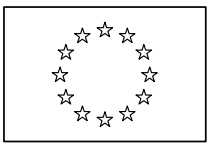

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Annex to the

COMMUNICATION FROM THE COMMISSION

ON THE PROMOTION OF INLAND WATERWAY TRANSPORT

"NAIADES"

An Integrated European Action Programme for Inland Waterway Transport

{COM(2006) 6 final}

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PART I: "NAIADES" ACTION PROGRAMME - INSTRUMENTS FOR IMPLEMENTATION

A. Legislative instruments

Action cluster	Instrument	Actor(s)	Priority	Target date*	Estimated costs 2006-2013** (mln EUR)
	Harmonisation of:				
1	▪ technical requirements for vessels	EC/EU	+++	ongoing (prop.COM (1997) 644)	–
1	▪ intermodal loading units (ILU)	EU		2006 (prop.COM (2003) 155)	–
4	▪ statistics of goods transport by inland waterways	EC/EU	+	2007 (prop.COM (2005) 366)	–
1, 2	State aid guidelines for support schemes and possibly de minimis rules for IWT	EC	++	2007	–
	Harmonisation of:				
2	▪ transport of dangerous goods	EC/EU	+++	2007	–
2	▪ engine emissions	EC/EU	++	2007	–
	Package of proposals aiming to reinforce the position and the normative framework of inland waterway transport (including EC Membership in River Commissions)	EC/EU	+++	2008, partly proposed (SEC(2003) 897)	X[a]
	Harmonisation of:				
1	▪ boatmasters' certificates	EC/EU	+++	2008	–
1	▪ intermodal liability	EC/EU	-	2008	–
1	▪ manning requirements	EC/EU	+++	2009	–
2	▪ waste disposal	EC/EU	+	2009	–
3	▪ education and training standards	EC/EU	+	2009	–
1	▪ intermodal documentation	EC/EU	-	2010	–
5	▪ infrastructure charging	EC/EU	-	2013	–
2	▪ fuel quality	EC/EU	++		–

EC = European Commission; MS = Member States; EU = European Union.

* Indicative date of entry into operation.

** All amounts indicated in this table are indicative and for illustration purposes only. The financial participation of the Community for 2006 is included in the amounts foreseen in the budget procedure for 2006. As regards 2007-2013, the financial participation of the Community is purely indicative and does not constitute a commitment.

B. Policy instruments

Action cluster	Instrument	Actor(s)	Priority	Target date*	Estimated costs 2006-2013** (mln EUR)
5	TEN Coordinator Inland Waterways	EU/MS	+++	2006	0.3[b]
1, 2, 3	Funding Handbook for IWT industry	EC	+++	2006/7	0.25[c]
1	Screening for barriers in existing and new European and national legislation	EC	+++	2006/7	0.25[d]
1	Administrative one-stop-shops and IWT focal points	MS (EC)	+++	2006/7	-
3	Social dialogue within sector (working conditions, working time arrangements, definition of EU-wide professional qualification requirements, etc.)	Social partners (Sectoral Dialogue Committee)	+++	2006/7	-
4	IWT Market observation	EC	+++	2008	1.5[e]
5	European Development Plan for improvement and maintenance of waterway infrastructures and transhipment facilities	EU/MS	+++	2009	–
3	Recruitment campaigns	MS/ Industry	+		X[f]
5	Spatial planning giving higher priority to (re-)developing industrial zones nearby waterways	MS	++		–
5	Interdisciplinary dialogue on project level	EC/MS	++		–

C. Support instruments

Action cluster	Instrument	Actor(s)	Priority	Target date*	Estimated costs 2006-2013** (mln EUR)
2, 3	**European IWT Reserve Fund (Regulation (EC) 718/99)**	EU/MS/ Industry	+++	2007/8	X[g]
	National support programmes		+++		
1	▪ to promote modal shift and facilitate investment (incl. research and fiscal incentives)	MS			100 – 140[h]
2	▪ to facilitate efficiency, environment and safety-enhancing technologies (incl. research and fiscal incentives)	MS			250 – 300 [i]
4	▪ for national promotion and development organisations and their network	EU/MS			± 30 [j]
5	▪ National funding schemes for infrastructure improvement and maintenance	MS			7,000 – 9,000[k]
	European RTD and support programmes to		+++		
1	▪ Create favourable conditions for services	EU/MS/ Industry			
	– Marco Polo				±20% of budget
	– Competitiveness and Innovation framework Programme (CIP)				not specified
	– INTERREG				
2	▪ Stimulate fleet modernisation and innovation	EU/ Industry			
	– R&D programmes (FP 7)				not specified
	– Lead projects for sector innovation				
3	▪ Promote jobs and skills	EU/			
	– EU support for projects in the area of education and training (e.g. the Community Education and Training Programmes or EU RTD programmes)	Industry/ education & training institutes			not specified
	– Specific training programmes for IWT needs				not specified
5	▪ Provide adequate infrastructure for	MS/EU			
	– Priority projects N° 18 and 30			2013	4000[l]
	– Other projects of common interest, port and terminal development				±10% of total TEN-T budget
	– RIS implementation (TEN-T MIP)				± 120 [m]
	– – PHARE, ISPA, CARDS, INTERREG				not specified

[a] Depending on the options to be chosen.

[b] Estimated expense allowances 50.000 € p.a.; to be covered within Budget line 06 0301 (Trans-European networks- Transport), Legal base: Decision N° 884/2004/EC

[c] Tender covering investigation, compilation, translation, publication, and up-date. To be covered by Budget line 06 020 401 (Internal Market – Optimisation of transport networks). Decision to be taken in the context of the annual budget procedure 2006.

[d] Tender covering survey with industry, national authorities, analysis, assessment, recommendations. To be covered by Budget line 06 020 401 (Internal Market – Optimisation of transport networks). Decision to be taken in the context of the annual budget procedure 2006.

[e] Current Market observation is carried out by CCNR with a subvention by the EC (N° TREN/04/MD/S07.39091). The budget amounts to 150.000 € p.a. of which 50% are covered by the EC. Runs until 2007. As of 2008 system needs to be decided upon again. In the case that the Commission will ensure the system, the budgetary decision needs to be taken in the framework of the budget procedure (Budget line 06 020 401 (Internal Market – Optimisation of transport networks). Could be task of Community structure.

[f] To be determined by MS according to their needs (C.f. Ausbildungsprogramm (ABI) in Germany with 1,5 Mio € p.a.).

[g] The Inland Waterway reserve fund containing around 40 Mio € (financed by the profession on the basis of Council Regulation (EC) N° 718/1999) could be reassessed in order to examine additional sources of financing and funding matters (See below Part II, point 2.2.1.).

[h] Basic assumption: 1 Mio € p.a. and per MS, 15 MS, during 7 years. (C.f. NL spend currently 2 Mio € p.a., Austria 1 Mio € p.a., Wallonia 0.3 Mio € p.a. for modal shift actions.)

[i] Basic assumption is that NL, which cover around 50 % of the fleet (BE: 16%, F: 15%, D: 14%, Rest: 5%), spend currently ca. 20 Mio € p.a. for environment enhancing technologies in inland waterway shipping (NOx reduction). Another 20 Mio € p.a. to be invested by the remaining countries.

[j] Basic assumption: 350.000 € p.a. and country, 12 MS with significant inland waterway transport, 7 years. (C.f. Annual expenditure for Promotion Centres in NL: 5000.000 €, A: 250.000 €, D (SSS): 300.000 €). IWT Promotion Centres already exist in 4 Member States. For the remaining 8 MS with significant inland waterway transport, the EU contribution could take the form of a start–up aid of 45.000 € per organisation to be covered within Budget line 06 020 401 (Internal Market – Optimisation of transport networks). (C.f. EU contribution for SSS Promotion Centres)

[k] Basic assumption: 125 Mio € p.a. per country, 8 MS with significant inland waterway networks, 7 years (C.f. NL: 380 Mio € p.a., D: 350 Mio € p.a.)

[l] TEN-T projects are financed by MS with TEN-T support by the EU. The costs for Priority projects N° 18 (Danube Straubing-Vilshofen, Vienna – HU border) are estimated at 1,200 Mio €, the Canal Seine-Scheldt (N° 30) at 2,500 Mio €. EU Contribution to be covered within Budget line 06 0301 (Trans-European networks- Transport), Legal base: Council Regulation N°2236/95 (EC) as amended.

[m] The scope of the inland waterway network under the RIS Directive is about 12.000 km. Rough calculations estimate the costs of RIS installation at 10.000 € per kilometre waterway. RIS installation is eligible under the TEN-T Budget. EU Contribution to be covered within Budget line 06 0301 (Trans-European networks- Transport), Legal base: Council Regulation N°2236/95 (EC) as amended.

PART II: DETAILED DESCRIPTION OF ACTIONS AND MEASURES

1. CREATE FAVOURABLE CONDITIONS FOR SERVICES

1.1. Current issues

Inland navigation traditionally holds a strong market share in the transport of bulk cargo such as iron ores, construction materials, metal products. In addition to these traditional markets, inland navigation is successfully expanding into new markets such as the hinterland transport of maritime container, waste and recycling, dangerous goods, transport of vehicles, abnormal indivisible loads, as well as in River-Sea-Shipping.

The hinterland transport of maritime containers by inland waterways has prospered in North-Western Europe since the 1990s. Between 1995 and 2003 container traffic by inland navigation has tripled on the Dutch waterways, whereas on German inland waterways, it has doubled between 1998 and 2004 from one million TEU to almost 2 million TEU per year. Container transport on the Flemish waterways has also shown remarkable growth with an average yearly increase of 31% between 1997 and 2004. A comparable development has taken place in France, with average yearly growth rates of 22% between 1995 and 2004.

The success of the container transport services has been the result of entrepreneurial initiatives that combined competitive cost structures with logistically attractive service levels. The existing co-operation models between barge operators (so-called "Fahrgemeinschaften") and their main customers have demonstrated how strategic co-operation leads to operational efficiency. High shipment frequencies, door-to-door services, sufficient vessel utilisation and economies of scale can be achieved when individual barge operators and private ship-owners participate in a central planning system in which cargo space can be booked. Each operator thereby maintains his commercial identity. These forms of barge pooling are currently operational on the Rhine, as well as between Rotterdam and Antwerp.

The developments in the hinterland transport of maritime containers in Western Europe have demonstrated that inland navigation can quickly respond to new market requirements and consequently take over significant shares of transport volumes. The expansion into other promising markets such as the continental cargo market and intermodal transport in Central and Eastern Europe should be pursued with the same philosophy of customer-orientation combined with operational co-operation models.

Regular container liner services to and from destinations along the Danube, Elbe and Odra have been complicated by a number of factors. Firstly, critical mass of cargo has often been lacking in the past, especially for shipments originating from the Black Sea area and South-Eastern Europe. The economic integration of this region and the ongoing enlargement process of the European Union is leading now to significant shifts of industrial activity. New industrial clusters in new Member States and Candidate Countries are already generating demand for containerised transport on a large scale. The main share of this market, however, is currently being captured by the road transport sector. Modal shifts towards inland navigation will be hard to realise as long as logistics patterns are geared towards the use of road transport. Secondly, entrepreneurial initiatives got off to a slow start in Central and Eastern Europe. The privatisation of the formerly state-owned companies and the emergence of new barge operators will however bear fruits. Thirdly, several infrastructural bottlenecks hinder the emergence of intermodal services along the Danube and Main corridor but also on

the Elbe and Odra. The bottlenecks that are a barrier for intermodal services include low bridges on the rivers Main and Upper Danube and partly obsolete port infrastructure in South-Eastern Europe.

1.2. Proposed actions and measures

1.2.1. Attract new markets

Investigate and implement new logistics concepts

Market segments involved in the carriage of continental general cargo using loading units such as continental containers, swap bodies, pallets, reefer containers are promising, but are still in their infancy. New market niches which also need to be developed further can be identified in the areas of waste and recycling, dangerous goods, heavy lift cargo, and river-sea shipping. The opportunities for innovative intermodal services should be investigated and implemented in order to attract new markets. This should be based on a continuing dialogue between market actors. Local and regional initiatives for co-operation between the inland navigation sector and freight-forwarders, shippers and authorities should guarantee customer-orientation and the successful launch of new services. In this context, the regional and national Chambers of Commerce and Industry can play an active role to promote the use of inland navigation among their members.

Support liner services for intermodal transport

Since new services require strong synergies and critical mass to penetrate into the market, it is necessary to support these services by reducing the high financial risk of the starting phase. Financial support should be dependent of the actual transport performance and the reduction of the external costs that is caused by the modal shift towards inland navigation. Grants could be given under the condition that the intermodal services are open to any potential customer. Moreover, subsidised intermodal services should adhere to fixed time schedules and frequencies.

Improve co-operation between modes and within the sector

In addition to financial support, strategic alliances between barge operators, skippers, ports and other modes will be crucial to the success of intermodal inland navigation services. Operational co-operation allowed the commercially successful Rhine operators to offer cost-efficient and logistically attractive services. Therefore, Member States should also provide organisational and practical support, for instance supporting the creation of operational and business plans, lobbying and marketing activities, providing information on legal conditions, etc. Ill-prepared projects and unsuccessful launch of new services would lead to a long-term loss of trust in the capabilities of inland navigation among potential customers.

1.2.2. Encourage entrepreneurship

Attract newcomers

The current commercial success of container transport by inland waterways can for a main part be explained by the efforts and the entrepreneurial spirit of individual ship-owners. These private ship-owners often sail with their families on board, have long working days and hence have low overhead costs. The gradual decrease of the family-dependent ship-owner structure and the lack of successors will pose a major problem to the future development of inland

navigation. New operation models (e.g. with two or more family members operating one vessel in turn) may partly solve the successor problem. A fundamental improvement of the framework conditions (e.g. access to capital, removal of administrative barriers, education and training) will however be needed to attract newcomers to the sector.

Facilitate access to finance for SMEs

Difficult access to capital and the financial risks that are involved with the required investments hinder the establishment of new services, especially for newcomers. Therefore, given the SME character of the inland navigation sector, financial thresholds for support programmes should be kept low. The creation of administrative *one-stop-shops* and *IWT focal points* (see action cluster 4) as well as the compilation of a Funding Handbook for inland navigation will be of great use. The *Funding Handbook* provides topical information on funding subjects, funding criteria, example projects, contact persons and funding organisations. These initiatives should support inland navigation companies in acquiring and applying for available funds and instruments. These include funds from the European Investment Fund (ETF Startup Facility, Seed Capital Action, SME Guarantee Facility), Marco Polo for intermodal transports, or incentives in the framework of the proposed Competitiveness and Innovation Programme (CIP). Dedicated *state aid guidelines* shall provide Member States with a clear, comprehensive and predictable framework for subsidies in the field of inland navigation. They will ensure a level playing field between companies and Member States and could additionally serve as best practice for allowable support initiatives. In this context, the extension of the *de minimis aid rules* to the inland navigation sector could also be considered.

1.2.3. Improve administrative and regulatory framework

Abolish administrative barriers to IWT development

The regulatory framework pertaining to the inland waterway sector should support entrepreneurial initiatives. A fair entrepreneurial climate would mean that the same criteria should apply to all entrepreneurs, regardless of their nationality or transport mode. Since regulations often have clear cost and safety impacts for operators (e.g. technical requirements for vessels, working hour regulations, etc.) unequal administrative requirements can cause unfair competition. Harmonisation of the administrative requirements would also contribute to the integration of inland navigation into intermodal logistics chains, as it would significantly raise the 'ease-of-use' of inland navigation.

Ensure a level playing field/avoid competition distortions

Within a lean administrative and regulatory framework, a higher level of knowledge of applicable rules could be expected, loopholes between different regulations could be reduced, mutual recognition of certificates would be simplified, and controls would be more efficient. As a result, distortion of competition could be reduced significantly.

Improve co-ordination between relevant public services

Existing and new European and national legislation should be *harmonised* and *screened for potential barriers* (e.g. manning, vessels, boatmasters' certificates, intermodal documentation). Improved co-ordination between relevant public services (e.g. European Commission, CCNR, Danube Commission, UNECE) is therefore required. The creation of

administrative one-stop shops and IWT focal points within administrations will significantly contribute to achieve this objective.

1. CREATE FAVOURABLE CONDITIONS FOR SERVICES	
Proposed actions and measures	
Attract new markets ▪ Investigate and implement new logistics concepts ▪ Support liner services for intermodal transport ▪ Improve co-operation between modes and within the sector **Encourage entrepreneurship** ▪ Attract newcomers ▪ Facilitate access to finance for SMEs **Improve administrative and regulatory framework** ▪ Abolish administrative barriers to IWT development ▪ Ensure a level playing field/avoid competition distortions ▪ Improve co-ordination between relevant public services	
Instruments	**Actors**
▪ State aid guidelines for support schemes and possibly de minimis rules	EC
▪ Support programmes to promote modal shift and facilitate investment (incl. research and fiscal incentives)	MS
▪ EU RTD and support programmes (FP 7, Marco Polo, CIP, INTERREG)	EU/MS/Industry
▪ Funding Handbook for IWT	EC
▪ Administrative one-stop-shops and IWT focal points	EC/MS
▪ Screening for barriers in existing and new European and national legislation	EC/MS/Industry
▪ Harmonisation of manning requirements, vessels and boatmasters' certificates, intermodal documentation, liability, and loading units (ILU)	EU

2. STIMULATE FLEET MODERNISATION AND INNOVATION

2.1. Current issues

The transport vehicles used in inland waterways are self-propelled dry cargo and tank vessels, push boats, tugs and barges. Approximately 12,500 motorised units are registered in the EU-25, about 95% of them being registered either in The Netherlands, Germany, Belgium or France. The Dutch fleet represents about 50% of the European Union's fleet – measured according to number and capacity. Self-propelled dry cargo vessels (about 7,100 units) and tanker vessels (about 1,400 units) are the most frequently encountered types of vessels on the European waterways. The remaining number of vessels is made up by either tugs or push boats.

One of the most distinctive characteristics of inland waterway vehicles compared to other modes of transportation is their long life-time. Nowadays the average age of a self-propelled European dry bulk ship is 37 years, whereas tanker ships have an average age of 31 years. The ageing process of Europe's inland fleet continues. For example, the average age of German dry cargo fleet had increased from 48 years in 1995 to 50 years in 2004. For tank vessels this is 28 and 30 years respectively. These figures however blur the fact that, despite the original hull being relatively old, ship equipment such as engines, propellers, and communication tools are being modernised on a continuous basis. Ship owners themselves change propulsion engines and other components of ship's systems, whenever such substitution is commercially feasible and economically justifiable for them. Furthermore, innovative information and communication applications and services impose a permanent upgrading of the electronic equipment on the bridge.

The introduction of new vessels in the last decades has resulted in an increase of average carrying capacity. Large inland vessels carrying up to 5,000 tonnes (135m length, 17m width, 4m depth) are no more an exception. Tanker vessels have become even bigger, up to 8,000 tonnes. However, also smaller vessels are considered to have a future, in order to serve customers along smaller waterways and to provide feeder services from and to ports ("hubs"). For instance, a quarter of the Dutch fleet's capacity is still formed by vessels carrying less than 1,000 tonnes.

2.1.1. Efficiency performance

The total costs of operating an inland vessel can be divided into so-called stand-by costs and operating costs. Stand-by costs include all costs that are payable regardless of the actual activity of the vessel, such as labour costs, capital costs (interest, depreciation), insurance, overheads and maintenance costs. Operating costs are basically formed by costs for fuel, lubricants, port dues, etc. Logistics efficiency is raised as soon as the ratio between total costs and carrying capacity (e.g. costs per tonne-km) is reduced.

The share of labour costs in the total costs can be as high as 57%, especially for smaller ships. The continuing trend towards larger vessels can therefore be seen as a way to raise labour productivity on board. Larger vessels will however generally have to bear a larger share of capital and maintenance costs. These additional costs have to be outweighed by productivity gains. These productivity gains can be achieved through faster loading and unloading procedures; by realising more round trips per year; by reducing specific fuel consumption, etc.

The reduction of fuel consumption has received attention in the last years, not least because of the dramatically increasing fuel prices. The price for gas oil had increased by 100% between January 2004 and August 2005. Optimising this cost factor not only means reducing operational costs, in most cases this also implies improving environmental performance of vessels. The basic parameters that influence fuel consumption are flow velocity, draught of a vessel, water depth, hull shape, vessel speed, and engine capacity. Average self-propelled vessels consume up to 0.013 litre per tonne-km, whereas modern vessels can achieve gas oil consumption as low as 0.0044 litre per tonne-km. Compared to rail (0.0095 l/tkm) or road transport (0.0292 l/tkm), average fuel consumption for inland navigation (0.0083 litre/tkm) is relatively low.

2.1.2. Safety performance

At present, inland shipping is responsible for roughly 80% of all transported hazardous goods in Europe. This is due to the exemplary safety record of inland navigation. Safety levels can nevertheless still be improved. Safety measures should be concentrated on on-shore measures (traffic information and management), on-board measures (navigational equipment and vessel design), the interface vessel-shore, regulatory measures (the revised ADN rules), as well as measures aimed at training and education.

The ship's construction is mainly responsible for the extent of the effects of an accident. Constructional innovations to raise the safety levels of inland navigation include, among others, double hulls and the use of a high impact resistant hull that absorbs and dissipates the impact energy. New hull types do not only withstand high energy impacts, but can also be very light due to the use of composite synthetic fibres, so little or no cargo capacity is wasted. Additionally, alternative designs for anchors and other protruding parts of the vessel have been developed and can be implemented.

2.1.3. Environmental performance of vessels

The specific fuel consumption of ships, which is directly linked to the emission of carbon dioxide, sulphur dioxide and nitrogen oxides (CO_2, $SO_2$and NOx), is relatively low compared to other modes of transport. However, during the last decades, the road transport sector improved its emission standards through stringent regulation, targeted research and investments. The previously unrivalled position of the inland waterway sector in terms of environmental performance is increasingly being contested. This correlates with the gradual ageing of the European fleet. For instance, 50% of the active Dutch fleet was built before 1960, and the majority of engines currently in use was built before 1980. Inland navigation needs to catch up with modern and environmentally friendly developments, mainly by investing in low-emission fuels and engine techniques, for new engines and for retrofit.

Carbon dioxide CO_2

CO_2 is a greenhouse gas which contributes to global climate change. A further reduction of fuel consumption and CO_2 emissions per tonne-kilometre can be achieved by the application of improved propulsion mechanisms and engines, the optimisation of hull design, and improved sailing behaviour. Even subtle changes in hull design or hull/water interaction may result in significant reductions of resistance. Additionally, sailing behaviour can be made more environmentally friendly with the help of information technology that supports boatmasters in finding optimal speeds depending on waterway conditions.

Sulphur dioxide SO_2

SO_2 is an air pollutant which contributes to environmental acidification and the formation of secondary particles which harm human health. Emissions of sulphur dioxide are directly linked to the levels of sulphur in the fuel – which is usually gas oil in the case of inland vessels. Sulphur is a natural component of crude oil and unless it is removed in the refining process it remains in the end product. EU sulphur levels for this fuel are regulated by Directive 99/32/EC as recently amended by 2005/33 on sulphur content of marine fuels. The present sulphur limit is 0.2%. The Directive states that the sulphur content of gas oil should be lower than 0.1% by 2008, and the amending proposal makes the use of marine fuel having less than 0.1% mandatory for all inland vessels from 2010, unless approved abatement technologies, e.g. exhaust gas cleaning, are used to reduce emissions to the same level. Modern engine design already allows sulphur concentrations as low as 500 ppm (approx. 0.05%), without running the risk of damaging the engine.

Nitrogen oxides NO_x

NO_x is an air pollutant which contributes to environmental acidification, the formation of ground-level ozone (smog), and the formation of secondary particles which harm human health. Emissions of nitrogen oxides (NO_x) can be reduced by engine management technologies that cut the amount of NO_x formed during combustion, particularly using water injection or humid air. Other end-of-pipe measures (e.g. Selective Catalytic Reduction) take NO_x out of the exhaust gas after combustion. Since 1st January 2002 a first stage emission standard for NO_x, hydrocarbons (HC) and particulate matter (PM_{10}) is in force on the Rhine. As of 2007 a second stage standard will be applicable on all Community inland waterways[1].

Particulate matter PM

PM is an air pollutant which harms human health, causing respiratory and heart conditions. PM can take the form of primary particles, directly emitted, or secondary particles, which are formed in ambient air as a result of other emissions, eg sulphate and nitrate particles resulting from SO_2 and NO_x emissions. This means that techniques to reduce SO_2 and NO_x emissions can also significantly reduce PM emissions. Techniques specifically for reducing PM emissions such as particulate traps are used in other transport sectors, and could in principle be applied to inland vessels.

Volatile Organic Compounds (VOCs)

VOCs are air pollutants which contribute to the formation of ground-level ozone (smog) and can harm human health. VOC emissions from inland vessels principally take the form of vapour releases from petrochemical cargoes. Deliberate releases are made for safety reasons, to reduce cargo pressure during loading, unloading and transport. The issue is addressed by Directive 1994/63/EC on vapour emission recovery, and by Rhine regulations. However it is important that deliberate vapour emissions continue to be monitored and if possible recovered, and that accidental and fugitive emissions are kept to a minimum.

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[1] See Directive 2004/26/EC of the European Parliament and of the Council of 21 April 2004 amending Directive 97/68/EC on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery.

Bilge water

A specific environmental issue regarding inland navigation is the leakage of oil and grease (bilge water). Although modern propeller shaft seals are completely water tight, about 70% of all barges still have seals that leak water into the bilge. Along the river Rhine, in the Netherlands, Germany, France and Switzerland there are waste disposal facilities that collect the bilge water and other waste from inland shipping. About 60.000 tonnes of bilge water is collected every year, along with 5.000 tonnes of sludge, grease, rags, filters, engine coolant etc. Comparable services are for instance lacking in the Danube area.

2.2. Proposed actions and measures

2.2.1. Improve logistics efficiency, safety and environmental performance of IWT

Develop and facilitate use of innovative vessel concepts and technologies

The previous sections have shown that many different technologies and vessel concepts have been developed in the last decades, in order to raise the efficiency, safety and environmental performance of inland navigation. Whereas some types of innovation have found wide application (e.g. radar, bow thrusters) either through regulation or because of their direct commercial benefits, other innovations still need further research and development. Particular attention should be paid to the improvement of economic performance of small vessels, vessels operating under extreme circumstances (e.g. low water depths, ice), as well river-sea concepts. Adapting vessel design and standards to the conditions of particular rivers should be considered. Financial means in the framework of European RTD and support programmes (FP 7, lead projects for sector innovation) should be reserved for these purposes.

In the last years, countries such as France, Belgium and the Netherlands have notified support programmes, which subsidise purchase and installation of more efficient engines (with improved economic and ecological characteristics), bow thrusters (to improve navigability and safety during mooring), modern navigation and telecommunication technology (e.g. radar, auto-pilot, GPS), etc. These support measures can include financing terms that take into account the specific character of the inland navigation business (long life-time of investments, high investment sums), direct grants for environmentally-friendly innovations, or fiscal provisions (e.g. deferred income tax on accounting profits in case of large investments). In order to create a level playing field, the *state-aid guidelines* (see action cluster 1) will also apply to fleet support programmes.

The necessary innovation of the fleet is hampered by the SME character of the inland navigation sector - the share of one-vessel-enterprises exceeds 70% in most countries - and the limited available capital resources. Therefore, public support measures are indispensable to realise technical adjustments and modernisation of vessels. Targeted financial incentives for modernising the fleet and fostering the personal resources can stimulate the available potential and help to exploit existing market opportunities. Therefore the set up of an innovation fund at EU level should be considered. The *IWT Reservation Fund* created under Regulation (EC) N° 718/99 and financed by the profession could be reassessed to assist innovative concepts around the vessel:

- to encourage the modernisation of vessels in order to improve working and living conditions and to fulfil technical safety and environmental requirements;

- to encourage owner-operators to set up alliances and to join trade associations, in order to create critical mass or organisational opportunities;

- to encourage the establishment of new services and promising logistics concepts, where other instruments (e.g. Marco Polo) do not intervene;

- to support vocational training and training schemes and entrepreneurial skills;

- to support recruitment initiatives, scholarships for trainees.

The fund would be directed to the IWT industry. It could be considered to be financed in equal parts by the IWT sector, the EU and Member States.

Encourage use of eco-efficient engines and renewable energy sources

Standards for emissions to air have to be refined in an ongoing process. These standards will significantly improve environmental performance of the inland navigation sector. First steps have been taken with the introduction of emission standards by the Central Commission for the Navigation on the Rhine (CCNR) and the European Union. Additional regulation by the Community may be required in order to reduce the sulphur content of gas oil. Funding for R&D and demonstration projects regarding eco-efficient engines, hull design, propeller design etc. should be provided. Funds should also be made available for the introduction of catalytic converters, SJAC and other filtering techniques. Bilge water and waste collection services as offered along the river Rhine should be made available throughout Europe. In order to create a level playing field, further harmonisation needs therefore to be considered.

In the long run, opportunities to develop non-carbon fuels and zero-emission engines should be further pursued. The use of biofuels, especially biodiesel, should be exploited. Fuel cells transform hydrogen directly into electrical energy while producing only water or other harmless substances. Further research should be aimed at on-board testing and overcoming current disadvantages of hydrogen, in particular flammability and space requirements.

Encourage use of safety-enhancing technologies

Apart from safety-enhancing measures such as the introduction of River Information Services, modern and safe vessel designs should be investigated and tested. New concepts, however, need funding from research and support programmes, which may take the form of direct grants or fiscal incentives. Compliance with international safety standards for vessels is to be pursued by legal measures at the European level. Regarding the *transport of dangerous goods* in inland navigation the ADNR (Agreement concerning the transport of hazardous goods in inland navigation on the Rhine) is effective only on the Rhine and in some Member States. The ADN (International agreement concerning the transport of dangerous goods) is still not ratified by all signatory states. In order to create a level playing field, especially for the companies that operate in the Common Market, it is important that common rules for this transport, based on ADN are introduced and applied to all Community inland waterways.

Develop refit concepts for existing vessels

Modernising Europe‘s inland fleet represents an effective and long-lasting measure to improve the efficiency, safety and environmental performance of inland navigation. In general, two approaches exist to implement vessel innovations: construction of new vessels

and modernising existing vessels. However, innovative measures have been systematically analysed almost exclusively in the context of new-constructions. Refit concepts through which modern components can be installed in already existing vessels have not been developed to the same extent. For instance the interactions between prime engine, gear and propeller and other equipment has not been systematically analysed yet. Hence, R&D activities should consider refit concepts and support and speed up the fleet modernisation process.

2. STIMULATE FLEET MODERNISATION AND INNOVATION	
Proposed actions and measures	
Improve logistics efficiency, safety and environmental performance of IWT ▪ Develop and facilitate use of innovative vessel concepts and technologies ▪ Encourage use of safety-enhancing technologies ▪ Encourage use of eco-efficient engines and renewable energy sources ▪ Develop refit concepts for existing vessels	
Instruments	**Actors**
▪ State aid guidelines for support schemes and possibly de minimis rules	EC
▪ Support programme to facilitate efficiency, environment and safety-enhancing technologies (incl. research and fiscal incentives)	MS
▪ EU RTD and support programmes (FP 7, lead projects for sector innovation)	EU/Industry
▪ European IWT Reserve Fund (Regulation N° 718/99)	EU/MS/Industry
▪ Funding Handbook for IWT	EC
▪ Improvement of environmental and safety legislation (incl. engine and cargo emissions, waste disposal, fuel quality, transport of dangerous goods)	EU

3. PROMOTE JOBS AND SKILLS

3.1. Current situation

The excellent safety and efficiency record of inland navigation depends for a main part on the presence of skilled staff. The development within the last years however shows a clear decline of national nautical personnel, especially in the Rhine corridor. Decreasing numbers of school graduates opt for an education in the transport sector and the inflow of young people is decreasing. For instance, the number of apprentices in the German inland navigation industry had decreased dramatically between 1990 (400 students) and 2000 (164 students). This downward trend has however meanwhile been successfully reversed through a series of targeted educational initiatives. In addition, education institutes are facing high drop-out rates – even up to 42% in some Dutch schools for crewmen.

As of the late 1990s, it became more and more difficult to hire qualified, well-trained, affordable and motivated staff. Member States like the Netherlands partly solved this problem by allowing barge owners to hire foreign work force. Only in 2004 about 700 work permits for Czech crewmen were issued in the Netherlands. Hiring crew from Central and South-Eastern Europe is an option, but requires new company structures and involves higher costs levels, compared to the traditional family enterprises. The well-trained and experienced crewmen from Poland, Czech Republic, Hungary, Romania, Bulgaria, Serbia and Ukraine are interesting for Western European employers (and vice versa). The shortage of qualified staff therefore remains an important issue to be solved.

The reasons for the shortage of qualified personnel in Western Europe are manifold. The working profile and the living conditions on board appear to play an important role. Working and living conditions of the crew members on board compete with those of other sectors ashore, and consequently sometimes appear less attractive in the perception of applicants. Additionally, the amount and irregularity of leisure time, lacking career opportunities in combination with a low profile and image of the inland waterway sector are mentioned as main causes for the lack of personnel.

Apart from the quantitative shortage of personnel, also qualitative shortcomings arise. Traditional education programmes for crewmen are concentrated on topics such as:

- Planning and organisation of life and team work on board;
- Scheduling ship operation;
- Operation and maintenance of propulsion unit and main engine;
- Behaviour of inland ships during operation;
- Training of signalling during operation and stopping manoeuvres;
- Maintenance of ships hull and other equipment;
- Loading and unloading procedures;
- Initiation of action after collisions.

New and other skills are however required from personnel. Staff and crew members not only have to demonstrate proficiency in the fields of navigation, technical know-how, and safety procedures, but should also be literate in terms of business management, ICT, linguistic, and social skills. Moreover, increasing international traffic (e.g. between Rhine and Danube corridor) and labour migration have revealed shortcomings in terms of mutual recognition of professional qualifications (due to differing education standards), knowledge of foreign waterways (river certificates) and linguistic skills. These deficiencies may potentially endanger safety on board.

3.2. Proposed actions and measures

3.2.1. Attract workforce

Improve working and social conditions

Improved working and social conditions are of imperative importance in order to attract workforce. Healthy, safe and secure working conditions for personnel on board should be guaranteed at all times. Other social standards (e.g. health, accident, pension insurances) should keep up with general standards in other sectors. Current loopholes in the national legislation should be avoided, because they may lead to unfair competition and possibly endanger safety on board. In order to provide a level-playing field for all companies in the inland waterway sector, the approximation of national legislation should be pursued. Moreover, modern and up-to-date accommodation standards providing sufficient room on board are clearly necessary. Attractive working time models should be developed and offered to allow a good balance between work and leisure time. At European level, the Sectoral Dialogue Committee on Inland Waterways[2] is the natural place to discuss matters related to working conditions.

Create awareness and improve career opportunities

Positive actions should also be taken to improve the profile and image of the inland waterway sector as a potential employer, in order to create awareness and improve career opportunities. Local employment agencies should take up responsibilities to recruit personnel for the sector. Young trainees and personnel from other sectors should be offered a clear career perspective: starting to work in the inland navigation sector means having a secure job and opens up career opportunities in the logistics sector. Awareness and recruitment campaigns should be initiated, in order to promote inland navigation as a modern and innovative business sector that offers career opportunities. In addition it is also essential to create a modular education and training system for the inland navigation sector. Starting an education in the inland waterway sector would then be more attractive for students with various educational backgrounds. Students from related business sectors (e.g. road transport sector), who have already attended vocational education, would thereby have easier access to a career in the inland navigation sector. Especially the current lack of work force could be solved through these measures.

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[2] Established in accordance with the Commission Decision of 20 May 1998 on the establishment of Sectoral Dialogue Committees promoting the dialogue between the social partners at European level (OJ L 225, 12.8.1998).

Stimulate labour mobility

Another measure to attract workforce to the inland waterway sector is to stimulate labour mobility in Europe. Given the lack of qualified staff, the sector could benefit from the recruitment of qualified personnel from the new EU Member States, which can offer a high level of education and training. As regards workers from the new Member States that entered the EU in 2004, the full application of the principle of free movement of workers by Member States could offer an immediate solution. As regards workforce from third countries, the general framework directive – announced in the Policy Plan on Legal Migration[3] for 2007 – will also cover the rights of these third-country workers. At least for those sectors facing staff shortages – such as the inland navigation sector – clear and harmonised rules should be defined, implemented and strictly controlled, in order to avoid abuses. In this context, sector specific activities could be organised within the framework of the 2006 European Year of Workers' Mobility and of the implementation of the different actions foreseen in the Policy Plan on Legal Migration for the period 2006-2009.

Enhance cooperation regarding mutual recognition of qualifications

Community law concerning inland waterway boatmasters' certificates has evolved in two stages: the principle of mutual recognition of national certificates by Member States was introduced in 1991 and in 1996 the conditions for obtaining national certificates were harmonised on the introduction of a Community model certificate. European rules for the mutual recognition of education certificates of ordinary crewmen are lacking, which currently also limits access to the labour market. International co-operation and mutual recognition of qualifications (and consequently of education and training regulations) should be extended to achieve maximum social mobility of employees in the inland navigation sector. The Commission is currently bringing forward a European Qualifications Framework (EQF) which will facilitate the transfer and recognition of qualifications by linking national and sectoral qualifications systems. The EQF will act as a neutral European reference point, which will simplify comparison of qualifications and allow a better match of knowledge, skills and competences, thus supporting labour mobility across Europe. Clear job descriptions should be established to describe all necessary skills and knowledge to fulfil the respective functions on board. Furthermore, these profiles would be the basis for training, examination and certification standards. Such job profiles have been defined for crewmen and boatmasters in the Netherlands, Belgium, Germany and France. These profiles, which are very similar, need to be harmonised (but not equalised) and defined for all states involved in international European inland navigation. Attention should be paid to facilitate the recognition of qualifications of third-country workers in this sector.

3.2.2. Invest in human capital

Preserve education and training institutes

A functioning education and training infrastructure is a basic requirement for a sound labour market and the future development of inland navigation in Europe. Many education and training institutes are however currently faced with declining numbers of students. The existence of these institutes has to be secured, provided that their curricula are adapted to

[3] COM(2005) 669, 21.12.2005.

current market needs. The Community Education and Training Programmes are potential sources of funds for specific projects.

Curricula and education concepts should be developed in close co-operation with the inland navigation sector. Education institutes should develop skills that combine technical knowledge with personal and social competencies. Moreover, simulation learning tools comparable to those in aviation and maritime navigation need to be introduced in education curricula. With a focus on safety, ship handling simulators would enhance the process of learning by doing by young apprentices. Taking into account the enlargement of the EU and the further internationalisation of inland navigation, ship handling simulators can also support experienced staff to prepare for navigation in unknown and critical areas.

Stimulate life-long learning

The everyday demands upon those who are active in the inland waterway sector have increased dramatically during the last decades. This applies to nautical, technical, safety, ICT, managerial as well as social skills. Life-long learning in these various fields should be stimulated. At present, vocational training courses (e.g. radar certificate, ADNR certificate) are offered by a series of independent training institutes, which are poorly interrelated and coordinated. A concept for life-long vocational training should therefore be established. Such a concept should consist of training modules that can be mutually recognised, should include commercial and business management modules, as well as opportunities for advanced training. A vocational training concept would allow obtaining a general-education degree up to admission to technical college. By enabling students to move up to higher education, new career paths are opened.

Enhance entrepreneurial skills

In order to enhance entrepreneurial skills, education and training curricula should pay more attention to business management skills, especially commercial law, labour law, cost accounting, investment accounting and fiscal law. Those who are active in the inland navigation sector should be trained to become service-oriented and independent entrepreneurs. Additional managerial and marketing skills and investment in personnel education are needed to cope with the organisational changes that take place in the inland navigation industry. The Education & Training 2010 Work Programme of the European Commission has stressed the importance of entrepreneurship by including it in a reference framework to be developed during compulsory education and maintained and updated through lifelong learning.

3. PROMOTE JOBS AND SKILLS	
Proposed actions and measures	
Attract workforce ▪ Improve working and social conditions ▪ Stimulate labour mobility ▪ Create awareness and improve career opportunities ▪ Enhance cooperation regarding mutual recognition of qualifications **Invest in human capital** ▪ Preserve education and training institutes ▪ Stimulate life-long learning ▪ Enhance entrepreneurial skills	
Instruments	**Actors**
▪ Social dialogue within sector (working conditions, working time arrangements, definition of EU-wide professional qualification requirements etc.)	Social partners (Sectoral Dialogue Committee)
▪ Recruitment campaigns	MS/Industry
▪ Funding Handbook for IWT	EC
▪ EU support for projects in the area of education and training (e.g. the Community Education and Training Programmes or EU RTD programmes - FP 7)	EU/ Industry / education & training institutes
▪ European Social Fund (ESF)	EU/MS
▪ European IWT Reserve Fund	EU/MS/Industry
▪ Specific training programmes for IWT needs	EU/education & training institutes, Industry
▪ Common framework for education and training standards	EU/MS
▪ Harmonisation of manning requirements and boatmasters' certificates	EU

4. IMPROVE IMAGE AND CO-OPERATION

4.1. Current issues

The way inland navigation is often perceived by the general public, as well as logistics and policy decision-makers does not always correspond to reality. Although inland navigation has been operating successfully in a completely liberalised market for many years, and despite the numerous commercial, organisational and technological innovations that have taken place in the last 10 to 15 years, the sector still suffers from an image of a passive, slow and old-fashioned mode of transport. The positive developments (for instance in the container transport business) have remained almost unnoticed by the general public. Many shippers have no clear picture about the benefits inland navigation can bring to their business, whereas others view the inland navigation industry mainly as a provider of tonnage, instead of an entrepreneurial partner in the supply chain. Before a modal shift can take place a mental shift needs to be achieved.

Currently, marketing and communication efforts tend to be aimed at the inland navigation sector itself, current users and related business industries. Public relations activities are often limited to 'preaching to the converted' and are strongly characterised by ad-hoc initiatives. Moreover, many different organisations and actors play a role in communicating with logistics decision-makers, policy makers and the general public. These efforts are rarely co-ordinated and often lack a clear communication strategy. This leads to inefficient use of resources and limited effectiveness of the promotional efforts.

Several Member States have recognised the need to strengthen the profile and image of inland navigation on a structural and regular basis. In these countries promotion structures have been set up to provide up-to-date, dedicated, and commercially neutral information to industry and policy makers. These structures have been initiated by the inland navigation industry and national administrations. Funds to cover the costs for setup and exploitation of promotion agencies in the various Member States vary between 200,000 and 500,000 Euro on an annual basis. The effectiveness of an active and co-ordinated public relations policy is demonstrated by the relative and absolute growth figures of inland navigation in these countries.

The success of these promotional structures can be explained by the fact that they establish close interaction between clients, inland navigation industry and policy makers. Together with the authorities, these agencies define strategies to develop and promote inland waterway transport. By improving the information level of the general public and in particular of potential customers through dedicated information, the competitive position for inland navigation will be improved. Though being an indispensable instrument to achieve a modal shift, such promotional structures are however lacking in many European countries, even those with a large potential for inland navigation.

4.2. Proposed actions and measures

4.2.1. Promote inland navigation as a successful partner in business

Support and coordinate promotion activities

The target groups for public relations activities are relatively large and heterogeneous in terms of interests, knowledge level and requirements. Communicating with the general public might

require the use of mass media, whereas shippers could be best convinced of the benefits of inland navigation by means of small-scale seminars or face-to-face conversations. Public relations aimed at the general public should be used to create a general foundation, on the basis of which more specific actions (for instance campaigns aimed at shippers) can be built. In other words, communication needs to be multi-layered and co-ordinated, regardless of which communication channel is chosen. The same basic image dimensions should be communicated towards all target groups. The communication should be unambiguous at all levels in order to cash in on synergy effects. Differences in the communication would lead to a decrease of effectiveness and would create a credibility gap. The creation of a consistent positive image as regards inland navigation must be provided by the IWT sector in the first place, but can be supported by national and European institutions.

Influence logistics decision-making by public relations

The overriding objective of a co-ordinated communication strategy is to change the modal split in favour of inland navigation. This can be achieved by raising the active knowledge level and creating positive attitudes as regards inland navigation. Such a strategy should be based on an analysis of current knowledge levels and perceptions within the target groups. The communication strategy should include an overview of the desired image, the main communication messages (e.g. the advantages of inland navigation, low transport costs, etc.), the main target groups, and the preferred communication channels.

Based on such a communication strategy, public relations activities can be initiated to correct the image of inland navigation among logistics decision-makers, such as shippers and logistics service providers. Shaping and changing strong and persistent attitudes among these target groups (e.g. 'inland navigation can only be used for large and bulky shipments', 'inland waterway transport is only an option for companies located nearby waterways') usually requires many years of relentless promotional efforts. Using personal communication and providing dedicated information (for instance concrete cost and performance comparisons between alternative logistics chains) will make logistics decision-makers aware that inland navigation can solve some of their current distribution problems. Changing attitudes through targeted public relations therefore paves the way for modal choices in favour of inland navigation.

4.2.2. Set up and expand EU IWT promotion and development network

Set up national promotion and development structures

Promotion and development structures should be set up in Member States, candidate and associated countries that have opportunities for inland waterway transport. Their main tasks are to act as a catalyst for logistics innovation, to support inland waterway policy and to co-ordinate dissemination and exploitation activities.

One of the main functions of these agencies is to advise and encourage transport users to use inland navigation. This can be done firstly by working out (as a commercially neutral partner) transport and logistics solutions in co-operation with the inland navigation sector, ports, shipping companies, freight forwarders, and shippers. This entails identifying opportunities for inland navigation, co-ordinating project consortia, initiating technology projects, and the creation of business plans and marketing concepts. Secondly, promotion and development agencies support authorities in the definition and implementation of a national inland navigation policy. They provide technical and organisational support for authorities, are

responsible for identifying local and regional shortcomings, propose targeted actions to combat these shortcomings, and assist in national and international partnerships and lobbying activities. Thirdly, promotion and development agencies prepare and launch awareness campaigns to improve the image of and knowledge on inland navigation, support the integration of inland navigation in education and training plans, and provide easily accessible information services to different target groups.

Provide political, practical and financial support for promotion centres

The comprehensive service portfolio of national promotion and development agencies guarantees that promotion and development activities are carried out in a co-ordinated and cost-efficient way. Moreover, the activities are more likely to have a sustainable impact on the image of inland navigation, whereas presently an ad-hoc and uncoordinated approach towards public relations is often encountered. Creating awareness and a positive attitude towards inland navigation therefore not only requires a long-term communication strategy, but also solid and permanent structures to implement this strategy. The tasks and services of promotion and development agencies need to be provided on a continuous basis. To this end, the political, practical and financial support from administrations and the inland navigation sector is indispensable. Instruments such as support programmes for national promotion and development organisations should be created.

Appoint national focal points within administrations

All Member States, as well as associated and candidate countries with inland waterways of international importance should appoint a national focal point within their administration. These are government officials with the specific responsibility of promoting and developing inland navigation in their respective countries. Just like the focal points for short sea shipping, these inland navigation focal points co-operate with the national promotion and development agencies, promote inland navigation at the national level and create contact points for the Commission. They represent and co-ordinate activities in the field of the promotion of inland navigation and exchange views on a regular basis and experiences with their international counterparts.

Integrate national promotion structures and focal points into a European network

Inland navigation is an international business industry by nature (75% of the transport performance in European inland navigation is formed by international trade). It is therefore evident that the promotion of inland waterway transport should be co-ordinated at the European level. Such a network could act as a promotion and innovation platform which bundles the national promotion structures and focal points at the European level. This network of contacts is needed to discuss ideas, exchange information on best practices and find ways to promote inland navigation. This exchange of information results in a co-ordinated communication strategy, better utilisation of available resources, and the elimination of redundancies. Networking at the European level will act as a multiplier and will raise the effectiveness of combined public relations activities.

4.2.3. Monitor trends and developments within the IWT market

Harmonise collection of data at all levels

The availability of reliable, up-to-date and comparable data is vitally important to any decision-maker. Numerous statistical sources (e.g. national statistics, EUROSTAT, Central Commission for the Navigation on Rhine, Danube Commission) already offer detailed data on fleet, transport performance, cost levels, transhipment capacity, accidents, employment, etc. The quality of data and the level of detail are however not harmonised, which complicates international comparisons or hampers time series analyses to explore long-term trends. For instance, large discrepancies appear between fleet registers from different sources. Collection procedures therefore need to be improved and harmonised at all levels. An updated European regulation on statistics of goods transport by inland waterways, which is currently examined by the European Parliament and the Council, can contribute to this objective.

Ensure availability of compatible source data

Many statistical sources do not provide data that are detailed enough to allow meaningful monitoring of trends. Some examples include:

- Reliable and harmonised origin-destination data regarding international intermodal transport are lacking;
- Many national and international fleet registers are not harmonised or fail to record data on the operating area of the vessel, extent and year of last modification, etc;
- Statistical information on transhipment facilities in public and private ports is not collected systematically and regularly;
- Inter-modal transports cannot be distinguished from traditional inland navigation, since this information is generally not recorded in a statistical format;
- Information on transport prices only shows price trends on the spot market, and only for Western Europe;
- Information on accidents is only made available on a highly aggregated level, though detailed data are recorded for instance in accident reports of the waterway police;
- Employment data are neither complete nor harmonised between countries and often do not include data on the skills and education level of employees.

Efforts should be aimed at integrating the various existing information sources. Databases should be created or updated and properly maintained. Sufficient funding for these data gathering and processing activities should be made available. This implies establishing European-wide harmonised definitions and data collection procedures in the Member States, associated and candidate countries.

In addition to the need for detailed statistical data, regular provision of information about the market developments is equally important. Such a market observation system, which should include economic and social parameters, can become an important tool for policy decisions at

the European and national level as well as for operational decision-making by commercial parties. It would also represent a helpful tool for monitoring the fleet capacity and thus provide a basis for appropriate actions in the event of market disturbances. Currently, the Central Commission for Navigation on the Rhine (CCNR), the European Commission and the professional organisations are developing a system for a European Market observation. The system will include a comprehensive view of the market in terms of volumes transported, services provided in the various sectors of the market, fleet capacity and fluctuations in prices and costs, as well as demand forecasts. The concept will have to be re-assessed in due time and should be adapted in 2007 in the light of the experiences gained by then.

4. IMPROVE IMAGE AND CO-OPERATION	
Proposed actions and measures	
Promote inland navigation as a successful partner in business ▪ Support and coordinate promotion activities ▪ Influence logistics decision-making by public relations **Set up and expand EU IWT promotion and development network** ▪ Set up national promotion and development structures ▪ Provide political, practical and financial support for promotion centres ▪ Appoint national focal points within administrations ▪ Integrate national promotion structures and focal points into a European network **Monitor trends and developments within the IWT market** ▪ Harmonise collection of data at all levels ▪ Ensure availability of compatible source data	
Instruments	**Actors**
▪ Support programmes for national promotion and development organisations and their network	EU/MS
▪ Regulation on statistics of goods transport by inland waterways	EU
▪ IWT Market observation	EC

5. PROVIDE ADEQUATE INFRASTRUCTURE

5.1. Current issues

Europe's *waterway network* consists of approximately 37,000 kilometres of waterways. The core network with rivers and canals of international importance (Class IV and higher) is formed by more than 12,000 kilometres of interconnected waterways, 444 locks and several hundreds of inland ports and transhipment sites. The remaining network is made up by smaller waterways. Even though its density is clearly lower than the road and rail network, the

inland navigation network connects most European economic centres. The larger part of this network has ample free capacities. For instance, 7 to 10% of the Danube's maximum capacity is actually used. Europe's waterway network therefore contains massive capacity reserves, which are already available or can be activated with relatively limited financial investments.

Despite the available capacities, several bottlenecks reduce the competitiveness of inland waterway transport and consequently hinder the full utilisation of the waterway network. These bottlenecks can include limited width and depth dimensions of rivers and canals, lacking mooring facilities, limited capacity of locks, height under bridges, and terminal capacity. The strong water level fluctuations on the Upper Danube for example complicate travel and draught planning, resulting in an average vessel utilisation rate of 60%, whereas this figure amounts to approximately 85% on the lower Rhine, a waterway with almost optimal fairway conditions. Every failing decimetre on the Danube waterway represents a loss of loading capacity of 70 to 100 tonnes per vessel. The reduced vessel utilisation rate leads to fluctuating transport volumes and variable price levels.

In the last decades, insufficient financial means have been reserved for elimination of bottlenecks, maintenance and upgrading of waterways, bridges and locks. Infrastructure budgets reserved for inland waterway transport are modest compared to other modes and inland navigation's modal share: from 1994 to 2004, 1.5% of the TEN-T budget was allocated to inland waterways, whereas the modal share of inland navigation amounted to about 7% in the EU15. This also reflects the low level of investments on the national scale. Smaller waterways (classes I – III) are more and more neglected and loose in importance, although they can serve for feeder services from and to the ports ("hubs"). This trend, however, will continue unless additional policy initiatives are developed. The lack of sufficient infrastructure investments leads to a reduction of preventative maintenance, unexpected draught restrictions, temporary closure of locks, etc. This ultimately results in unreliable transport services, reduced safety and higher transport costs.

At the same time, opposition against inland waterway projects is increasing. Construction works on inland waterways are often contested in environmental terms. An open and rational dialogue on project basis is therefore needed.

As part of the European transport network, the *ports* along European waterway network are also of vital importance. Ports effectively enable the integration of the various modes of transportation and offer value-added logistics services. Only the 389 Dutch inland ports handle 380 million tons on an annual basis, employ 66,400 persons and generate a direct value added of 5.7 billion Euros. The competitiveness of intermodal supply chains often fully depends on the efficiency of port operations, since the costs for transhipment, pre- and end-haulage typically add up to more than 50% of the door-to-door transport costs.

On a local level, several inland ports are confronted with a lack of spare capacity. This results in longer waiting times at terminals, which in turn leads to a reduced operational efficiency of inland vessels and crews. About 70% of the Dutch inland ports have reported that they do not dispose of sufficient expansion space. Expansion of port activities is complicated by the spatial claims of other functions, e.g. residential areas, recreation, nature, etc. On the other hand, numerous inland ports exist that are faced with unused capacities, resulting in the need for either higher charges per cargo unit or increased public financial support. Both the problem of limited expansion opportunities and the problem of overcapacity could lead to a deterioration of the competitive position of inland ports and the commercial viability of intermodal transport services.

The integration of inland navigation into intermodal transport chains not only depends on the physical infrastructure; supply chain integration also needs to be supported by increased information exchange. River Information Services (RIS) play an important role in this respect. Through the seamless exchange of relevant logistics information by RIS, the efficiency and safety of supply chains can be improved. Resources can be better utilised and errors can be avoided. These benefits have been confirmed by thorough tests of a number of European RIS applications. The current implementation level of RIS in the Member States and candidate countries is diverse. The interoperability of the applications demands further attention, though various standards have meanwhile been developed and adopted – e.g. by PIANC and the CCNR. The challenge facing the inland waterway transport sector lies in integrating the various services and systems into a single common operational concept. The political foundations for this co-ordinated approach have been reflected by the European White Paper on Transport, the revised TEN-T Guidelines and last but not least by the RIS Directive. In addition, the master plan IRIS, which is financially supported by the European Union, will create a framework for the co-ordinated implementation of RIS in Europe.

5.2. Proposed actions and measures

5.2.1. Improve multi-modal network

Maintain and improve the European IWT network

The improvement of the European inland waterway network primarily remains a national matter, but should be supported and guided at the European level. Therefore, the Commission proposes to establish a European Development Plan for the improvement and maintenance of waterway infrastructure and transhipment facilities. This plan would go beyond the existing TEN-T priority projects, include also other projects of 'common interest' and would take account of the smaller waterway networks. It should be developed in accordance with initiatives of the UNECE in this field. The development plan supports the creation of a coherent European inland waterway network in the long-term by providing Member States guidance with regard to:

- Definition of standards for waterway width and depth, bridge clearance, lock dimensions and average structural waiting times at terminals and locks;
- Prioritisation of required investments in both main transport axes and small waterways from a European network perspective;
- Elimination of missing links, strategic bottlenecks and crucial maintenance backlogs;
- Incorporation of environmental requirements and coordination with river basins management plans that are required by the Water Framework Directive;
- Regular examination of the condition and status of Europe's waterway network and port infrastructure.

The Commission proposes to raise the European Union's contribution to TEN-T priority projects to 30%, in order to further encourage Member States to finance projects of a European dimension. The allocation of a significant part (i.e. at least 10%) of the TEN-T budget to waterway infrastructure projects including modernisation measures should be

considered. The appointment of a dedicated European *Co-ordinator* would further help to support the implementation of the strategic development plan and the TEN-T priority projects.

At present, the inland navigation industry does not pay to make use of most international waterways. Dues are only paid for usage of certain canals (e.g. the Main-Danube-Channel). Given that more financial means are needed for maintenance and utilisation measures, it is questionable whether this situation can be maintained. The European Commission intends to develop a framework for *infrastructure charging* for all modes. In the case of inland navigation, such a framework should however be accompanied with significant quality impulses for the entire waterway network and should not raise new barriers for the utilisation of already underdeveloped waterways.

Foster the mutual understanding of multi-purpose use of waterways

The need for improvements of waterway and port infrastructure for the benefit of inland navigation cannot be regarded in isolation. An integral infrastructure planning approach is required, which respects both economic and ecological interests. Investments in transport infrastructure must be carried out in the framework of existing law, spatial planning and environmental policies. An interdisciplinary dialogue at the project level and a generally accepted assessment framework can achieve the integration of all relevant aspects best. Such a planning process will allow transparent and objective reporting and balancing of the different policy objectives. This way, the mutual understanding of multi-purpose use of waterways can be fostered effectively.

Encourage the development of port and transhipment facilities

A co-ordinated development and investment strategy is required to develop and determine required port functions, capacity, and catchment areas. Investments in port facilities should primarily be the result of regional initiatives and co-operation between port owners, operators and users. Nevertheless, improved co-ordination is necessary to avoid parallel and double investments as well as a further disintegration of freight flows. The creation of a network of inland terminals, especially in new Member States and candidate countries, is necessary to cope with imbalances and fluctuations in transport demand and to guarantee sufficient capacity utilisation for each individual port. A level playing field in the competition between public and private ports and terminals should be ensured.

There is a clear interest and market need to better exploit the complementarities between inland navigation and rail. In order to promote the integration of inland navigation into intermodal logistics chains, tri-modal logistics interfaces need to be promoted, also in candidate and associated countries. At this moment only few examples exist of inland ports that tranship containers from barge to rail (e.g. Duisburg and Basel). Especially in the new Member States and candidate countries, lacking intermodal transhipment supra- and infrastructure effectively hinders the establishment of intermodal transport services by inland navigation. Linking up with market initiatives, the European Development Plan should be used to prioritise port projects, whereas national funding schemes and European support programmes such as PHARE, ISPA, CARDS, and INTERREG should provide financial support. This can refer to investments in new or refurbished transhipment equipment.

Additionally, existing and future RTD programmes should continuously encourage research into new transhipment technologies and concepts that limit transhipment time and costs. Major innovations in this field could make hub-and-spoke networks more feasible in the

future and could as such optimise existing barge equipment and terminal network configurations. Another field of research and development action is information technology: terminal operation systems can improve the productivity of port cranes, vehicles and stacking areas.

(Re)develop industrial sites nearby waterways

The spatial planning and economic policies at the federal, regional and local levels are to take into account the advantages of concentrating industries in the immediate vicinity of ports and transhipment sites when planning the location of new industrial sites. Moreover, spatial planning should give higher priority to re-developing existing industrial zones nearby waterways. Such a spatial policy can significantly reduce or even eliminate pre- or end-haulage costs for shipments originating from or arriving at these locations. A spatial policy aimed at developing industrial sites nearby inland ports and transhipment sites therefore represents an effective and enduring contribution towards modal shift policy.

National support should be provided to companies that intend to make use of inland navigation, but are hindered in doing so because of the lack of suitable waterway access facilities (loading and unloading quays). Support measures should be market-oriented, in the sense that applicants should provide binding transport quantity guarantees. In addition, invest barriers should also be lowered for redevelopment of fallow land, especially for ports that have emerged from old industrial settlements and that are particularly confronted with problems such as residual pollution.

5.2.2. Implement River Information Services

Support and co-ordinate development and implementation of RIS in Europe

River Information Services constitute a major contribution to the rationalisation and enhancement of the appeal of inland navigation. Through effective information exchange, transport operations (e.g. trip scheduling, terminal/lock operation plans, cross-border operations) can be optimised. In addition to the benefits of RIS for commercial logistics actors, RIS have proven to be invaluable for waterway authorities, supporting them in traffic management tasks, accident analysis, dangerous goods monitoring, etc.

RIS need to be implemented in Europe according to the requirements of the RIS Directive. Based on the requirements of the RIS Directive, the master plan IRIS provides an implementation strategy until 2010. The RIS Directive, the master plan IRIS and further projects funded under TEN-T MIP should provide an impetus for the harmonised implementation of RIS in Europe.

5. PROVIDE ADEQUATE INFRASTRUCTURE	
Proposed actions and measures	
Improve multi-modal network ▪ Maintain and improve the European IWT network ▪ Foster the mutual understanding of multi-purpose use of waterways ▪ Encourage the development of port and transhipment facilities – also in candidate and associated countries ▪ (Re)develop industrial sites nearby waterways **Implement River Information Services** ▪ Support and co-ordinate development and implementation of RIS in Europe	
Instruments	**Actors**
▪ European Development Plan for improvement and maintenance of waterway infrastructures and transhipment facilities	EU/MS
▪ European Coordinator	EC
▪ TEN-T funding for Priority projects N° 18 and N° 30, other projects of common interest, port and terminal development	EU/MS
▪ RIS Directive and projects (TEN-T MIP)	EU/MS
▪ EU RTD and support programmes (FP 7, PHARE, ISPA, CARDS, INTERREG)	EU
▪ National funding schemes	MS
▪ Framework for infrastructure charging	EU
▪ Spatial planning giving higher priority to (re-)developing industrial zones nearby waterways	MS
▪ Interdisciplinary dialogue on planning and project level	EC/MS

PART III: MODERNISING THE ORGANISATIONAL FRAMEWORK FOR INLAND WATERWAY TRANSPORT IN EUROPE

A. ANALYSIS OF OPTIONS UNDER DISCUSSION

With the accession of several Danube riparian countries to the European Union, the discussion about an appropriate institutional framework for Inland Waterway Transport in Europe has gained momentum. All parties agree that the institutional framework for IWT needs to be improved. The Commission believes that a concentration of available skills and resources is needed to bolster IWT, and that the proposed Action Programme also provides an opportunity to finally turn words into action.

1. CURRENT SITUATION AND CHALLENGES

Inland waterway transport in the European Union is currently administered under different regimes, namely the Mannheim and Belgrade Conventions for navigation on Rhine and Danube, relevant legislation of the Community and of Member States.

Despite a well-established cooperation between the different actors, the current institutional framework shows the following characteristics:

- A patchwork of resources and efforts: different organisations have different territorial scopes but their regulatory activities largely overlap;
- This leads to an overall reduced effectiveness due to system-inherent frictions and duplication of work at five different levels (EC/EU, CCNR, DC, UN/ECE, ECMT);
- Its strategic policy management is insufficient, because apart from the EU, none of the organisations has the competence nor the means to legitimately act in that area;
- As a consequence, IWT has a comparably low impact at political level;
- Its legitimacy is fragmented, given that only the Community can adopt binding rules for the entire Community network, the Danube Commission cannot adopt binding decisions, and the CCNR can only set rules for the Rhine.

The proposed Action Programme foresees actions as diverse as regulatory harmonisation, strategic promotion, and specific support and coordination measures. It can only develop its full potential if it is implemented in a coherent way. However, if the current framework remains unchanged, no organisation will be in a position to take on the challenges ahead.

2. REQUIREMENTS OF A FUTURE FRAMEWORK

All interested parties seem to agree on the essential criteria for added value which any future framework should meet:

- Enable IWT to make full use of its potential by allowing it to come out of its niche existence and add a higher political visibility to the sector;

- Allow a real shift from a rather regulatory policy approach and the setting of technical standards to a strategic IWT policy involving intermodality, logistics, promotion and coordination activities;

– Enjoy full legitimacy by establishing common rules at the appropriate level, while bringing forward regulatory harmonisation in a pan-European perspective (by involving interested third countries);

– Respect current standards regarding the high level of safety of navigation, achieved on the basis of the work of the Central Commission for Navigation on the Rhine;

– Apply working methods which have proven their value, e.g. through the involvement of experts at an early stage of the legislative process, close contacts with those implementing the legislation into practice, and efficient control mechanisms;

– Operate in close cooperation with the inland navigation industry, Member State administrations and other stakeholders;

– Be efficient and cost-effective.

3. POSSIBLE SOLUTIONS

The following options are currently under discussion:

(1) **Increased cooperation between the international river commissions and the European Commission**, sustained by "Memoranda of Understanding":

– This would not require any institutional changes but maintain the existing framework and working methods. In fact, such cooperation already takes place regarding technical requirements for vessels.

– In order to achieve the mutual recognition of standards, it would however require increased coordination between the works of these organisations. For example, legislative instruments of at least three different organisations would have to be closely coordinated in order to avoid unfair competition. Given that such a legislative harmonisation could not be legally enforced, the risk of different sets of rules for different geographical areas within the single market would remain.

(2) **Adhesion of the European Community to the Rhine and the Danube Commissions**[4]:

– The Commission has proposed to the Council already in 2003 to authorise the Commission to open and conduct negotiations on the European Community's membership of the CCNR and of the Danube Commission.

– Such an accession would more truly reflect the fact that the Community already today has exclusive competence in a number of areas.

– Legislative harmonisation would be achieved because decisions of the River Commissions could be based upon / harmonised with Community legislation.

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[4] Recommendation from the Commission to the Council in order to authorise the Commission to open and conduct negotiations on the conditions and arrangements for the European Community's membership of the CCNR and of the Danube Commission - SEC(2003) 897 restricted EU.

– A political agreement on this approach has not yet been reached.

(3) The creation of an intergovernmental **Pan-European Inland Navigation Organisation**:

– Such an organisation could involve all European countries and organisations interested in IWT in one single coordinating body.

– Based on an international convention, the negotiation of which would most probably take a very long time and which would have to be signed and ratified by all parties concerned, this structure would exist outside the Community legislative framework and decision-making mechanisms.

– A dedicated institution could increase the political attention for IWT and be in charge of its strategic promotion.

– While it could generally contribute to legislative harmonisation, it is yet unclear how decisions of such an international organisation could be legally enforced.

– This option would add an additional administrative layer, while still requiring multiple expert meetings and laborious coordination mechanisms.

– As an intergovernmental organisation, it would be financed through contributions of the contracting parties.

(4) A **Community Framework for the promotion of Inland Waterway Transport:**

– Among the current actors, the Community is the only one empowered to adopt a single set of rules encompassing the whole territory of the Union. On that basis, it is in a position to develop a strategic and comprehensive IWT policy for the single market.

– In order to ensure the implementation of harmonised rules on the larger European waterway network, agreements with third countries interested in IWT could be concluded. Such agreements could also address the issue of market access.

– Policy making and legislation can make use of the available knowledge and expertise of the international river commissions, as well as of working parties involving experts from the relevant national authorities, including from third countries, from the profession and industries and from the European social partners.

– This option does not add an additional administrative layer. It avoids the bureaucratic labours of coordination and duplication of work.

There is a clear interest for a strong actor for a strategic IWT policy at EU level. In 2007/08, the EU's waterways will stretch from Rotterdam to Constanţa. Two-thirds (17/27) of Member States will have inland waterways, of which 12 will be interconnected by the Community's waterway network. Member States without inland waterways can also profit from inland waterway connections and will equally have an interest in the development of this transport mode. In addition, the Community structure offers the advantage of being able to embed Inland Waterway Transport in the context of a more strategic transport policy. By involving

the European Parliament, it guarantees decisions which are democratically accountable and thus closer to the citizens.

The creation of a dedicated Community structure would not require a change in the Mannheim and Belgrade Conventions. The International river commissions would continue to play their role in matters which are relevant and specific for their River, and which do not require harmonisation at European level, e.g. police and traffic regulations, particular requirements based on local knowledge ("Streckenkenntnisse"), etc. Their proven experience and expertise could thus be built upon.

The following table aims at giving a schematic overview of the options discussed above and their potential added value.

Modernising the organisational structure for Inland Waterway Transport in Europe

Schematic overview of the options currently under discussion

Option	**Political attention**	**Legal harmonisation**	**Comprehensive policy**	**Market integration**	**Efficiency**	**Costs**
1. Increased cooperation between the international river commissions and the European Commission, "Memoranda of Understanding"	-	+/-	-	-	-	neutral
2. Adhesion of the European Community to the Central Commission for Navigation on the Rhine and the Danube Commission	+	+	-	+	-	neutral
3. Pan-European Inland Navigation Organisation	+	+/-	+/-	+	-	equal to 4), contribution by participating State parties
4. Community Structure for the promotion of Inland Waterway Transport	+	+	+	+	+	equal to 3), financed from the EU budget

B. KEY CONSIDERATIONS FOR MODERNISATION

Irrespective of the option chosen, the modernisation of the organisational structure should deliver the following .

The mission of such a structure, which could be developed gradually, could include the following:

(1) Play an active policy role in **promoting** Inland Waterway Transport, e.g.

- encourage initiatives and organise/coordinate joint activities, e.g. to promote the result of research projects or best practice in entering new markets;
- carry out analyses and studies in different areas, e.g. identify bottlenecks in the infrastructure or of an administrative kind;
- be a focal point for environmental issues related to inland navigation;
- represent IWT interests in planning processes (infrastructure, environmental, spatial planning);
- elaborate a European development plan for inland waterway infrastructure, focusing on most urgent needs and integrating environmental aspects from its inception.

(2) Contribute to the development of **legislation**, e.g. on:

- technical requirements for vessels;
- boatmaster certificates and other professional qualifications;
- technical specifications for RIS;
- the transport of dangerous goods;
- matters of security;
- manning requirements;
- education and training;
- emissions, fuel, waste disposal;
- statistics;
- infrastructure charging.

(3) Allocate a number of **specific tasks**, e.g.

- monitor the legislative “acquis”, in particular technical standards;
- supervise and coordinate their implementation and certification in cooperation with inspection bodies;

– monitor the work of notified bodies;

– contribute to the work of the Sectoral Dialogue Committee in matters of working and social conditions;

– carry out a continuous market observation;

– manage databases, oversee the registration of vessels and certificates.

(4) Achieve the **adequate participation** of all actors concerned by:

– assembling the technical expertise and knowledge in the area of IWT;

– taking on working methods which have proved their value, involving Member States' expertise from the start;

– ensuring the participation of third countries.

PART IV: INLAND WATERWAY TRANSPORT IN FIGURES

1. FLEET

Self-propelled dry cargo ships

	Country	N° of units	Total capacity (tdw)	Average capacity (tdw)	Average age (years)
1	Austria	28	33194	1186	25
2	Belgium	1158	971571	839	44
3	Bulgaria	22	22620	1028	27
4	Czech Republic	67	60960	910	30
5	Finland	13	2954	227	44
6	France	1126	520353	462	45
7	Germany	1028	1198527	1166	50
8	Hungary	10	6216	622	n.a.
9	Italy	1	1200	1200	35
10	Luxembourg	26	26803	1031	48
11	Netherlands	3404	3278465	963	47
12	Poland	105	49000	467	n.a.
13	Portugal				
14	Romania	32	18082	565	22
15	Slovakia	12	18142	1512	32
16	Sweden				
17	United Kingdom	118	29858	253	n.a.
18	Switzerland	18	33052	1836	21
	TOTAL EU + CH	***7168***	***6270997***	***874,86****	***37,49****

Dry cargo barges

	Country	N° of units	Total capacity (tdw)	Average capacity (tdw)	Average age (years)
1	Austria	96	163234	1700	19
2	Belgium	146	359903	2465	23
3	Bulgaria	99	165769	1674	19
4	Czech Republic				n.a.
5	Finland	2	1812	906	13
6	France	611	593838	972	36
7	Germany	987	891738	903	22
8	Hungary	0	0	0	-
9	Italy	12	12000	1000	25
10	Luxembourg	2	5660	2830	25
11	Netherlands	751	1292402	1721	25
12	Poland	384	204000	531	n.a.
13	Portugal				
14	Romania	735	1333514	1814	17
15	Slovakia	0	0	0	-
16	Sweden				
17	United Kingdom	0			
18	Switzerland	0	0	0	-
	TOTAL EU + CH	***3825***	***5023870***	***1313,43****	***21,64****

Source: PINE, Prospects of Inland Navigation within the Enlarged Europe, March 2004.

Self-propelled tanker ships

	Country	N° of units	Total capacity (tdw)	Average capacity (tdw)	Average age (years)
1	Austria	4	4036	1009	43
2	Belgium	205	242263	1182	37
3	Bulgaria	0	0	-	-
4	Czech Republic				
5	Finland	0			
6	France	70	51414	734	42
7	Germany	305	446262	1463	30
8	Hungary	5	6091	1218	n.a.
9	Italy	1	1000	1000	35
10	Luxembourg	27	47103	1745	26
11	Netherlands	719	721217	1003	32
12	Poland	0			
13	Portugal				
14	Romania	5	1723	345	11
15	Slovakia	0	0	-	-
16	Sweden				
17	United Kingdom	55	42846	779	
18	Switzerland	45	102604	2280	20
	TOTAL EU + CH	***1441***	***1666559***	***1156,53****	***30,95****

Tank barges

	Country	N° of units	Total capacity (tdw)	Average capacity (tdw)	Average age (years)
1	Austria	n.a.			
2	Belgium	8	9144	1143	38
3	Bulgaria	n.a.			
4	Czech Republic	0			
5	Finland	0			
6	France	64	90823	1419	34
7	Germany	41	55352	1350	24
8	Hungary	n.a.			
9	Italy	20	25000	1250	15
10	Luxembourg	2	8444	4222	20
11	Netherlands	49	80666	1646	25
12	Poland	0			
13	Portugal				
14	Romania	n.a.			
15	Slovakia	n.a.			
16	Sweden				
17	United Kingdom	0			
18	Switzerland	0	0	0	-
	TOTAL EU + CH	***184***	***269429***	***1464,29****	***27,33****

** pondered*

Source: PINE, Prospects of Inland Navigation within the Enlarged Europe, March 2004.

2. INLAND WATERWAY TRANSPORT ENTERPRISES

	2002			
	Country	Number of enterprises	Turnover million €	Number of persons employed
1	Belgium*	235	163,1	735
2	Czech Republic			
3	Germany	1257	1690,7	11223
4	France	1176	476,7	
5	Italy	711	211,9	2959
6	Luxembourg	103	42,7	1212
7	Hungary	105	66,1	1920
8	Netherlands	3510	1374	9207
9	Austria	59	83	330
10	Poland			
11	Portugal	26	23,4	838
12	Slovenia	20	0,4	26
13	Slovakia			
14	Finland	85	21,6	252
15	Sweden	393	69,5	1021
16	United Kingdom	217	165,5	1921
	EU 25	**7662**	**4225,5**	**30909**
17	Bulgaria	12		
18	Romania	102	77,8	4123

* 2001

Source: Eurostat (economic activity according to NACE Rev. 1 classification)

3. INLAND WATERWAYS

	2001	
	Country	Length in use* km
1	Belgium	1527
2	Czech Republic	664
3	Germany	6754
4	France	5378
5	Italy	1477
6	Luxembourg	37
7	Hungary	1884
8	Netherlands	5046
9	Austria	351
10	Poland	3812
11	Portugal	124
12	Slovakia	172
13	Finland	6245
14	Sweden	390
15	United Kingdom	1153
	EU 25	**35014**
16	Bulgaria	470
17	Romania	1779

* navigable canals, rivers and lakes regularly used for transport

Source: European Commission, Energy & Transport in Figures 2004

4. PERFORMANCE IN TONNE-KILOMETERS (TKM)

1000 mio tkm

	Country	2000	2001	2002	2003	2004
1	Belgium	7,2	7,7	8,1	8,2	8,5
2	Czech Republic	0,8	0,7	0,6	0,5	0,4
3	Germany	66,5	64,8	64,2	58,2	63,7
4	France	9,1	8,3	8,3	8,0	7,3
5	Italy	0,2	0,1	0,1	0,1	0,1
6	Luxembourg	0,4	0,4	0,4	0,3	0,4
7	Hungary	0,9	1,3	1,7	1,5	1,9
8	Netherlands	41,3	41,8	43,6	38,1	38,0
9	Austria	2,4	2,6	2,8	2,3	1,7
10	Poland	1,2	1,3	1,1	0,9	1,1
11	Slovakia	1,4	1,0	0,6	0,5	0,7
12	Finland	0,4	0,4	0,4	0,4	0,1
13	United Kingdom	0,2	0,2	0,2	0,2	*0,2*
	EU25	**131,9**	**130,4**	**132,0**	**119,1**	**124,1**

Source: European Commission, Energy & Transport in Figures 2005

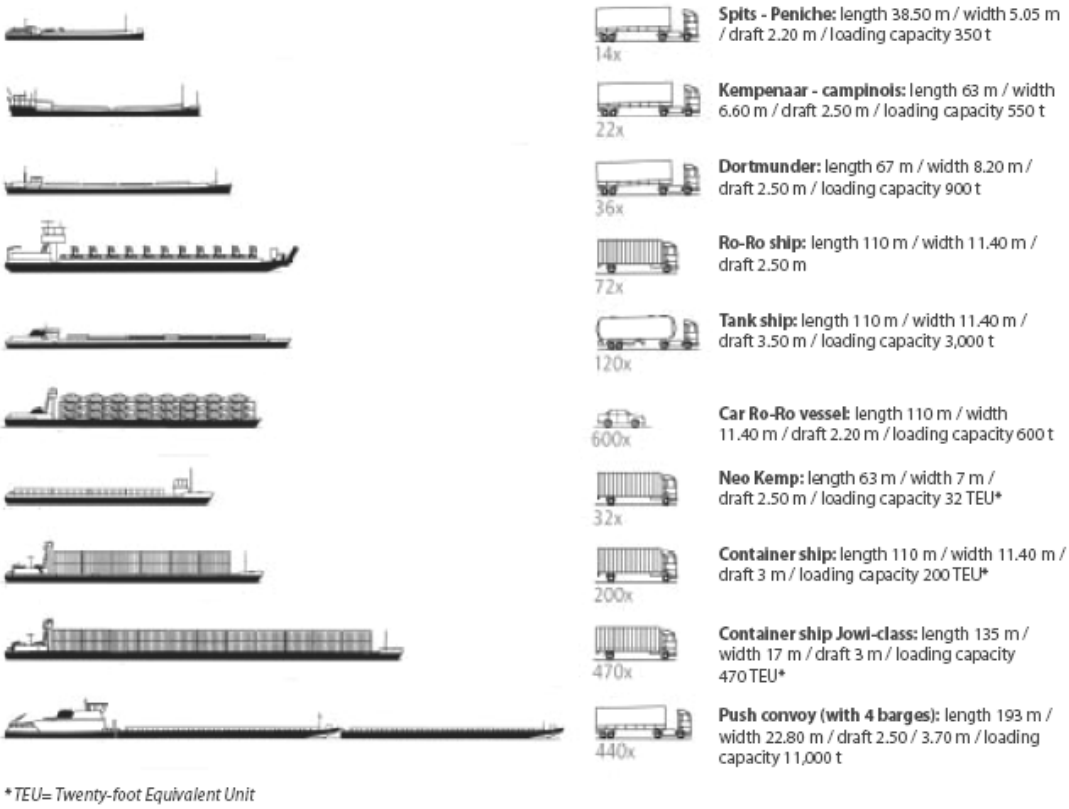
5. MODAL SPLIT

		2002
	Country	**Modal split by country* tonne-kilometres in %**
1	Belgium	14,3
2	Czech Republic	0,9
3	Germany	12,8
4	France	2,3
5	Italy	0,1
6	Luxembourg	7,5
7	Hungary	5,8
8	Netherlands	44,2
9	Austria	4,9
10	Poland	0,8
11	Portugal	-
12	Slovakia	2,8
13	Finland	0,8
14	Sweden	-
15	United Kingdom	0,1
16	**EU 25**	**6,00**
17	Bulgaria	-
18	Romania	-

*4 land modes (Road, Rail, IWT, Pipeline): not including transport by sea

Source: European Commission, Energy & Transport in Figures 2004

6. VESSEL PERFORMANCE



** TEU= Twenty-foot Equivalent Unit*

Source: INE