United Nations ECE/TRANS/SC.3/WP.3/2011/4

Economic and Social Council

Distr.: General
8 December 2010

Original: English

Economic Commission for Europe

Inland Transport Committee

Working Party on Inland Water Transport

Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation

Thirty-eighth session
Geneva, 16–18 February 2011
Item 4 (d) of the provisional agenda
Special editorial session on the White Paper on efficient and sustainable inland water transport in Europe

Chapter 4: A pan-European vision for efficient and sustainable inland water transport

Note by the secretariat

I. Mandate

1. At its fifty-fourth session, the Working Party on Inland Water Transport (SC.3) approved, in principle, the draft White Paper on efficient and sustainable inland water transport in Europe of the United Nations Economic Commission for Europe (UNECE), but noted that some additional comments from the delegations would be forwarded to the secretariat by 15 November 2010. SC.3, therefore, requested the Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation (SC.3/WP.3) to hold a special editorial segment during its thirty-eighth session to finalize the paper in time for the seventy-third session of the UNECE Inland Transport Committee to be held from 1 to 3 March 2011 (ECE/TRANS/SC.3/187, para. 12).

2. In accordance with the request of SC.3, the Working Party may wish to consider any last editorial corrections, to the text of Chapter 4 on a pan-European vision for efficient and sustainable inland water transport.

II. Chapter 4: A pan-European vision for efficient and sustainable inland water transport

3. In 1996, the UNECE White Paper on trends in and development of inland navigation and its infrastructure, hereafter the 1996 White Paper, highlighted the advantages of Inland Water Transport (IWT) in compared with other modes of inland transport, identified a number of IWT shortcomings and put forward several policy recommendations to further utilize its potential.

4. Using the 1996 White Paper as a benchmark and based on the analysis provided in Chapters 1 to 3, this concluding chapter reviews the potential and challenges for IWT development and offers the policy recommendations that could be part of a pan-European vision towards efficient and sustainable inland water transport.

A. Inland Water Transport: Safe, Reliable, Efficient and Environment-friendly Transport Mode

5. The 1996 White Paper highlighted the advantages of IWT compared with other modes of inland transport, pointing out that:

- Inland navigation is the most economical inland transport mode in respect of uncovered external and infrastructural costs;
- Inland navigation is friendly to the environment and contributes to improving quality of life;
- Inland navigation is safe.

6. More recent analyses confirm these major advantages in terms of safety, cost-efficiency and sustainability. These studies also emphasize that the traditional shortcomings of IWT, in particular, its limited reliability due to weather and hydrological conditions, are mitigated by the growing congestion challenges faced by other modes of transport.[1] Indeed, while "all other hinterland transport infrastructures are running close to full capacity in and around seaports across Europe, the waterways still have potential for further growth".[2] Recently, the EU NAIADES programme advanced ten reasons to use IWT, including: safety, lowest environmental costs, time reliability, lower infrastructure costs, high carrying capacity, high potential for intermodal networking, large amount of available capacity, suitability for transporting abnormal loads, possibilities for tailor-made transportation and efficient information and communications technology with the implementation of river information services.

7. Taking account recent research and operating requirements, the advantages of freight transport on inland waterways can be summarized as follows:

Superior safety	IWT operates away from populations and traffic. It is more than 50 times safer than road, more than 5 times safer than rail (in

[1] See reports from Inland Navigation Europe (INE), from the European Framework for Inland Navigation (EFIN) Group and the report on the prospects of inland navigation within the enlarged Europe (PINE).

[2] European Union/Central Commission for the Navigation of the Rhine, "Inland Navigation in Europe: Market Observation", 2008–1, Special Report: Barge transport in Europe: status quo and new perspectives, page 6.

	persons killed per tonne-km).
High versatility	IWT offers tailor-made services suitable for dry/liquid bulky, heavy and dangerous goods, containers and roll-on/roll-off services.
Good reliability	Few unpredictable traffic constraints due to accidents, ice, floods and low waters in Western and South-Eastern Europe.
Low costs	Considerably cheaper than road and rail main haul services (by 30 per cent to 60 per cent, depending on cargo and distance).
High energy-efficiency	For most bulk transport operations, 3–6 times less fuel consumption than road and up to 2 times less than rail.
Good carbon footprint	For most bulk transport operations, 3–6 times less CO_2 emissions than road and up to 2 times less than rail.
Low noise levels	Low noise emissions, mostly away from major populations.
Low infrastructure costs	Low investment and maintenance costs.
Supply chains and logistics	Low cost buffer stock and storage capability.
Good transport supervision	Effective tracking and tracing of vessels and cargo by using river information services (RIS).
No traffic restrictions	Few night, weekend and holiday traffic restrictions.
Dedicated transport network	Little interference with passenger traffic.
Untapped spare capacity	20–100 per cent short-term spare capacity on major corridors.

8. It is hence increasingly recognized that IWT represents a safe, reliable, efficient and environment-friendly mode of transport. As shown in Chapter 2,[3] IWT offers still very considerable capacities for freight transport on major European transport corridors. The next section reviews progress in IWT development and identifies the remaining and new challenges in this area.

B. Assessing (more than) a Decade of Inland Water Transport Policies (1996–2010)

9. The 1996 UNECE White Paper observed that “From being one of the very first modes of transport in human history, inland navigation now plays a comparatively modest role in total inland transport performance in European UNECE member countries”. Analyzing the barriers to IWT development, the White Paper stressed the negative impact of several factors, including the limited geographic extension of IWT, need for a higher degree of organization of the production/transport chain, slowness and lower reliability than that of other inland modes.

[3] See ECE/TRANS/SC.3/2010/2, paras. 3–8.

10. The UNECE White Paper also noted that there were, however, good reasons to believe that IWT, similarly to rail transport, has prospects for further development on the European continent, as "the over-proportioned growth of road transport [would give] rise to concern for both the public at large and Governments with regard to negative aspects concerning the environment, safety, congestion, etc." In order to utilize the potential of IWT, the 1996 UNECE White Paper contained recommendations to:

- Develop a pan-European network of inland waterways and ports of international importance,
- Encourage modern methods of navigation,
- Eliminate administrative, technical and legal barriers for navigation by inland waterways of international importance,
- Develop the main principles governing navigation on the network of European inland waterways of international importance and harmonize provisions relating to the access to the international inland navigation market, and
- Promote transport by inland waterways through the use of economic instruments, such as incentives and taxation, and taking into account external costs of the various modes of transport.[4]

11. As pointed out in the previous chapters of this paper, considerable progress has been achieved in most of these fields.

12. First of all, a consistent and comprehensive pan-European network of inland waterways and ports of international importance is now codified in the European Agreement on Main Inland Waterways of International Importance (AGN) which identifies the current status of the pan-European inland waterway network and facilitates harmonized and coordinated planning of infrastructure projects. Chapter 2 illustrates and analyses the progress achieved up to today.

13. Second, as described in Chapter 3, use of state-of-the art methods of navigation have become possible through new technical requirements of inland vessels and modern port infrastructures, including the introduction of river information services, which increase safety, reliability and transparency and competitiveness of navigation, especially for transporting dangerous, heavy and bulky goods.

14. Third, the elimination of administrative, technical and legal barriers for inland navigation is also an area where important efforts have been made at national and international levels. In 2005, the UNECE *"Inventory of existing legislative obstacles that hamper the establishment of a harmonized and competitive pan-European inland navigation market, and proposals for solutions to overcome them"* identified a series of legal obstacles and suggested ways to resolve them.[5] More recently, a detailed Study on Administrative and Regulatory Barriers in the Field of Inland Waterway Transport, carried out for the European Commission, identified around 180 regulatory and administrative obstacles faced by shippers, skippers and barge operators and proposed general directions for solutions. The first annual report on the follow-up to this study has been released and most of the possible solutions would require joint action by the European Union, River Commissions and UNECE.

15. Fourth, as shown in Chapter 3, while there is no single comprehensive institutional and regulatory framework applicable all E waterways listed in the AGN Agreement,

[4] The 1996 UNECE White Paper, paras. 38–40.
[5] See ECE/TRANS/SC.3/2005/1.

progress has been made in almost all technical and legal areas and harmonized pan-European conventions were established for the transport of dangerous goods and in the field of civil liability for the carriage of goods by inland waterways.

16. Finally, the issue of promoting transport by inland waterways using economic instruments, such as incentives and taxation taking account of external costs of the various modes of transport, has been addressed by several expert and policy discussions. The 2005 Round Table on "Pan-European Co-operation towards Strong Inland Waterway Transport: On the Move", organised by the ECMT, together with the UNECE, CCNR and DC, addressed the issue of IWT charging and pricing. The Round Table discussed the most appropriate methodologies for calculating the real costs incurred by inland shipping, identified pros and cons of charging for the use of inland waterway infrastructure, particularly in terms of the IWT competitiveness and the legal principle of freedom of navigation. The Round Table also noted that taking into account the low environmental impact of inland waterways and much lower infrastructure costs than in other modes, the introduction of infrastructure charging in the whole transport system would put inland navigation in a favourable position in comparison to other modes. The participants concluded that the introduction of charging for inland waterway infrastructure could be both a threat and an opportunity to IWT.[6] Based on these expert discussions, at the 2006 Bucharest Pan-European Conference, the Transport Ministers affirmed that establishing a framework for infrastructure charging and internalization of external costs, should be applied to all modes on an equal basis allowing a level playing field between transport modes and that the consequences for traffic flows on inland waterways should carefully consider.

17. At the same time, while progress has been made in the above areas, IWT still has a lot of spare capacity and a rather modest market share in the ECE region, apart from the transport corridors along the Rhine. As a result, most of the policy recommendations in the 1996 UNECE White Paper, agreed upon more than a decade ago, are still valid and applicable today.

18. Indeed, considerable challenges remain to be addressed by the IWT industry, governments and international organizations, as testified in the latest Ministerial declarations and dedicated studies carried out by experts and policy makers.[7]

19. The importance of a harmonized policy and legal framework for the development of IWT at the pan-European level has been underlined repeatedly. At the 2006 Pan-European Conference on Inland Water Transport in Bucharest, Transport Ministers emphasized that "challenges for pan-European inland waterway transport are closely interrelated and need to be structurally considered as a whole by all States engaged or interested in inland navigation whether they are a member of the European Union or not". The 2004 Report from the European Framework for Inland Navigation (EFIN) identified several structural problems developing IWT[8] and argued that these challenges could only be addressed at the pan-European level and, ideally, by a specialized organization. The report on the Prospects of inland navigation within an enlarged Europe (PINE report), also released in 2004, elaborated detailed recommendations in the fields of legislation, infrastructure, ports, information systems, human resources, fleet, market sector and image of IWT and allocated

[6] Strengthening Inland Waterway Transport: Pan-European Co-Operation, ECMT, 2006, p. 82.

[7] See ECE/TRANS/SC.3/2010/3, paras. 20–67.

[8] Notably, stagnating investments in inland navigation, increasing constraints linked to the environmental protection, loss of the sector's attractiveness in the eyes of qualified workers and decline of administrative supervision of inland navigation by Ministries and operational services in most countries.

specific roles to the UNECE, the EU, States, River Commissions, professional organizations and national, regional and local administrations.

20. Pan-European policies and actions appear to be of particular importance and impact in the following areas seven areas.

(a) Infrastructure development: Chapter 2 highlighted the new dynamic in UNECE member countries in favour of integrated inland waterway networks embodied in the AGN Agreement. This new dynamic is confirmed by major investment programmes. These efforts remain however modest in relation to the potential capacity of the network. During 1995–2005 investments in transport infrastructure throughout the 15 EU countries amounted to €800 billion, of which 64 per cent for roads, 32 per cent for rail, 3 per cent for ports and only 1.4 per cent for inland waterways. Studies have shown that the increase in IWT has been achieved despite inadequate characteristics of the infrastructure. They suggest that a small transfer of available investment funding in favour of inland waterways to address these infrastructure bottlenecks could produce a over-proportionate impact on modal split. The challenge is to obtain these results on a pan-European basis and not just in those countries where transport policies have already evolved in this direction.

(b) Modernization of the fleet: This is also a major objective, particularly for liquid petroleum and other dangerous cargoes, but also in order to allow more efficient container transport and that of other specialized cargo, along with harmonized safety and technical requirements and commonly accepted rules on the size of inland vessels' crews. There is also an increasing need to improve the environmental performance of inland vessels. Fleet modernization is a priority in all UNECE member States. As mentioned before, this is a major component of the EU NAIADES programme. It is also of particular importance for navigation growth on the Danube and international and national waterways beyond the EU, as demonstrated by the recent discussions within the Danube Commission on the DC navigational strategy and the national transport policies in Kazakhstan, Russian Federation and Ukraine.[9]

(c) Use of River Information Service (RIS): Closely linked to fleet modernization is the use of RIS, which is currently being introduced in all UNECE member countries concerned with inland navigation. By harmonizing information services to support traffic and transport management in inland navigation, including interfaces to other transport modes, RIS contributes to a safe and efficient transport process and utilizing the inland waterways to their fullest extent. To this purpose, inland navigation vessels must to be equipped with Very High Frequency (VHF) radiotelephone stations, radars, Global Positioning System (GPS) receivers, Inland Electronic Charts Display and Information System (Inland ECDIS) equipment and Inland Automatic Identification (AIS) transponders. Relevant measures should also be undertaken by competent authorities to establish relevant shore-based infrastructure and services, such as RIS and Vessel Traffic Services (VTS) centers, GPS differential correction stations, etc.

(d) Market requirements: Transport demand increasingly requires efficient intermodal transhipment terminals to allow seamless road – rail – inland water transport chains. While road and rail transport infrastructures, particularly along major European North-South corridors are increasingly congested, inland water transport still offers untapped capacities in the order of 20 to 100 per cent in many UNECE countries, 24 hours a day, 7 days a week. However, adequate capacity on inland waterways alone is not sufficient to increase its market share and modal split vis-à-vis road and rail transport. In order to capture and stay in growth markets and market niches, such as for biomass,

[9] ECE/TRANS/SC.3/WP.3/2009/13, paras. 8, 25 and 66.

containers, bulky and heavy goods or for waste and recycling materials, the inland water transport industry needs to comply with the increasingly sophisticated needs and requirements of supply chain and distribution managers and must better integrate into seamless door-to-door transport chains, including efficient transhipment operations and terminal hauls. To achieve this double objective of conquering new markets and better integration in intermodal transport and logistic chains, it is of paramount importance to better link IWT with maritime shipping. One way to achieve this objective, as well as alleviating the congestion in the maritime traffic would be to promote and regulate the use of river-sea vessels – the inland vessels carrying out international runs between river and sea ports of the various countries and coastal runs between river and sea ports of the same country. However, at the present stage the EU, River Commissions or UNECE instruments do not foresee special technical requirements for these vessels, even though the work in such provisions is currently ongoing in the UNECE. Another particular challenge in this area relates to reducing the waiting time for loading/unloading goods from inland vessels in the sea ports.[10]

(e) Labour market challenges: Adequate transport and logistics policies are needed to improve the attractiveness of the profession and intensify continuous training of staff. IWT operators constantly modernize and enlarge boats, develop new transhipment techniques, set up regular container transport lines and make greater use of information technologies to ensure perfect traceability of goods for their customers, etc. In the past decade a marked shift has been in this direction, with barge operators becoming increasingly transport organizers, providing value-added or door-to-door transport services for complete logistical supply and distribution chains. This however requires skilled human resources and harmonized training standards that are available and applicable on all inland waterways in the pan-European region. Some UNECE member countries struggle with a shortage of skilled personnel which hampers growth where it is most needed.[11] Efforts are made to train younger generations, yet this move has to date been insufficient to counterbalance retirements. Besides, living on board small craft is not attractive for young couples and a change in boatmen's way of life is required. Accompanying and supporting such change will be one of the challenges of the profession and of State policies. Furthermore, while using the foreign workforce is one of the solutions for the labour shortage on the market which is increasingly used in many UNECE countries, this practice creates an additional challenge for maintaining the attractiveness of the sector by providing an opportunity to undermine the social protection of the skilled workforce.

(f) Climate change: Global warming and carbon emissions have become a key issue for the future of IWT in Europe. First, because IWT can be one of the solutions towards reducing the carbon footprint of the transport sector through a modal shift from road transport, wherever possible. However, in order to maintain this competitive edge, efforts are required to ensure that the continuing reduction of CO_2/t-km (CO_2 intensity) in road transport is paralleled by similar progress in IWT. Second, the disappearance of

[10] For example, fast and reliable treatment of barges in seaports (e.g. through dedicated barge terminals) is essential for increasing the role of barge transport in the container traffic. EC/CCNR, Market observation for inland navigation in Europe, 2008-1, "Barge transport in Europe: status quo and new perspectives", page 17.

[11] Recent studies of the IWT labour market in the EU, for instance, showed that the current technical developments in terms of larger vessels and investments in vessels with new capacity, as well as the likely increase in transport volume in the long-term, will require additional personnel in all areas covered by inland navigation. At the same time, due to the age structure of the current IWT workforce, a large chunk of the labour force is expected to leave the sector over the next ten to twenty years. (EC/ CCNR, Market observation | for inland navigation in Europe, 2009-1, "Thematic Report: Inland Navigation Labour Market", page 8).

Alpine glaciers leaves major European rivers, such as the Rhine and Danube at the mercy of dry spells and there is a possibility that IWT will be impacted by large variations and reduced water depths. At the same time, as demonstrated during the 2009 CCNR Congress "Navigation on the Rhine and Climate Change – a Challenge and an Opportunity", there are also scenarios in which the effect of climate change on rivers will be quite minimal.[12] When studying the possible effects on inland navigation all possible scenarios must be taken into account. At the same time, it is essential for IWT to work on maintaining and increasing its advantage in terms of environmental performance through research and innovation, considering, for instance, the use of alternative fuels.

(g) Enhancing the institutional and regulatory regime: Chapter 3 highlighted the complex institutional landscape in the ECE region and analyzed the underlying different legal regimes for inland navigation. While no substantial changes to the institutional landscape of inland navigation in the region are foreseen, permanent and inclusive consultation and coordination mechanisms are essential to enable Governments and others stakeholders to coordinate their policies and regulations and to further harmonize still disparate rules and legal regimes.

C. Towards efficient and sustainable inland water transport in the ECE region

21. As in 1996, the present UNECE White Paper identifies and describes a number of policy recommendations that could be part of a pan-European vision for efficient and sustainable inland water transport.

22. These recommendations are based on recent studies and policy declarations, such as the Ministerial Declaration adopted by the 2006 Bucharest Pan-European Conference on Inland Waterway Transport (and the follow-up Resolution No. 258 of the UNECE Inland Transport Committee adopted on 7 February 2007), as well consultations with the European Commission, River Commissions and competent international and regional organizations.

23. The recommendations focus on the seven priority areas identified in the previous section:

(a) Infrastructure development;

(b) Fleet modernization;

(c) Use of river information services;

(d) Market requirements;

(e) Labour market challenges;

(f) Climate change;

(g) Institutional and regulatory issues.

[12] Interim results of the research programme KLIWAS (Klima, Wasser, Schifffahrt) which deals with the consequences of the climate change on waterways and inland navigation in Germany projected no significant changes in discharges of the Rhine during summer until 2050. However, discharges during winter could increase.

Policy Recommendation No. 1

Make full use of pan-European mechanisms to coordinate the development of the E waterway network

24. The AGN Agreement provides a strategic tool and coordinated international plan for the development and construction of a network of inland waterways of international importance (E waterway network) which Contracting States intend to undertake as part of national programmes. Administration of the AGN Agreement includes the collection of information about actual and planned parameters of European inland waterways as well as important bottlenecks and missing links.[13] The maintenance of a coherent and comprehensive E waterway network requires that all national, regional and EU infrastructure development plans are duly reflected in the technical annexes of the AGN Agreement with a focus on missing links and strategic bottlenecks that currently hinder the development of IWT operations at the pan-European level.

25. Based on the analysis in Chapter 1, there exists a number of possible priority projects that could be further reviewed, such as:

- Construction of the Seine–Nord Europe Canal and associated activities under the overall Seine–Scheldt TEN–T programme (EU TEN–T priority project 30);
- Deepening of the Danube Straubing–Vilshofen (EU TEN–T priority project 18);
- Elbe low-head weir and locks between Děčín and the German border as well as construction of a new lock at Prělouč;
- Doubling of locks on the Volga–Don canal and other investments planned on routes E 50 and E 90 through the Russian Federation;
- Improving navigability of the free-flowing navigable rivers in Poland and upgrading of the Oder–Vistula waterway as far as technically and environmentally feasible to enhance the value of investments in the Havel-Oder Waterway east of Berlin;
- Improving navigability of the Sava River and other navigable tributaries of the Danube to enable these branches to effectively “feed” traffic to the main artery – Danube – in the way that the Moselle, Main, Neckar provide traffic to the Rhine.

26. Of particular importance in the development of the AGN network is the connection between short-sea shipping and the inland waterways. Future infrastructure projects need to address the basic and strategic bottlenecks, missing links and the lack of transhipment infrastructure facilities to provide for seamless transport operations in this field.

27. In order to prepare and review freight transport scenarios at the pan-European level and to evaluate potential demand and supply in IWT on the AGN network, ad hoc committees, expert groups or round tables could be convened, as appropriate.[14] Such work could be undertaken by experts from representative groups of UNECE member countries, including the European Commission, River Commissions and other concerned inter-governmental and non-governmental organizations.

[13] This information is regularly published by the UNECE in its Inventory of Main Standards and Parameters of the E Waterway Network (“Blue Book”) and the Inventory of most important bottlenecks and missing links in the E Waterway Network (Resolution No. 49).

[14] For instance, ITC Resolution No. 258 envisaged the economic studies of the Danube–Oder–Elbe Connection and the Dnieper–Vistula–Oder Waterway connection.

Proposed UNECE actions:

(a) Invite the following UNECE member countries that have not yet done so to ratify the AGN Agreement: Belgium, France, Germany and Poland, addressing where possible the concerns which they may have regarding the implications of ratification.

(b) Further strengthen the monitoring mechanism to review and update the development of the AGN network, its inland navigation ports of international importance as well as applicable technical and operational parameters. In particular, strengthen the UNECE work on maintaining of its Inventory of Main Standards and Parameters of the E Waterway Network ("Blue Book") and the Inventory of most important bottlenecks and missing links in the E Waterway Network (Resolution No. 49) by coordinating this work with relevant IWT infrastructure related programmes, such as the Trans-European Transport Network (TEN-T) of the European Union;

(c) Invite SC.3 to host a forum, as appropriate and in close coordination with other international bodies to avoid any duplication, for ad hoc committees, expert groups or round tables to further coordinate the development of the E waterway network. Invite UNECE countries to support this work by nominating ad hoc or permanent national experts.

Policy Recommendation No. 2

Coordinate and support measures to modernize the inland water fleet at the pan-European level

28. Chapter 1, showed a particular need to modernize the inland water fleet on inland waterways in the Danube basin and on the Eastern interconnected network. Modernization requirements arise generally from reasons of efficiency and sustainability of IWT as well as regulatory action from UNECE member States and River Commissions. Moreover, there is a strong need to address the financial burden of fleet modernization, as the lack of capital seriously handicaps modernization and environmental improvement of the inland fleet.

29. The current work of the EU NAIADES programme, UNECE and the River Commissions in this field needs to be continued and, if possible, intensified. The pan-European dialogue on harmonization of technical requirements for inland vessels is crucial and innovative solutions should be explored. In particular, the models for joint working groups, such as the EU/CCNR joint working group on technical prescriptions for inland vessels and the UNECE/CCNR joint working group on the transport of dangerous goods could be used and extended in terms of substance and geographic coverage to involve all stakeholders at the pan-European level.

30. The use of river-sea vessels in light of their potential contribution to increasing the market share of inland navigation should be addressed should be promoted through the elaboration of adequate technical requirements applicable to such vessels and taking into account the safety concerns and the market requirements.

Proposed UNECE actions:

(a) Strengthen UNECE work on maintaining pan-Europeans norms on technical requirements to inland vessels, taking due account of and contributing to, to the extent possible, the work of the EU/CCNR joint working group on technical prescriptions for inland vessels; possibly integrating the UNECE work on technical prescriptions for inland vessels with the EU/CCNR joint working group should be considered.

(b) Promote the EU and River Commissions studies on the European inland fleet and consider Europe-wide specific studies on fleet modernization and enhancing of its efficiency;

(e) Continue SC.3 work on elaborating technical prescriptions for river-sea vessels.

Policy Recommendation No. 3

Promote the use of River Information Service and other information communication technologies (ICT)

31. Particular support should be provided to further developing and implementing river information services which play a crucial role in ensuring safety and reliability of inland navigation. In this area international groups of experts play an important role in elaborating relevant technical standards, such as Inland ECDIS, standard for notices to skippers and for electronic ship reporting in inland navigation, guidelines and criteria for vessel traffic services on inland waterways and standard for tracking and tracing on inland waterways using AIS.

32. Equal support should be brought to other ICT initiatives to facilitate IWT operations and increase their safety. The above-mentioned European hull database for inland vessels should significantly simplify the exchange of information between vessels, between vessels and RIS and other competent authorities. Moreover, international databases could be used to facilitate the inspections of inland vessels, enabling competent authorities to target their inspections based on a agreed upon set of criteria. An example of such as system is the IBISnet system used by Aquapol.

33. The evolution of RIS and other ICT-driven innovation necessitates constant adaptation of relevant international rules and regulations for inland navigation, such as, for instance, the European Code for Inland Waterways (CEVNI), in which a special provision on the use of AIS was introduced in 2009 and may be expanded in the near future.

34. Finally, information exchange on the progress and challenges introducing RIS and other related features, such as electronic ship reporting should take place at the widest possible level to promote the use of harmonized standards and ensure the interoperability of the introduced systems.

Proposed UNECE actions:

(a) Support a pan-European dialogue on the implementation and further development of river information services;

(b) Monitor the work of relevant international expert groups and reflect the results of their discussions in the RIS related resolutions of SC.3, as well as other relevant instruments, such as the European Code for Inland Waterways;

(c) Support and facilitate current efforts within the EU to set up an international hull data base that, in order to be effective, requires including and maintaining non EU-inland vessels data;

(d) Encourage other uses of ICT for facilitating IWT operations and inspections of inland vessels and elaborate and promote the harmonized rules and criteria in this area.

Policy Recommendation No. 4

Respond effectively to new market requirements

35. The container traffic boom on the Rhine shows that inland waterways could play an important role in transporting high-value manufactured goods and could thus contribute to reducing congestion on major European transport corridors. Europe's network of inland waterways links the maritime ports with virtually all of its economic centres. This should provide ample opportunities for cost-effective and sustainable IWT hinterland transport solutions to inland hubs as part of global and regional supply chains that reduce the need for precious port space as well as costly investments in new road and rail transport infrastructures in port hinterlands. Logistic innovations can be stimulated through the improvement of transhipment facilities and more efficient operations and cargo handling of inland ports and terminals and through the use of river information services. In particular, measures need to be taken to facilitate IWT operations in the sea ports by improving legal, administrative and logistical procedures.

36. As illustrated by the ongoing works on the Seine-Europe Nord canal, the use of multimodal platform contributes to higher competitiveness of this mode of transport along with its better integration in the global supply chain. Thus, relevant international legal agreements, such as European Agreement on Important International Combined Transport Lines and Related Installations (AGTC) and its inland navigation related protocol, can and should be used to promote intermodality.

37. Furthermore, to fully integrate the global logistic chain it is also paramount for to make sure that the IWT provides the same level of security as other modes of transport, and, very importantly, the maritime transport, which is subject to the International Ship and Port Security (ISPS) Code. The introduction of the ISPC code already imposes new constraints on the access of inland vessels to maritime terminals. In the near future other modes of transport (road, in particular) will also be subject to increased security standards.

38. Finally, as expert discussions described above revealed, introducing charging for inland waterway infrastructure may not be detrimental to IWT competitiveness. Further studies on this issue should be complemented by incorporating national best practices in the considerations, such as the approach of the Seine-Europe Nord Canal, where charging is foreseen.

Proposed UNECE action:

(a) Continue raising awareness of the IWT advantages in comparison with and/or in conjunction with other modes of transport at high-level policy events, such as the annual sessions of the UNECE Inland Transport Committee;

(b) Improve cooperation between IWT, rail and road operators through joint meetings and other activities of UNECE bodies and organs dealing with inland water, road, rail and intermodal transport and logistics;

(c) Promote intermodality in IWT operations by promoting the relevant international agreements, such the Protocol on Combined Transport on Inland Waterways to the European Agreement on Important International Combined Transport Lines and Related Installations (AGTC);

(d) Support all other initiatives aiming to improve the role of IWT in secure intermodal transport chains, in particular, as an efficient and safe intermediary between hinterland and sea ports;

(e) Address at the expert and policy levels, the issue of inland waterway infrastructure pricing and its impact on IWT use and competitiveness.

Policy Recommendation No. 5

Address the labour market challenge at the pan-European level

39. It is crucial to follow-up on the 2006 Bucharest Ministerial Declaration, which called for facilitating the free movement of crew members Europe-wide as well as the mutual recognition of boatmasters' licenses. In this declaration, Ministers also stressed the importance of specific knowledge and experience needed for navigation on certain river stretches, the harmonization of job descriptions and the need for creating a European network that facilitates the exchanges on national educational programmes and vocational training.

40. As shown in Chapter 3, UNECE as well as the EU and the River Commissions address these issues. Important achievements have been reached in this field in the past decade. The River Commissions have, in particular, intensified their work on the mutual recognition of the boatmasters' certificates and other crew documents and, thus have made progress in facilitating the circulation of crew members. Specific working time arrangements for the IWT sector, job profiles, the manning requirements, improvement of the on-board working and living conditions, as well as social dumping and unfair competition are currently under consideration within framework of the EU European Sectoral Social Dialogue. The jobs and skills component of the EU NAIADES programme seeks to make IWT more attractive to the workforce and increase investments in human capital.

41. However, further efforts at the pan-European level are required to cope with the predicted shortage of skilled labour in IWT and to identify remaining obstacles and devise appropriate strategies. In this context, the goal of making the IWT profession more attractive to the qualified workforce could be achieved by both facilitating access to the profession by persons with transferable work experience (from maritime, fishing or other transport industry) and by making it possible for IWT professionals to access the other professional occupations linked to inland navigation.

Proposed UNECE actions:

(a) Support and promote the ongoing work of the EU and River Commissions to address labour market challenges and strengthen the image of IWT, with particular emphasis on social, economic and safety implications of the current labour practices, such as the use of the foreign workforce;

(b) Continue work on harmonizing requirements for issuing certificates for boatmaters and crew members, as well as the manning requirements for inland vessels based on relevant SC.3 resolutions and consider the establishment of a pan-European legal regime in these areas;

(c) Monitor and support the process of opening up national inland waterways of some UNECE countries, particularly the Russian Federation and the Ukraine, to vessels flying foreign flags and support all activities of these countries to promote and implement Pan-European rules of navigation on their waterways.

Policy Recommendation No. 6

Tackle environmental challenges and the carbon footprint

42. The environmental aspect of the inland navigation needs to be vigorously addressed at the pan-European level. In this area, building on the work of the River Commissions for navigation and environment of the Danube, the Rhine and the Sava, pan-European

guidelines, recommendations or standard procedures to measure the environmental impact of IWT should be developed and could possibly be enshrined at a later stage into existing international agreements.

43. Moreover, the results of regional studies and meetings on the impact of climate change on IWT infrastructure, such as the studies and conferences organized by CCNR, should be widely disseminated.

44. Finally, the short and long-term consequences of national, regional or EU environmental legislation should be analyzed for its impact on IWT and to allow the sector to keep its competitive edge as an environmentally-friendly mode of transport. Dialogue and cooperation between national and regional navigation authorities and the river protection commissions should be strengthened to identify possible joint studies and other actions.

Proposed UNECE actions:

(a) Encourage active participation of UNECE member countries in the global United Nations Development Account project "Facilitating Climate Change Mitigation in Transport through Addressing its Energy–Environment Linkage", making use of the expertise available in UNECE member countries, River Commissions, inter-governmental and non-governmental organizations;

(b) Maintain a register of pertinent studies and events in cooperation with the EU, River Commissions, river protection commissions and other international competent bodies;

(c) Continue to support the activities of member States, the European Commission and the River Commissions aimed at adapting IWT to the impact of the climate change, at managing waste and reducing pollution by inland vessels and other environment related issues;

(d) Support and encourage research and innovation activities, aimed at maintaining and further increasing the IWT competitive edge in environmental performance, including *inter alia* research on alternative fuels for inland vessels.

Policy Recommendation No. 7

Reinforce the institutional and regulatory framework at pan-European level

45. As illustrated in Chapter 3 and, despite what may be perceived as a complex institutional framework and regulatory architecture governing IWT in Europe, significant progress has been made in harmonizing and simplifying the European regulatory regime for inland navigation. Following the publication of the 1996 UNECE White Paper, pan-European rules for the transport of dangerous goods and civil liability in inland water transport operations have been established. Good communication and cooperation between existing institutions and international expert groups, working under the auspices of the United Nations, EU, River Commissions and regional and national administrations, have been key factors in this fruitful progress towards an unified and transparent regime for inland navigation in the ECE region.

46. Building on these experiences, continuing efforts are required to further harmonize or unify rules and regulations, streamline procedures and establish mechanisms that allow an efficient maintenance and updating of the regulatory framework governing IWT at the pan-European level in line with market requirements, safety and environmental considerations.

47. Several models could be used as examples and best practices for adequate pan-European rules and procedures for IWT. Such models are already in place for many years in the field of air and maritime transport at global level based on the international treaties applicable in all States that have ratified them. Also, international road transport is governed by global agreements governing rules of the road, road safety and the construction of vehicles as well as by pan-European regulations, such as the Convention on the Contract for the International Carriage of Goods by Road, establishing standard and transparent contractual provisions of civil liability.

48. Similarly, international rail transport is ruled by two major international agreements (Convention concerning International Transport by Rail and Agreement on International Railway Freight Communications). Work is underway within UNECE to harmonize and possibly unify these railway regimes through the preparation of contractual model provisions providing seamless international rail transport from the Atlantic to the Pacific. Also, model rules and regulations govern the transport of dangerous goods by all modes of transport at the global level, while implementation at national and EU level is ensured through modal conventions, such as ADN for inland water transport.

49. These examples might be used to develop a vision and strategy to reinforce and further develop the regulatory framework for IWT at the pan-European level and to establish a level playing field with other transport modes. Given the complexity of national, subregional (EU) and river rules and regulations in IWT, priority should be given to advance solutions in fields where harmonization is already widely achieved and where it is important to establish mechanisms to ensure a continuity of harmonized maintenance and implementation.

50. Inland navigation rules could possibly be a good starting point, as CEVNI developed on the basis of applicable River Commissions regulations, already provides a common regulatory framework at the pan-European level. In order to ensure continued relevance and applicability of CEVNI and to reduce parallel work, it has been proposed to discuss whether CEVNI could be upgraded to an internationally legal instrument. However, as SC.3 recently noted, the goal of promoting the harmonized rules of navigation could also be achieved through other, more flexible, mechanisms.[15]

51. One such mechanism could be transforming CEVNI into the Model Regulation for pan-European inland water navigation whose general provisions applicable to all inland waterways are transposed and applied by subregional bodies or River Commissions, in line with similar procedures applicable for the construction of vehicles or the transport of dangerous goods. In addition, adequate maintenance solutions need to be put in place that provide efficient “bottom-up” mechanisms for amendment proposals (from Governments, EU and River Commissions) as well as adequate “top-down” and monitoring procedures ensuring harmonized implementation at national, subregional and River basin level. The necessity to complement CEVNI with specific rules on local navigational conditions gives River Commissions a crucial role in ensuring efficiency and safety in inland navigation.

52. Another important area of increased coordination and cooperation relates to the 1988 Strasbourg Convention on Limitation of Liability in Inland Navigation (CLNI), originally open for participation of only CCNR member States, but currently revised to enable participation by third countries. The efforts of CCNR in this field could be supported to allow this Convention to become of pan-European or even global importance.

[15] Report of the UNECE Working Party on Inland Water Transport on its fifty-first session, ECE/TRANS/SC.3/178, para. 24.

53. However, adequate resources are necessary to enable the existing IWT institutions to better cooperate and coordinate their activities and reap synergies.

Proposed UNECE action:

(a) Identify, in close cooperation with specifically the River Commissions and the European Commission, areas for further coordination, cooperation, transparency and harmonization of rules and regulations for IWT at the pan-European level and determine practical measure to streamline and coordinate the activities of the institutions involved;

(b) In close cooperation with River Commissions, promote CEVNI as the basis for transparent and standard rules for inland water navigation at the pan-European level and develop appropriate mechanisms that ensure streamlined and effective maintenance and monitoring of its provisions;

(c) Support all efforts to establish a pan-European legal framework for private law aspects of inland navigation, such as the implementation of the 2001 Budapest Convention on the Contract for the Carriage of Goods by Inland Waterway (CMNI) and the CLNI;

(d) Monitor and support, where possible, reforms to improve institutional arrangements in inland navigation, such as the revision of the 1948 Belgrade Convention on the regime of navigation on the Danube, as well as advocate for and support any measures aimed at the provision of the adequate human and financial resources to the existing IWT institutions.