1343[12] shows us the gap between the demand of workers (which remains the same for all scenarios) and the supply of workers, which of course varies depending on the situation. It can be observed that the baseline scenario results in a smaller deficit of workers on the short term, whilst a much bigger gap would emerge in the long run.

None of the scenarios is able to keep up with the increased demand of workers in the long term. This holds even for the most positive scenarios: scenarios that increase the attractiveness of the IWT sector and scenarios that increase lateral inflow from other maritime sectors are not able to keep up with the increasing demand. This emphasises even more the need for measures to lower the entry barriers to the IWT labour market. The more negative scenarios show that there is a possibility that the situation may end up even worse, with shortages of labour of up to 10,000 workers in 2050, meaning a vacancy rate of more than 20%.

In the medium term, unemployment can be seen in IWT for scenario D (10% more attractive IWT sector). This happens when the 40-55-year-olds at this time reach their retirement. Unemployment rates will be low however; this scenario never exceeds a surplus of more than 500 workers.

Figure 134 Gap between demand and supply of workers for scenarios



Source: Panteia (2013)

Annex 4:
Comparison between Rhine Patent regulation and Directive 96/50/EC on requirements for issuing boatmasters' certificates

This annex is based on the external study in support of the impact assessment[34].

General Requirements	The Rhine Patent Regulation	Directive 96/50/EC
1. Minimum Age	21 years	21 (*18*) years Exception: MS may still issue certificates to persons 18 years old or older.
2. Physical and mental fitness	Physical and mental fitness, certified by a document issued by a doctor recognised by the competent authorities.	Examination carried out by a doctor recognised by the competent authority.
Additional medical examination	Every five years between 50– 65 years; every year after 65 years	Every year starting from the age of 65 years
3.Professional experience	4 years, including, at least, 2 years as rating, engine-minder or, at least, 1 year as leading crewman. The experience must be acquired on a self-propelled vessel for which a Rhine patent is required. A year is defined as 180 days of inland navigation.	Min. 4 years of professional experience as a member of the deck crew on an inland waterway vessel. No definition is given on how many working days should be included in a year.
The proof of professional experience	Service record book delivered by the Rhine authorities or a valid administrative document as described in article 2.09.	Validated by the competent authority of the MS - personal service record.
Reduction of the required professional experience	By a max. 3 years for the time spent in a training programme;	By a max of 3 years - if the applicant has a diploma recognised by the competent authority which confirms specialised training in inland navigation comprising practical navigation work; - if the applicant has passed a practical examination in sailing a vessel; the certificate shall in that case cover only vessels with nautical characteristics similar to those of the vessel which underwent the practical examination.
4.Examination of professional knowledge	The candidates must demonstrate their professional knowledge and skills by passing a theoretical examination	The applicant must have passed an examination of professional knowledge

Source: Rhine Patent regulation and Directive 96/50/EC

The table indicates specific differences in requirements for issuing boatmasters' certificates, including:

- For the minimum age to obtain a boatmasters' certificate the Rhine Patent Regulation and Directive 96/50/EC both include 21 years, however, Directive 96/50 adds the exception in

[34] Panteia (2014), Contribution to the problem definition in the context of the preparation of the Impact Assessment: Recognition of professional qualification and training standards in inland navigation, p. 35-36.

which Member States can issue a boatmasters' certificate at age 18. This exception is used, e.g. by the Netherlands and France.

- Regarding proof of physical and mental fitness, systems are basically similar, except for the additional medical examination. In the Rhine regulation this needs to be done every five year between age 55-65, and each year afterwards. Directive 96/50 just states each year starting from the age of 65 years.

- The years of professional experience is treated differently between the two regimes. Not in terms of duration, this is 4 years for both, but in terms of how this time is to be spent. Directive 96/50/EC does not provide any specifications on how time is to be spent on board and does not define how many working days should be considered as one year. The Rhine Patent regulation prescribes at least two years as rating, engine-minder or at least one year as leading crewman. A year is defined as 180 days of inland navigation.

- Also with regard to the reduction of the required professional experience, differences prevail. Although under both systems reductions up to a maximum of 3 years exist, for the Rhine Patent regulation one year is calculated on the basis of 180 effective working days, whereas for the Directive no definition is given on how many working days should be included in a year. Moreover, the Directive allows for a reduction of the required professional experience if the applicant has passed a practical examination. This is not the case for the Rhine patent regulation, which only allows for a reduction on the basis of time spent in a training programme.

- Regarding the examination, article 7.12 of RNP states explicitly that for obtaining the Rhine patent or small patent the exam shall be theoretical, whereas the Directive 96/50/EC does not specify the form of exam.

Annex 5:

Comparison table for the mutually recognition of boatmaster license per couny and country where the license is issued

Comparison table for the mutually recognition of boatmaster license per country / river commission and country / river commission where the license is issued[35]

Recognizes →	*AT*	*BE*	*BG*	*CZ*	*HR*	*FR*	*DE*	*HU*	*LU*	*NL*	*PL*	*CCNR*	*RO*	*RS*	*SK*	*CH*	*UA*	*UK*	*IT*	*SE*	*PT*	*FL*	*LT*	*EE*
Austria	x	x	x	x	x	x	x	x		x	x	x	x	x	x		x			x		x	x	x
Belgium	x	x	x	x	x	x	x	x		x	x	x	x		x					x		x	x	x
Bulgaria	x	x	x	x	x	x	x	x		x	x	x	x	x	x		x			x		x	x	x
Croatia	x	x	x	x	x	x	x	x		x	x	x	x	x	x		x			x		x	x	x
Czech Republic	x	x	x	x	x	x	x	x		x	x	x	x		x					x		x	x	x
France	x	x	x	x	x	x	x	x		x	x	x	x		x					x		x	x	x
Germany	x	x	x	x	x	x	x	x		x	x	x	x		x					x		x	x	x
Hungary	x	x	x	x	x	x	x	x		x	x	x	x	x	x		x			x		x	x	x
Luxemburg	x	x	x	x	x	x	x	x		x	x	x	x		x					x		x	x	x
Netherlands	x	x	x	x	x	x	x	x		x	x	x	x		x					x		x	x	x
Poland	x	x	x	x	x	x	x	x		x	x	x	x		x					x		x	x	x
C.C.N.R	x	x	x	x			x	x		x	x	x	x		x									
Romania	x	x	x	x	x	x	x	x		x	x	x	x	x	x		x			x		x	x	x
Serbia	x		x		x			x					x	x	x		x							
Slovakia	x	x	x	x	x	x	x	x		x	x	x	x	x	x		x			x		x	x	x
Switzerland												x				x								
Ukraine	x		x		x	x							x	x	x		x							
United Kingdom	x	x	x	x	x	x	x	x		x	x	x	x		x			x		x		x	x	x
Italy	x	x	x	x	x	x	x	x		x	x	x	x		x				x	x		x	x	x
Sweden	x	x	x	x	x	x	x	x		x	x	x	x		x					x		x	x	x
Portugal	x	x	x	x	x	x	x	x		x	x	x	x		x					x	x	x	x	x
Finland	x	x	x	x	x	x	x	x		x	x	x	x		x					x		x	x	x
Lithuania	x	x	x	x	x	x	x	x		x	x	x	x		x					x		x	x	x
Estonia	x	x	x	x	x	x	x	x		x	x	x	x		x					x		x	x	x

** Spain, Latvia, Denmark, Cyprus, Malta, Irelenad and Slovenia are not included in this analysis, as these countries are generally not considered as IWT-countries.*

** The United Kingdom, Italy and Portugal do not issue boatmaster certificates in line with Directives 96/50/EC and 91/672/EEC.*

** Luxemburg does not issue boatmaster certificates at all.*

Source: Panteia (2014)

[35] Panteia (2014), Recognition and modernisation of professional qualifications in Inland Navigation, Technical support for an impact assessment, Final report, page 51.

Annex 6:
Comparison of functions on board the vessel

This annex is an extract from the external study in support of the impact assessment[36].

CCNR	UNECE	Danube Commission	Sava River Commission
Decksmann	Deck-hand	Decksmann	
Leichtmatrosen	Apprentice	Leichtmatrose	
Matrosen	Ordinary crewmen	Matrose	Ordinary crewman
Matrosen-Motorwart	Engine-minder	Matrosen-Motorwart	Engine-minder
Bootsmann	Able crewmen	Bootsmann	Boatswain
Steuermann	Helmsmen	Steuermann	Helmsman
			Chief Mate
Schiffsführer	Boatmasters	Schiffsführer	Boatmaster
Maschinist	Engineer	Maschinist	Engineer
	Electrician-engineers	Elektromechaniker	
	Radio operator	Funker	

Source: EDINNA

The Rhine region works with the Rhine regulations whereas the Danube countries work according to UNECE regulations or recommendations by the Danube Commission. The manning regulation of the Sava River Commission does not recognise the two starting functions. Member States have national manning regulations, based on the existing manning regulations of the River Commissions. As said, countries from the Rhine region have based their manning regulations on the Rhine regulation and this applies to the waterway network as defined in the Mannheim Convention. For the waterways not covered by the Mannheim Convention, different manning regulations can be applied at national level. A similar principle applies to the Danube countries, i.e. UNECE regulations or recommendations by the Danube Commission apply, however, countries can apply their own regulations for their national waterways.

Linked to the functions presented here above, professional qualifications are described in the relevant regulations of the governing bodies. Below is presented an overview of function descriptions and professional qualifications from the relevant regulations. It indicates that professional qualifications are to some extent harmonised, however, differences remain.

General overview

Currently in Europe, function names and descriptions seem not to differ a lot between relevant authorities, either being countries or river commissions. However, based on the analysis[37] of

[36] Panteia (2014), Recognition and modernisation of professional qualifications in Inland Navigation, Technical support for an impact assessment, Final report 2014, page 52-55.

the function descriptions and requirements of three river basins, six Member States and the UNECE, it can be concluded that there are many minor differences between the function descriptions and the required professional qualification. These differences have effects on the mobility of some workers.

Deckhands

The minimum age for deckhands is 16 years in every country, except of Austria. In this country, deckhands need to be at least 18 years old. The Sava Commission function descriptions do not include deckhands. Poland does not include deckhands either. See the Polish definition of an apprentice.

Apprentices

The Sava Commission does not include functions for deckhands and apprentices. This makes recruitment of personnel difficult, as newcomers to the sector will not be able to contribute to the daily operation of a vessel[38]. Other authorities agree on the function of apprentice: that should be a person of at least 16 years of age, with an education contract of a certified IWT education school. The only exception is Poland: a Polish operational worker will be regarded apprentice if he has undergone basic training in health and safety on board, issued by the boatmaster.

Boatman

Overall, two paths to the function of boatmaster can be identified from the function descriptions and requirements.

1. Boatman need to have completed an IWT training course and their minimum age is 17;
2. If they did not complete IWT training, their minimum age is set at 19 years and (in general) they need to prove three years of professional experience, of which at least one year in inland navigation and either two years in inland navigation or maritime. However, there are exceptions:
    a. Germany is least strict when it comes to the recognition of professional experience of lateral entrants. Normally, three years of professional experience, of which at least six months of professional experience in inland navigation is required. For workers aged 20 years or above, their gained professional experience is doubled. However, the doubling does not apply for the experience gained in inland navigation. Still, this is much less stringent than the other countries and river basins.
    b. In particular, the Dutch authorities are the strictest for applying for the function of Boatman. All other authorities (MS, River Commissions) ask three years (and a minimum age of 19) of professional experience[39] (with a minimum of one year in inland navigation and two years in either maritime or inland navigation) if no examination or completion of a training can be provided. The Dutch require

[37] See also Annex 3, Panteia et al. (2014), Contribution to the problem definition in the context of the preparation of the Impact Assessment regarding the recognition of professional qualifications in inland navigation

[38] Operators that want to train deckhands and/or apprentices, will not benefit from the deckhand and/or apprentice in such a way that no other crew member can be replaced by them. Thus their daily operation will be less efficient: more costs should be spend on personnel with nothing in return. In other river basins, adding a crew member leads to longer daily operating times.

[39] Austria only requires one year of professional experience. However, as deckhands need to be at least 18 years of age (instead of 16 years elsewhere), this brings no different at this point. The worker is only less experienced.

additional examination for boatmen. However, practical examination provides a loophole for this. This way, workers only need 60 days of experience in inland navigation as a deckhand.

c. In Poland, one will qualify for the function of Boatman after nine months[40] of experience in inland navigation and having passed a practical exam.

Engine-minders

For Engine-minders, function descriptions and requirements are harmonised within Europe. The national regulations of the Czech Republic do not include a function for engine-minders.

Able Boatman

In general, one can become Able Boatman if one has successfully completed training, the final examination of a boatmaster school or have passed any other examination for Able Crewman recognised by the competent authority and if at least one year of professional experience as Boatman can be proved. If the education lasted at least three years, no additional professional experience is required. If one did not complete an IWT education course, the requirements for the function of Able Boatman are at least two years of professional experience as Boatman. The CCNR offers a loophole: one can attend for a practical examination in accordance with the Rhine Licensing Regulations and once passed, the function of Able Boatman can be acquired with only year of professional experience at Boastman.

Some derogations from the standard can however be noticed:

- The function of Able Boatman does not exist in the national regulations of Germany.
- Austria does not make a distinction between the path based on education (two years) and the path based on only professional experience. After two years as Boatman, one can apply for the function of Able Boatman.
- In Poland, one can be an Able Boatman after six months of professional experience as Boatman.

Engineer

The function descriptions and requirements for Engineers are the same throughout Europe, with a small deviation from the standard in Austria and the Czech Republic. In general, engineers need to be at least 18 years of age and need to have passed an examination or a completion of a full training course in the engine and mechanics sector, or they need to be at least 19 years of age and prove at least two years of experience as an engine-minder on a self-propelled vessel.

Some derogations to this:

- Austria and the Czech Republic do not include a minimum age for engineers that gained their function based on two years of experience as an engine-minder;
- In Poland, at least 20 months of professional experience in inland navigation plus a minimum 16 months of professional experience at shipyards will result in the function of engineer too, but only if the mandatory exam is passed.

[40] A month is defined as a maximum of 15 days in a period of 30 days.

Helmsman

The general requirements for the function of helmsman in Europa are at least:

1. One year of professional experience in inland navigation as Able Boatman, or;
2. Three years of experience as Boatman.

However, small deviations can be notified throughout Europe;

- On sections where KSS is required, not having KSS but having a license results in the function of helmsman (instead of boatmaster);
- The Danube Commission and the Sava Commission award the function of Helmsman after a vocational training of at least three years is completed, and if practical examination approved by the competent authority is passed. This in in line with the UNECE resolution that is applied in countries such as Ukraine and Russia.
- Germany requires two years of professional experience as Boatman or engine-minder. This seems a deviation of the standard, but it is however a result of not applying the function of Able Boatman in their national regulations. For workers that have not completed a vocational training, this approach reduces the path to the function of helmsman by one year.
- The Netherlands and Belgium do not award the function of helmsman after vocational training of at least three years of completed. However, after having passed examination, the function of helmsman will be awarded.
- In the Czech Republic, a minimum of at least two years of professional experience as Able Boatman is required.
- In Poland, one needs to prove six months of professional experience as an Able Boatman or 12 months as Boatman. For both paths, examination of the required knowledge and practical skills is obliged.

Annex 7:
Overview of KSS requirements in the eu member states

This annex is an extract from the external study in support of the impact assessment[41].

Table 2 KSS in EU Member States

Country	Stretch	Required knowledge / experience	Procedure
Austria	a) Km 2094,5 (Wallsee)– km 2060,4 (Persenbeug) (b) Km 2032.8 (Melk) –km 1979,8 (Altenwörth) (c) Km 1921 (Wien–Freudenau)–the Austrian–Slovak border	16 trips on the respective stretch (8 upstream, 8 downstream)	Experience is shown through service booklet
Bulgaria	Danube (E 80) – total of 11 stretches	At least 16 runs for each sector of Danube for which the certificate is delivered.	Several examinations, including a written test.
Croatia	All of Danube (E80) Km 1433–km 1295.5	16 trips on the respective stretch (8 upstream, 8 downstream)	Experience is shown through service booklet and take exam
	Sava (E80-12)	16 trips on the respective stretch in the last 3 years (and 3 times in each direction in the last 3 years) plus local conditions and regulations.	Experience is shown through service booklet and take exam
France	Rhine (E 10). There is a 18 km stretch of the Rhine at the border with Germany between Iffezheim and Lauterbourg		
	Seine Maritieme (E80) – Km 260.100 to Atlantic Ocean, a total of five stretches	For barges or convoys with a length smaller than or equal to 135 metres: at least 12 trips on the respective stretch in the last year prior to the exam, plus local conditions and regulations. For barges or convoys with a length greater than to 135 metres: at least 20 trips on the respective stretch in the last year prior to the exam, plus local conditions and regulations.	Experience is shown trough service booklet and take exam. If the applicant passes the exam, his license will be valid for a maximum of three years. In order to renew the license, at least 6 trips on the respective stretch should have been made in the past three years, of which at least 2 in the last year prior to renewal for barges with a length smaller than or equal to 135 metres. For barges larger than 135 metres, at least 12 trips should have been made on the respective stretch in the last three years, of which at least 4 in the last year prior to

[41] Panteia (2014), Recognition and modernisation of professional qualifications in inland navigation : technical support for an impact assessment, p.187-190**.**

Country	Stretch	Required knowledge / experience	Procedure
			renewal. Besides, a proof of physical and mental fitness, not being older than three months, should be provided in order to renew the license.
	Harbour of Marseille-Fos and connecting channels to the Rhône (E10) [42]	10 trips on the respective stretch/area in the last year prior to the exam, plus local conditions and regulations.	Experience is shown through service booklet and take exam. The Local Knowledge Certificate will be valid for a year. In order to renew this license, the applicant should have made at least five trips in the year prior to renewal. Besides, a proof of physical and mental fitness, not being older than three months, should be provided in order to renew the license.
Germany	Rhine (Iffezheim - Spijksche Veer);	16 trips on the respective stretch in the last 10 years (and 3 times in each direction in the last 3 years) plus local conditions and regulations.	Experience is shown through service booklet and take exam
	- Elbe (Schöna - Hamburg Port); - Weser (Hannover-Münden - Oberweser); - Danube (Vilshofen - Straubing); - Untere Havel-Wasserstraße (Plaue - Havelberg), if water at Unterpegel Rathenow is above 130 cm; - Oder (Ratzdorf - Widochowa); - Saale (Elbe - Calbe).	16 trips on the respective stretch in the last 10 years (and 3 times in each direction in the last 3 years).	Experience is shown through service booklet
Hungary	All of Danube (E80) Km 1811–km 1433	16 trips on the respective stretch (8 upstream, 8 downstream) plus local conditions and regulations. Half of the practice should be carried out in the quality of helmsman and within 18 months prior to the examination	Experience is shown through service booklet and take exam. Use of interpretation is allowed.
Poland	There are some stretches on Vistula and Oder affected		

[42] For vessels with a length smaller than 70 metres and not transporting hazardous cargoes, no Local Knowledge Certificate is needed. For vessels transporting hazardous cargoes, this limit is 50 metres.

Country	Stretch	Required knowledge / experience	Procedure
Slovakia[43]	Austrian – border stretch Hungarian border stretch	At least 16 runs for each sector of Danube for which the certificate is delivered.	Experience is shown through service booklet and take exam
Schweiz	Basel – Augst KM 167 – KM 156	16 trips on the respective stretch in the last 10 years (and 3 times in each direction in the last 3 years).	Experience is shown through service booklet
	Augst – End of Rhine MK 156 - KM 150	8 trips on the respective stretch (4 upstream, 4 downstream in the last two years).	Experience is shown through service booklet
United Kingdom	Tidal River Thames (Putney Bridge - eastern limit of the Thames Barrier Control Zone)	6 months / 60 days of service, including work in different directions, in varying conditions and darkness Local conditions and regulations	Show experience through service booklet and take exam
	Portsmouth Harbour Isles of Scilly	6 months / 60 days of service Local conditions and regulations	Show experience through service booklet and take exam
	Padstow Harbour	6 outward, 6 inward journeys under supervision of a Harbour Authority representative Local conditions and regulations	Show experience through service booklet and take exam
	Bristol Port Caernarfon and Menai Strait Dee Conservancy Dover Harbour Fowey Harbour Gloucester Harbour Port of Liverpool Teignmouth	Local conditions and regulations	Take exam

Panteia (2014): underlying source: Combination of (i) Europe Economics (2009) Impact Assessment and Evaluation Study "Proposal for a Legal Instrument on the harmonisation of boatmasters' certificates in Inland Waterway Transport" and (ii) UNECE (2010) "Exchange of Information on local knowledge requirements in the ECE countries", Sava Commission (2011) and the authorities in Croatia and Slovakia (2014) , ARRÊTÉ N° 21/2011 DU 21 MARS 2011 (Calvados) and Arrêté du 8 août 2008.

[43] On the 56 kilometre stretch that is entirely in Slovakia, there are no KSS requirements.

Annex 8:
Affected parties and their key interests

Affected parties and their key interests

Stakeholder	Description	Key interests
Boatmasters and other crew members	Human resources - Around 42.000 people	Pay and employment conditions, health and safety in the workplace, valorisation of qualifications and professional careers, low administrative burden
Workers from outside the IWT sector	Human resources – Workers coming from the fishery or maritime sector but also workers from outside the waterborne sector willing to change their carreer.	Acknowledgement of the value of their past experience, possibility to access to a high level IWT qualification in a quick way, pay and employment conditions, health and safety in the workplace, low administrative burden
Ship owners, barge operators	Ship operators providing freight and passenger services within the EU. Around 9700 entreprises. The majority are micro-entreprises (vessels owned and operated by a family).	-Cost-efficient and reliable freight and passengers services -Safety and low administrative burden -High quality of trained staff on board the vessels
MS regulators and enforcement bodies	National, regional and local bodies regulating and enforcing IWT legislation. IWT regulatory and enforcement framework is characterised by a high degree of fragmentation.	- Facilitation of the decision-making process - Effective enforcement -Prevention of accidents (for people, economic impact and environment)
River Commissions	International organisations with administrations enabling them to address all issues concerning inland navigation on the concerned rivers. - Rhine Commission (MS: FR, DE, NL, BE and CH) – adopt binding regulations - Danube Commission (MS: AT, BU, HU, DE, MD, RU, SR, SK, UA, HR) - Sava Commission (MS: HR, SR, BA, SI)	Each river commission should ensure for the river under its authority: - free navigation for the vessels flying the flags of their MS - uniform regulations for entire navigable length - safety of navigation, for both people and the environment - qualifications and a social framework suited to the navigation workers
UNECE	United Nations Economic Commission for Europe, consisting of 56 member states, has two working parties on inland waterways	- Smooth and efficient inland water transport across the ECE region - Pan-European dimension of inland waterways
Education and training institutes	Inland waterway navigation schools and training institutes	High quality of trained staff on board the vessels.
Industry using IWT	Barge industry and agricultural groups	Cost-efficient and reliable freight and passengers services
Freight forwarders	Agents who act on behalf of third companies or persons to arrange the best means of transport, taking into account the type of goods and customers' delivery requirements	Safe, efficient and cost-effective transportation of goods on the inland waterway network

Annex 9:
Training and qualification rules in other transport modes

In the last decade, the EU has adopted legislation for other transport modes harmonising the requirements with the main objective of transport safety. Recitals of the legislative instruments always mention that such rules at EU level should also contribute to the aims of EU policies on the freedom of movement of workers/persons, freedom of establishment and freedom to provide services in the context of the common transport policy, while avoiding any distortion of competition. As far as the level of harmonisation is concerned, the aviation sector with an EU Regulation reached the most unified system. As it includes all seafarers and refers to STWC standards[44] the legislation for the maritime sector has however the largest substantial and geographical scope. Below the legislative instruments regulating training and qualification rules in other transport modes are briefly presented:

Maritime: Directive 2008/106/EC[45] sets out the rules on training and the standards of competence to be met by seafarers who are candidates for the issue or revalidation of certificates that allow them to perform the functions for which the relevant certificate of proficiency is issued**.** Recital n°6 mentions that 'a standardised level of training for all seafarers serving on board is vital for the viewpoint of maritime safety'. The directive requires that officers (at managerial and operational levels) must have completed approved education and training and have to meet the stipulated standards of competence. A number of other crew members (ratings) must also have completed onboard training and meet standards of competence for obtaining their qualification.

Aviation: Regulation 216/2008/EC[46] lays down essential requirements applicable to persons and organisations involved in the operation of aircraft, and to persons and products involved in the training and medical examination of pilots. Implementing Regulation (EU) No 1178/2011[47] related to civil aviation aircrew regulates conditions for certifying pilots and persons involved in their training and testing. Requirements for training course and examination for attestation of cabin crew members are also specified. Training shall be provided by approved training organisations performed by qualified personnel and conducted according to the training programmes and syllabus documented in the organisation's approval. Pilot training is already highly sophisticated and is continuously adapted to the development of aircraft types and navigational technologies. In pilot training it is also expected that the development will be towards evidence based training and competency based training as this is expected to better accommodate future trends in man-machine interface training taking into account human factors as technology develops further.

[44] The 1995 STCW Convention is one of several key initiatives that underpin this new philosophy at IMO. It seeks to establish a baseline standard for the training and education of seafarers throughout the world by placing an emphasis on quality control and competence-based training. It has 133 IMO signatory countries in the world. See: http://www.stcw.org

[45] Directive 2008/106/EC of the European Parliament and of the Council of 19 November 2008 on the minimum level of training of seafarers, OJ L 323, 3.12.2008, p.33.

[46] Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, OJ L 79, 13.3.2008, p.1.

[47] Commission Regulation (EU) No 1178/2011 of 3 November 2011 laying down technical requirements and administrative procedures related to civil aviation aircrew, OJ L 311, 25.11.2011, p.1.

Rail: Directive 2007/59/EC[48] on the certification of train drivers operating locomotives and trains on the railway system in the Community ensures recognition of licences and harmonised complementary certificates by all railway sector stakeholders. The directive addresses both examination and training. As far as training is concerned, not only professional knowledge required for obtaining the licence is concerned but also training method, training objectives, training tasks (requirements for instructors) and process of continuous training.

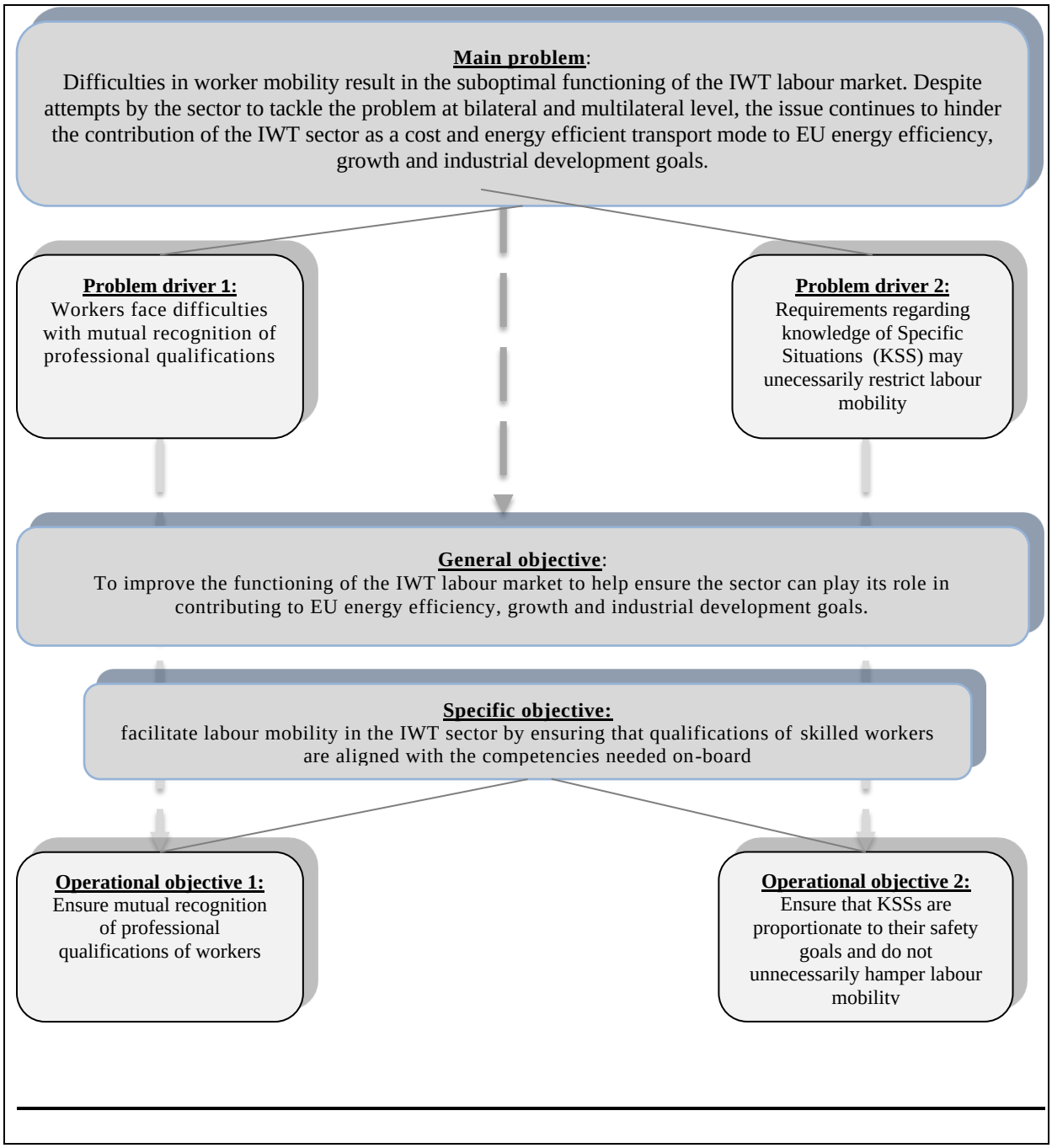
Road: Directive 2003/59/EC[49] on the initial qualification and periodic training of drivers of certain road vehicles for the carriage of goods or passengers sets qualification requirements for drivers of buses or lorries. According to the directive, a bus or truck driver in addition to the relevant driving licence needs to have obtained a certificate of professional competence. The Directive requires drivers to prove their initial qualification either through a combination of training and theoretical test or of practical and theoretical exam. It also requires periodic training. The Commission is working on a review of this directive. The intention is to submit a proposal that will specify higher training requirements formulated in terms of skills and competencies, in line with the European Qualifications Framework.

[48] Directive 2007/59/EC of the European Parliament and of the Council of 23 October 2007 on the certification of train drivers operating locomotives and trains on the Community's rail network, OJ L 315 of 3.12.2007.

[49] Directive 2003/59/EC of the European Parliament and of the Council of 15 July 2003 on the initial qualification and periodic training of drivers of certain road vehicles for the carriage of goods or passengers, OJ L 226, 10.9.2003, p. 4–1.

Annex 10: problem – objective tree

In the figure below an overview is given of the general, specific and operational objectives, while linking them to the general problem and its underlying problem drivers.



Annex 11: discarded policy measures

Below it is explained why certain policy measures have been discarded.

A. Discarded policy measures

1. Rules for crew on recreational craft

Today no harmonized EU rules exist for licenses to navigate recreational craft. This initiative will not consider to alter this situation as it is aimed solely at professional qualifications. Extending the regulation to the operation of recreational craft does not seem proportionate, in view of the number of cross-border recreational craft on inland waterways and of the fact that no major safety issues in relation to the lack of European intervention in this field have been reported. As significant additional administrative burden would be imposed for the alignment of national certification systems, and education and examination standards, EU intervention may moreover not be cost-effective. A minority of Member States has nevertheless indicated to be in favor of regulating navigation of recreational boats at EU level. It is also questionable whether such an initiative would pass the test of the subsidiarity principle.

This segment of the market is also not left without further initiatives. At UN level the UNECE 'Resolution 40' already covers this category of craft[50]. Furthermore, the European Commission (under the lead of DG ENTR) is conducting a study on recreational craft with the objective to identify the main problems preventing more effective development of the sector and to come up with possible solutions. In this context, a detailed identification of the different training requirements for skippers of recreational craft with a length below 24 m will be carried out in all EU Member States as well as a quantification of the potential for employment in this market segment. In parallel, the Commission (under the lead DG MARE) is also considering to evaluate the subject of common boating licenses for recreational use by private individuals. The Commission will therefore take position at a further stage on the most appropriate actions to be taken for this specific sector.

2.Introduction and mutual recognition of certificates with exam for all skilled crew members beyond the categories of boatmaster and boatman (e.g. able boatmen and helmsmen)

It is not considered to introduce exams for all crew members below the category of boatmaster (including able boatmen and helmsmen) as the improvements of safety from covering also these categories are not clear. Indeed, skilled crew about the level of boatman would already have obtained the boatman qualifications, and only marginal improvement could be expected from requiring additional exams. Moreover, the Member States did not favour such a policy measure. The results of the online public consultation were also mixed on this point. As the analysis of the main problem did not reveal specific problems with intermediate crew categories, their recognition of professional qualifications through the experience as documented in the service record books is maintained.

[50] It recommends to issue an international certificate concerning the competence of operators of pleasure craft bound for the waters of foreign countries. Ten Member States, Switzerland and Croatia apply Resolution 40. Recommendations on Harmonized Europe-Wide Technical Requirements for Inland Navigation Vessels, Resolution No. 61, Revision 1' defines “recreational craft” as 'a vessel, other than passenger vessels, intended for sport and pleasure and of a length of 20 meters and more'.

3. The electronic service record book and logbook

As mentioned in section 3.3.1.2 of the IAR, the service record books are not fit for purpose as regards their content and format. Paper format is considered to be outdated and generates administrative burden for both the authorities in charge of verifying documentation and crew members. This issue is confirmed by respondents to the online public consultation. 70% of the total respondents asked for the introduction of an electronic service book (e-SRB) and a related central register for e-SRBs. Support was highest amongst employers' organisations and public authorities. More than 60% of the shipping companies, boatmasters and entrepreneurs/ship owners also consider it at least 'somewhat appropriate'. After addressing the subject with members of the CEG in meetings and by questionnaires which were sent to them, it became clear that the e-SRB should be introduced simultaneously with the e-logbook for efficiency reason.

Adding this measure to some policy options would have been logical because it could have provided an efficient solution for some SRB problems and had strong support from stakeholders. However, the introduction of e-SRBs and e-logbooks requires a very specific and multidimensional cost-benefit analysis because such electronic tools may be used more widely than for professional qualifications in IWT. A decision has therefore been made not to include this measure in the policy options for the moment. Preparatory works are ongoing between the Commission services and relevant actors regarding the possibility of making a proposal to introduce e-SRBs and e-logbooks in due course. In this case, if appropriate, a separate impact assessment will be carried out.

4. Harmonised/identical EU wide requirements for professional qualifications and KSS

Instead of European minimum requirements, harmonised requirements would be imposed. Measures imposing a uniform system to all Member States without any possibility for Member States to take into account the national specificities of their IWT sector. Therefore, in line with the proportionality principle, this has been discarded: similar results could be achieved with the introduction of minimum requirements only.

5. Waving the possibility of exemption for qualification of crew operating exclusively on non-interconnected waterways

The evaluation of the existing legislative framework concluded that this exemption does not affect free navigation in the European Union[51]. As a result of the use of the possibility of exemption, restrictions to labour mobility do exist (e.g. boatmasters 'licence issued in United Kingdom or Portugal are not recognised on other EU inland waterways) but are limited in number of workers affected. In order to respect the proportionality and subsidiarity principle this measure has therefore been discarded after a preliminary analysis.

[51] Panteia (2014), Evaluation of the relevant directives related to the initiative on recognition and modernisation of professional qualifications in inland navigation (Directives 91/672/EEC and 95/50/EC), p.38.

Annex 12:
Quantitative approach to safety – methodological remarks

Next to a qualitative description of the measures on safety, the IAR provides for quantitative data in order to give an indication of the magnitude of the potential impact. To this end, input from the external support studies[52] to the IAR was used.

It should be underlined that the quantitative analysis is only provided by illustration only. Uncertainties and limitations to this exercise should be acknowledged. The quantitative results do not have the intention to provide for exact cost-estimates or accidents number but to complement and illustrate the qualitative reasoning and to provide an indication for a possible order of magnitude of impacts in quantitative terms.

As a preliminary remark it is important to stress that the differentiation between the two groups of Member States (referred to in the studies and in the IAR as CCNR and non-CCNR countries) and their relative performance as regards the output of their education systems in terms of competencies of the boatmasters is not determined by the two Dutch databases used by the consultants. If this would have been the case, the methodology would have been flawed: one cannot first divide a set of Member States in two groups according to their accident levels and then make an analysis for the two groups of the accident levels on the basis of the same data and come to the conclusion that the difference in accidents is due to different levels of education. For the IAR, the differentiation between groups of Member States according to their level of has been done in a first step on the basis of different data independent from the accident databases. The two Dutch databases have then been used in a second step to test the hypothesis of the interrelationship between quality of education systems and accident frequency and to provide an indication of possible consequences of the shortcomings in quantitative terms. This two-step approach is explained below.

<u>Step 1:</u> Analysis of the situation with regard to education/training standards resulting in two categories of countries: 1) DE, FR, BE, NL and 2) the other countries.

The PLATINA I project[53] has made a comparative analysis of the training curricula in Member States based on the inventory of IWT schools and their curricula made. The project has counted the amount of relevant[54] competencies per topic from the Standards of Training and Certification in Inland Navigation (STCIN)[55] (i.e. 53 competencies) for the training institutes represented in PLATINA I for both the staff at operational level and management level, and divided the amount of competences covered by the curricula by the total number of

[52] Panteia et al. (2014), Contribution to the problem definition in the context of the preparation of the Impact Assessment regarding the recognition of professional qualifications in inland navigation, p.73-82, Panteia (2014), Technical support for an impact assessment: Recognition and modernisation of professional qualifications in inland navigation, p.37-61 and Panteia (2015), Addendum, complementary figures on safety impact in the context of the technical support for the impact assessment on the recognition of professional qualifications in inland navigation.

[53] PLATINA 1 D3.8, Strategy for harmonized IWT education and training standards, Annex II (BDB, 2010)

[54] Specific information about passenger transport has been considered irrelevant, as both our analysis on safety focus on freight transport only.

[55] EDINNA (2011), Development of the Standards of Training and Certification in Inland Navigation. http://www.unece.org/fileadmin/DAM/trans/doc/2011/sc3wp3/ECE-TRANS-SC3-WP3-inf10e.pdf

competences per category. This way, scores per training institute were presented per topic. Based on this comparison **two groups of Member States were formed**: 1) DE, FR, BE, NL (best performers[56]) and 2) other countries (extrapolated to all non-CCNR countries based on expert views):

The **strong link between training and therefore qualifications/competencies on one hand and safety on the other is beyond any doubt**. This strong interrelationship is the driving force behind the major efforts made on training and qualifications in all transport modes – aviation, maritime, rail, road. It provides also the rationale for linking higher education/training standards and more generally the introduction of competencies standards with an increase of safety performance. It is because of this generally accepted interrelationship that the difference in accident rates have been tested between groups of Member States with varying levels of quality of education (step 2), with a view to bring some elements of quantification.

Step 2: Differences in accident frequencies are calculated for each group of Member States identified in step 1), on the basis of accident statistics available intwo Dutch databases. These accident frequencies are then extrapolated to the EU level in order to obtain a quantitative indication of the number of accidents that may be caused by suboptimal education/training and by lacking competency standards.

As regards the Dutch databases…

- 2 databases from the Netherlands have been used:
  - one database from the Labour Inspectorate (work related accidents)
  - one database from Human Environment and Transport Inspectorate (navigation related accidents)
  - there are no overlaps between the two databases (only 1 out of 2290 accidents overlap)
- No other IWT specific databases are available in Europe that provide a sufficient number of registered events and the necessary information, including the accident causes and the nationality of those who were involved.
- The data in these databases is considered to be a sufficiently representative sample for European IWT. The fact that more than 35% of European IWT takes place on Dutch territory provides reasonable support for this assumption.

[56] It needs to be noted that even the best performers do not cover all competencies, so further improvements could also be made in these countries.

Annex 13:
Detailed information on investments costs for option C

Section 6.2.3 table 2 presents a summary overview of the investment cost estimates that are linked to option C. More detailed explanation can be found in this annex with relevant references for the assumptions and the underlying calculations behind the cost estimates.

Impact on investment costs resulting from the introduction of competence-based minimum requirements for boatmasters certificates tested through a practical exam (measure 2): introducing this measure under option C may require investment costs associated with the introduction of practical exams. Practical exams to obtain a boatmaster certificate already exist in AU, BE, FR, HU, NL[57], PL and RO. Other countries (BU, HR, CZ, DE and SK) would need to develop exams and programs. Based on the experience of the Netherlands, the development costs of a new intensive practical programme for boatmasters are estimated at a maximum of €100,000 per Member State. Since the format of the standard exam for boatmasters can be much simpler, and since Member States can base their new practical exams upon those already in place in other Member States, real investment costs are expected to be much lower. The development of a practical exam for boatmasters is therefore estimated at €10,000 to €100,000 per Member State where such an exam is not yet in place.
In addition, investment costs for an examination ship or a simulator may have to be considered. The recent HINT study[58] estimated that the acquisition costs for a new school ship amounts to €2.1–3.2 million. Although training ships are quite frequently used in Western Europe, there are none for the entire Danube corridor. In this study, Danube countries are considering sharing one ship in order to share investment costs. As a possible alternative or complement to a training ship, the investment costs of a simulator is taken into account, estimated at €1 million.[59] Finally, requiring candidates to bring the boat (their own or rent) for their own examination could also be an alternative which would entail no additional investment. This approach is already adopted in a number of Member States with a mandatory practical exam (e.g. FR and AT). As an average costs for all MS with no requirements for practical exams, a rough estimation of 5.5 million[60] has been used for investment costs, knowing that cheaper alternatives exist.

Impact on investment costs resulting from the introduction of a mandatory exam at boatman level (measure 8): **not significant**. If Member States decide to opt for an administrative exam only, no investment costs are incurred, since all of the topics to be tested for boatman are already tested in the boatmaster exams. On the other hand, the costs of developing a practical exam for boatmen are estimated at maximum €100,000 per country.[61] As standard exams for boatmen can have a much simpler format and as Member States can draw upon practical

[57] Not in a systematic way for the standard boatmaster certificae but for lateral entrants.
[58] Hint (2014), Danube school ship, concept.p.9. see http://www.hintproject.net/getpage.php?page=danube-school-ship.
[59] Information provided by STC on November, 7th 2014. Until now, no simulator producer is already offering ship-handling simulators for inland navigation and training purposes. For this reason, prices may vary, according to functional and technical standards offered.
[60] 55.000€ per MS * 5 + 2.6 million *2 = 5.5 million.
[61] Panteia (2014) Addendum on the estimated costs for the introduction of an administrative exam for getting the qualification of boatma based on information provided by STC on May 6th, 2014.

exams already in place in other countries, the real investment costs are expected to be much lower. Moreover, additional investment costs for the training vessel(s) or simulators are not needed as these are already incurred for the mandatory practical examination of boatmasters.

Impact on investment costs resulting from certificates for large convoys (measure 2): investment costs for this aspect of the measure, compared to BAU, are related to the fact that all current workers on large convoys will have to obtain a certificate stating that they are permitted to operate on such a vessel. The total investment costs of this measure for EU Member States are **insignificant**[62].

Impact on investment costs resulting from EU harmonised SRB and logbook (measure 10): As there would be no requirement for replacing existing paper SRBs and only new SRBs would be are issued in line with the harmonised EU model, it can be considered that there are **no** investment costs.

Impact on investment costs resulting from harmonised qualifications for operational workers and mutual recognition (measure 7): no investment costs are expected apart from human resources costs incurred by national administrations setting up new standards. These would remain **very limited** though since Member States under measure 7 do not have to integrate in their systems all the recognised qualifications defined at EU level.

Impact on investment costs resulting from the **optional** introduction of a practical examination programme for workers entering from outside the sector (measure 12): since investments costs for the development of practical exam programme(s) have already to be incurred for the mandatory practical examination at boatmaster level under the competence based system for measure 2, costs are not to be duplicated as the investments can largely serve both purposes. However, separate certification/recognition will be required as third paths for entry to the profession constitute distinct programmes. The external study has estimated the costs for certification at around €9,000 per programme.[63] On this basis, investment costs can be estimated at €108,000€ at EU level under option C, assuming that within the 11 interconnected Member States which have training institutes, the 'participation rate' would be 50%, either because a number of Member States would organize such a programme only at one level (boatmaster or boatman) or would not organize it at all.

Variant C1 only*: Impact on investment costs due to minimum competence-based standards for examination of future boatmen and boatmasters in schools and training institutes (measure 3)*: variant C1 would entail investment costs resulting from the introduction of an accreditation/recognition system of IWT schools and training institutes programs and corresponding diplomas or certificates. The external study estimated that if all institutes were to adhere to the minimum standards, the investment cost would amount to around €420,000[64] for the **initial recognition**/accreditation. However, as this cost estimate is based on the general high standard accreditation system of higher education systems (high schools and universities) in the Netherlands and Flanders, one might consider that a less stringent

[62] Panteia (2014), Recognition and modernisation of professional qualifications in inland navigation : technical support for an impact assessment, p. 33-35
[63] Idem p.142
[64] Idem.

certification/recognition system would be introduced in the IWT sector. As such, a more cost effective approach (as outlined by EDINNA[65]) would be that an inspector/auditor of the Ministry of Transport[66] executes an inspection to verify that the school's examination program meets the requirements of the standards. **In most Member States, there is already a shipping inspectorate or similar body**. To facilitate such inspections EDINNA will finalise in the coming year their "LDV TOI" program with the deliverable "Course Manual". This manual can be used by every IWT education and training institute to prove that they meet the standards requirements. EDINNA is also responsible for the project of developing a quality and assessment system which could be used for such inspections. This would simplify the process and reporting for the inspection authorities and reduce investment costs considerably.
Furthermore, investment costs will be needed for the **modification** of training and examination programs necessary for meeting the required EU competence standards. The costs related to the adaptation will strongly vary from school to school, depending on their existing levels of standards. Although generic course material are being developed by projects within EDINNA, some courses may need to be tailor-made. Adaptation costs may run into the hundreds of thousands of Euros according to STC. However, recent experience has revealed that only 80 person-hours were needed to adapt an existing curriculum of a school to new more stringent requirements[67]. Hence, the investment costs can be estimated to range between several thousands and several hundreds of thousand euros per school. Considering that the estimation of several hundreds of thousands of euros is at the high end, this would represent for the 43 identified programmes in the EU[68], an investment cost in the range of €400,000 – €4,000,000. It could however also be considered that these costs, although **significant,** are **inherent to the necessary adjustments education and training system have to make anyway if they wish to keep up with external (including technological) developments**.

B) Impact of the policy options on investment costs due to measures linked to KSS

Under option C**,** a **justification** of KSS requirements based on the criteria and principles outlined in the legislation is required. Investment to be incurred mainly concerns some **extra work for the administration**, but no specific highly technical study would be required. Option C also allows Member States to organise **KSS exams** for all KSS in Europe. This would incur translation costs for exams that will take place through multiple choice questions. These costs are difficult to estimate at this stage as they will depend on the examination requirements and on the number of Member States that will wish to organise KSS exams for stretches located in another Member State. If KSS is tested with a simulator, it is considered that no investment would be needed, based on the assumption that only Member States that possess simulators would organise such exams. If KSS is tested with by completing journeys on the waterway sectors concerned, no investments would be needed neither, as this cannot be tested by the other Member States.

[65] Information communicated by EDINNA to the Commission on 30/11/2014
[66] Or another ministry depending on the system applicable in each Member State.
[67] Data comunicated by CERONAV to the Commission on 16/12/2014.
[68] Panteia (2014), Recognition and modernisation of professional qualifications in inland navigation : technical support for an impact assessment p. 142.

Annex 14:
Detailed information on administrative costs for option C

Section 6.2.4 table 3 presents a summary overview of the administrative cost estimates that are linked to option C. This annex provides more detailed explanations on the assumptions and the underlying calculations behind the cost estimates.

A) Impact on recurrent administrative costs linked to mutual recognition of professional qualifications

Impact on recurrent administrative costs due to minimum standards linked to the frequency of the medical check-up (measure 2): Different levels of frequency of medical check-up would obviously influence the administrative costs. Introducing the more stringent approach CCNR-standards to all Member States will result in more costs than applying a system with less frequent check-ups (e.g. the Directive 95/50/EC approach or the new frequency). The external study[69] concluded, taking 2030 as a time horizon, that the new frequency produces the highest savings (Net Present Value: around € 7,7 million), followed by the EU Directive (Net Present Value: € -2,3 million. The stricter CCNR-policy would result in more costs (Net Present Value: € 1,3 million). With a time horizon of 2050, these Net Present Value figures are respectively € -13,2 million € 3,3 million and € 2,1 million.

Impact on recurrent administrative costs due to minimum standards linked to competence based approach tested by a practical exam for boatmasters (option C with measure 2 + in case of C1: measure 3): Option C would lead to extra administrative costs as practical exams would be mandatory introduced. Variants C1 and C2 are affected in a different way. Only boatmasters obtaining their professional qualifications via the experience based path will do a practical exam in case of option C1. Average cost estimates take into account two scenarios: 1) exam has to be carried out on a dedicated school ship that needs to be chartered for a day and 2) candidate has to use his own ship. Based on estimated costs for practical exams (e.g. school ship, assessors) the external study concluded that the average Net Present Value of this measure would be for variant C1 € 0.5 million taking 2030 as the time horizon and € 0.7 million taking 2050 as a time horizon. For variant C2, the amounts are €1.9 taking 2030 as a time horizon and €2.8 with 2050 as a time horizon. Further information on the assumptions and the underlying calculations can be found in the external study and attached Addendum[70].

Impact on recurrent administrative costs due to the introduction of a boatman exam (option C with measure 8 + in case of C1: measure 9): Option C would lead to extra administrative costs as mandatory exams would be introduced. Variants C1 and C2 are affected in a different way. Only boatmen obtaining their professional qualifications via the experience based path will take an administrative exam in case of option C1, whereas 100% in case of option C2. Average cost estimates take into account various combinations for theoretical and/or practical exams. The external study concluded that for variant C1 the average NPV of this measure

[69] Panteia (2014), Recognition and modernisation of professional qualifications in inland navigation : technical support for an impact assessment, p 79-81

[70] Panteia (2015), Addendum, complementary figures on administrative costs for examination in the context of technical support for an impact assessment for the recognition of professional qualifications in inland navigation.

would be € 0.8 million taking 2030 as a time horizon and € 1.3 million taking 2050 as a time horizon and, for variant C2, €3.5 million taking 2030 as a time horizon and €5.2 million taking 2050 as a time horizon. Further information on the assumptions and the underlying calculations can be found in the external study and attached Addendum[71].

In case of option C1 only, impact on recurrent administrative costs due to education and training standards measures (measure 3 and 9)

The measures linked to education standards will lead to administrative costs in variant C1 of option C due to the mandatory recognition/accreditation system. In order to maintain a certification, the IWT training and education centres will need to be checked every couple of years in order to verify whether they are still compliant with the relevant standards. Member States opting for a system based on recognition (following inspection) will incur a lower administrative burden than those opting for accreditation, where compliance with the mandatory EU minimum competence-base standards for examination needs to be verified by a third party.

The external study concluded that for all IWT institutes in the EU, the total annual costs for the certification amount to around €0.7 million based on a compliance check performed every 6 years[72]. The Net Present Value of administrative costs adds up to €8.3 million by 2030, and up to €13.2 million by 2050. Further information on the assumptions and the underlying calculations can be found in the external study.[73]

However, these figures need to be interpreted with caution. No estimations have been found for specific accreditation systems for IWT education. The external study therefore estimated the administrative costs by using costs estimates from the high-standard accreditation system of higher education in the Netherlands. The quality assurance system as put forward in option C will however be less stringent than the accreditation system of higher education in the Netherlands. Therefore, costs are expected to be much lower.

Based on discussions with Member States, DG EAC, EDINNA and schools that went through recognition process with the CCNR, it was considered that these costs could be considerably reduced in the IWT context if the Member States opt for a recognition system instead of an accreditation. Administrative costs related to recognition are considered not significant. The The external study estimates have therefore been reduced by one third, and even this is considered to be an estimation at the high end of the range. Experience of the implementation of the Directive 2007/59/EC on the certification of train drivers underpins this assumption. Under article 20 of the Directive, the choice is left to the Member States to opt for a recognition or for an accreditation system. As a result, accreditation is used in very few MS and when it is used it is limited to a certain category or for a specific purpose.

Impact on recurrent administrative costs due to harmonization of required information in SRBs and logbooks (option C with measure 10): With regard to SRBs, administrative costs would be saved with option C as non-Rhine workers may have their SRBs checked in their own country in case they acquire enough navigation time to promote to a higher Rhine

[71] Panteia (2015), Addendum, complementary figures on administrative costs for examination in the context of technical support for an impact assessment for the recognition of professional qualifications in inland navigation.
[72] Inspectie van het Onderwijs (2005), Accreditatie: de kosten in kaart
[73] Panteia (2014), Recognition and modernisation of professional qualifications in inland navigation : technical support for an impact assessment, p 145-146.

function. Currently, only Rhine authorities can award functions on the Rhine. The external study concluded that the Net Present Value of these savings with regards to administrative costs adds up to € 0.1 million by 2030 and € 0.2 million by 2050. With regard to logbooks, no specific costs would be saved or added. Further information on the assumptions and the underlying calculations can be found in the external study.[74]

Impact on recurrent administrative costs due to the introduction of practical exam for workers from outside the IWT sector (optional - option C with measure 12): In option C the practical exam would be voluntary introduced by Member States. The price for a practical exam programme at boatman level is estimated per candidate at 800€ and at 6000€ at boatmaster level. These prices are those applicable in the Netherlands in 2014[75]. The prices cover the costs of procedure, portfolio check, sailing time check, training and assessors. In addition yearly operating cost for the training vessels and/or simulators should also be taken into account. These are however assumed to be already covered by measures linked to boatman and boatmasters from inside the IWT sector.

B) Impact on recurrent administrative costs of the policy options linked to knowledge of specific situation (KSS)

Option B would not bring about any additional administrative costs compared to option A. Option C on the other hand would influence the administrative costs through the possibility for Member States to organise exams and issue authorisations for all KSS in all Member States.

The administrative costs for all Member States together would not change much as it is expected that only a limited number of additional boatmasters would take KSS exams compared to the baseline. Only the country in which the exam takes place would change. Therefore, although at EU level no significant extra administrative costs are foreseen, certain Member States will see an increase of their costs due to the increased number of exam participants. This could for example be the case for Poland and the Czech Republic as several of their boatmasters would no longer go to a Rhine country to have their KSS on the Rhine River attested. Instead, they would take the exam in their own country. Also for example Belgium and the Netherlands could experience a similar effect as their boatmasters could be interested in taking the Seine KSS exam in their own country. Conversely, several other Member States will experience lower administrative costs as they will have less exam participants compared to the baseline scenario. This effect will be felt in the Rhine countries for example. The total cost change for an individual Member State will depend on the net effect on the number of participants multiplied by the costs of a KSS exam. In The Netherlands for example the cost for a KSS exam is around 52 euros[76], in Belgium the cost is around 70 euro[77].

Apart from the Member State authorities, also the participants to the KSS exams are affected. If boatmasters are allowed to take the exam in their own country, they will have less travel expenses, they will have fewer expenses for language courses and they will lose less time

[74] Panteia (2014), Recognition and modernisation of professional qualifications in inland navigation : technical support for an impact assessment, p 133-135
[75] http://www.binnenvaartacademie.nl/home/praktijkexamen
[76] http://www.cbr.nl/download/Tarieven%20Binnenvaart%20per%201%20januari%202014.pdf
[77] http://www.mobilit.belgium.be/nl/Resources/formulieren/scheepvaart/form_binnen_rijnpatent_riviergedeelte.jsp

travelling to the examination centre. In other words, their administrative costs will go down. The external study concluded that the NPV of this administrative costs savings adds up to € 0.7 million by 2030, and up to € 0.8 million by 2050. Further information on the assumptions and the underlying calculations can be found in the external study[78]. The external study concluded that this relatively modest savings can be explained by the fact that for CCNR countries, the exams for the KSS stretches on the river Rhine can already be done in the country of origin and in the native language of the respective CCNR Member State. Moreover, in the case of the Danube, boatmasters from Danube countries are granted KSS recognition on most of the Danube upon passing their boatmasters exam.

However, the effect is uncertain, as each Member State may choose whether or not to implement the measure. Member States that do not want to bear the possible associated extra administrative burden are allowed not to introduce the measure.

[78] Panteia (2014), Recognition and modernisation of professional qualifications in inland navigation : technical support for an impact assessment, p 113-119.

Annex 15:
Overview of the available quantitative estimates of the Net Present Value (NPV) of administrative costs, the safety effect and job quality/attractiveness of policy option C

It was not possible to conduct a full cost-benefit analysis of the options as not all costs and benefits could be monetised. Monetised estimates are available for investments costs, administrative costs, safety effects and job quality/attractiveness. For other impacts, qualitative assessments are available.

The table below provides an overview of the available quantitative estimates of the Net Present Value (NPV) of administrative costs, the safety effect and job quality/attractiveness of policy option C, as presented in section 6 of the Impact Assessment Report.

Policy measures	NPV of recurrent administrative costs[79] (euro)		Investment costs	NPV of safety effects[80] (euro)		Job quality/attractiveness[81] (euro)	
	2030	2050		2030	2050	2030	2050
For boatmasters: frequency of the medical check-up *new frequency (measure 2)*	+7.7 All	+13.2 All	0	- 2.0 All	- 3.3 All	0	0
For boatmasters: competence based standards tested by practical exam and mutual recognition of the certificates (measure 2)	C1: -0.5 Private/all	C1: -0.7 Private/all	-5.5	+72.6 All	+182,8	+21.0 Private	+31.6 Private
	C2: -1.9 Private/all	C2: -2.8 Private/all					
Boatmaster certificate for large convoys (measure 2)	Insignificant	Insignificant	0	+ All	+ All	- 0.1 Private	- 0.2 Private
Recognition of EU harmonised crew qualifications (measure 7)	Insignificant Private	Insignificant Private[82]	0	+4.2 All	+11.8 All	+10.4 Private	+ 15.9 Private
Introduction of a boatman exam (theoretical and/or practical) (measure 8 + for C1 measure 9)	**C1:** -0.8 Private	C1: -1.3 Private	Insignificant Public	+	+	+	+
	C2: -3.5 Private	C2:-5.2 Private	Insignificant Public				
Harmonization of required information in SRBs and logbooks (measure 10)	+0.1 Private	+0.2 Private	Insignificant Public	Insignificant	Insignificant	0	0
Recognition/certification system for education/exam programs and recognition of diplomas (measure 3 and 9)	**C1 only:** -2.8 Public	**C1 only:** -4.4 Public	**C1 only:** -2.2	+	+	+	+
Optional: Practical exam for workers entering from outside the IWT sector	(No NPV available: -800€ per exam at boatman level and -6000€ at		-0.1	Insignificant	Insignificant	+	+

[79] Negative figures (in red) refer to an increase in the NPV of administrative costs. Positive figures (in green) refer to a decrease in the NPV of administrative costs or 'savings'.
[80] Negative figures (in red) refer to a reduction in the NPV of safety effect: more accidents will take place, which represent a higher cost. Positive figures (in green) refer to a positive safety effect: fewer accidents will take place, resulting in a higher NPV of the safety effect.
[81] Negative figures (in red) refer to a negative NPV of the impacts on job quality/attractiveness: it represents a loss in wages for workers. Positive figures (in green) refer to a positive effect on job quality/attractiveness: it represents a gain in worker's salary.
[82] Panteia (2014), Recognition and modernisation of professional qualifications in inland navigation: technical support for an impact assessment, p.85: savings due to less checks of worker's SRBs.

(measure 12)	boatmaster level) Private						
Optional :Organisation of exams and issuance of authorisations for all KSS in Member States (measure 16)	Neutral public **(0 to +0.7)** Private	Neutral public **(0 to +0.8)** Private	Insignificant Public	0	0	+	+
Total	**C1:+3.7** **C2:+2.4**	**C1:+7.0** **C2:+5.4**	**C1: -8,0** **C2: -5,6**	**+75**	**+191**	**+31**	**+47**

The following conclusions can be drawn from the table above:

- **The total available monetised cost and benefits - benefits in terms of safety, job quality/attractiveness and even administrative costs outweigh by a significant marging the NPV of the investment costs (to be borne by the public sector)**.

It should be noted that apart from these available monetised impacts, also **other impacts** have to be considered when concluding on the effectiveness and efficiency of option C. For example, for labour mobility, the impact has been calculated in terms of extra workforce available on the labour market, and not in monetary terms. As demonstrated in section 6, this impact is also positive. Furthermore, also the impact on SMEs and the filling rate of vacancies (employment effect) is expected to be positive. It can therefore be concluded that the impacts described in qualitative terms further strengthen the conclusion that policy option C is the most effective option.

ANNEX 16:

GLOSSARY

- **Directive 91/672/EEC:** *Council Directive 91/672/EEC of 16 December 1991 on the reciprocal recognition of national boat masters' certificates for the carriage of goods and passengers by inland waterway* provides for the mutual recognition by the Member States of each other's boat masters' certificates, and establishes a committee to facilitate the process by delivering its opinion on the draft for the amendment of Annex I, i.e. the list of national boat masters' certificates for the carriage of goods and passengers by inland waterway.

- **Directive 96/50/EC:** *Council Directive 96/50/EC of 23 July 1996 on the harmonisation of the conditions for obtaining national boat masters' certificates for the carriage of goods and passengers by inland waterway in the Community* laid down harmonised basic conditions for obtaining national boat masters' certificates for inland waterway navigation between the EU member States. The Directive distinguishes between an "A" type certificate which is valid for all inland waterways not falling under Rhine regulations, and the "B" type which is similar but not valid on inland waterways with a maritime character, such as estuaries.

- **Mannheim Convention:** Its legal foundation is the Revised Convention for Navigation on the Rhine - referred to as the Mannheim Document - of 17 October 1868

- **Danube Commission:** The Danube Commission is an international intergovernmental organization established by the Convention regarding the regime of navigation on the Danube signed in Belgrade on 18 August 1948. The main objectives of the Danube Commission's activity are to provide and develop free navigation on the Danube for the commercial vessels flying the flag of all states in accordance with interests and sovereign rights of the Member States of the Belgrade Convention, as well as to strengthen and develop economic and cultural relations of the said states among themselves and with the other countries. The Member States of the Danube Commission are: the Republic of Austria, the Republic of Bulgaria, Hungary, the Federal Republic of Germany, the Republic of Moldova, the Russian Federation, Romania, the Republic of Serbia, the Slovak Republic, Ukraine and the Republic of Croatia.

- **Regulations for Rhine navigation personnel (RNP)[83]:** The Regulations for Rhine navigation personnel includes all the existing Rhine regulations for navigation personnel. The existing regulations were comprised of three sets of regulations, namely:

[83] http://www.ccr-zkr.org/12020300-en.html

- Regulations for Rhine navigation personnel, adopted in june 2007,
- Chapter 23 of the Inspection regulations for vessels on the Rhine;
- Regulations for safety personnel on passenger vessels, adopted in December 2004.

These regulations have been replaced by the RPN. Most of the rules, however, remain unchanged, since the new regulation merely constitutes a regulatory restructuring designed to ease the reading of Rhine regulations.

- **The "hidden reserve":** capacity reserve which consists of persons with the right qualifications but that are available for IWT work on an incidental basis only. This concerns for example persons that are of an age older than 65 years and/or relatives that may provide support in exceptional cases.

- **Service Record Books (SRBs)** register navigation time and qualifications. They as also provide proof that mental and physical fitness requirements have been met by each crew member. In this respect, SRBs are an important factor for obtaining a certificate to operate in a certain Member State or river basin.

ANNEX 17:

LIST OF ABBREVIATIONS

Abbreviations used in the Impact Assessment Report are presented in the table below.

Abbreviation	Description
AT	Austria
BAU	Business As Usual
BE	Belgium
BM	Boatmaster
CCNR	Central Commission for the Navigation of the Rhine
CEG	Common Expert Group on professional qualifications and training standards in inland navigation
CESNI	Committee for the Creation of Technical Standards in the field of inland navigation
CH	Switzerland
CPI	Consumer Price Index
CZ	Czech Republic
DC	Danube Commission
DE	Germany
DG MOVE	Directorate General for Mobility and Transport
EBU	European Barge Union
EC	European Commission
EDINNA	Education in Inland Navigation
ESO	European Skippers Organisation
e-SRB	Electronic Service Record Book
ETF	European Transport Workers' Federation
EU	European Union
FIS	Faiway Information System
FR	France
HINT	Harmonised Inland Navigation Transport through education and information technology
HR	Croatia
HU	Hungary

IAR	Impact Assessment Report
ICT	Information and communication technology
IT	Italy
IWT	Inland Waterway Transport
KSS	Knowledge of Specific Situations
MS	Member States
NAIADES	Navigation and Inland Waterway Action and Development in Europe
NL	Netherlands
NPV	Net Present Value
NUTS	Nomenclature of territorial units for statistics
PLATINA	Platform for the implementation of NAIADES
RIS	River Information System
RNP	Regulations for Rhine navigation personnel
RO	Romania
SB	Serbia
SK	Slovak Republic
SME	Small and Medium-Sized Enterprises
SRB	Service Record Book
STCIN	Standards of Training and Certification for Inland Navigation
STF	Committee on Social issues, Employment and Professional Training
UK	United Kingdom
UNECE	United Nations Economic Commission for Europe