
Joint Statement on Guiding Principles for the Development of Inland Navigation and Environmental Protection in the Danube River Basin

1 Introduction

This Joint Statement aims to provide guidance to decision makers dealing with inland waterway transport (IWT) and environmental sustainability as well as to water managers preparing relevant riverine environmental and navigation plans, programmes and projects.

The process to develop the Joint Statement has been initiated by the International Commission for the Protection of the Danube River (ICPDR), Danube Commission (DC) and the International Sava River Basin Commission (SRBC)¹.

This Joint Statement was developed in 2007 through a process of intensive, cross-sectoral consensus building between stakeholders with responsibility and interest in navigation, river ecological integrity and water management in the Danube river basin. The process included three stakeholder and expert workshops in April, June and October 2007². During this process the participating stakeholders generated a common understanding on the protection of the riverine environment and the necessary processes and conditions for conducting and developing sustainable inland navigation³ (including the maintenance of existing infrastructure and the development of new navigation projects).

The transboundary context is important when dealing with hydromorphological alterations, environmental and navigation needs in the Danube river basin. This Joint Statement aims to support sustainable and environmentally friendly development and improvement of navigation. It addresses, first of all, structural interventions and measures on rivers serving IWT; non-structural measures will also have to be undertaken to successfully upgrade and sustain IWT economically.

The stakeholders involved in developing this Joint Statement underline that the full respect of the existing legal framework, including all relevant transport and environment legislation (national legislation, EU directives and international requirements), is a pre-condition for any activity in the Danube region.

¹ For further information please visit the respective websites: www.icpdr.org, www.danubecom-intern.org, www.savacommission.org

² For further information see http://www.icpdr.org/icpdr-pages/navigation_and_ecology_process.htm

³ 'Sustainable inland navigation' considers and integrates all three components: environment, economics and social issues.

The planning principles and criteria of this Joint Statement have been developed and agreed upon in the context of the situation for the Danube river basin but could also be used worldwide as a reference for other large river systems comparable to the Danube.

2 Background

2.1 The legal situation

The legal framework for navigation and environment issues in the Danube river basin includes international conventions between countries as well as relevant EU law, policies and action plans.

The work of the International Commission for the Protection of the Danube River (ICPDR) is based on the *Danube River Protection Convention*⁴ as the major legal instrument for cooperation and transboundary water management in the Danube river basin. The ICPDR is a transnational body, promoting policy agreements and setting joint priorities and strategies for improving the state of the Danube and its tributaries.

For the Danube River, the *Convention regarding the Regime of Navigation on the Danube* (Belgrade Convention)⁵ forms the framework for governing navigation between 11 Member States. The Convention, which is coordinated by the Danube Commission, aims to strengthen economic relations in the region and addresses the need for maintaining the entire Danube navigable.

On the sub-regional scale, a *Framework Agreement* has been signed by the Sava river basin countries⁶ to develop navigation and establish sustainable water management. These activities are coordinated through the International Sava River Basin Commission.

In addition several EU policies build the legal framework for water and river basin management in Europe, with the EU Water Framework Directive 2000/60/EC (EU WFD) as most significant regarding the protection of surface waters and groundwater. This includes a requirement for the development of the first river basin management plan for the entire Danube river basin by 2009. By 2015 the main environmental objectives of the Directive have to be achieved by the implementation of the programmes of measures, which inter alia address hydromorphological alterations caused by navigation.

For international river basin districts the EU WFD requires the coordination of international river basin management plans involving also non-EU Member States if possible⁷. In the Danube River basin District the ICPDR is the platform for the coordination of the implementation of the EU WFD on the basin wide scale between 13 Danube countries (see the Danube Declaration⁸).

⁴ Convention on the Cooperation for the Protection and Sustainable Use of the Danube River (Danube Protection Convention), Sofia, 1994

⁵ Convention regarding the Regime of Navigation on the Danube, Belgrade, 1948

⁶ Framework Agreement on the Sava River Basin (FASRB), Kranjska Gora, 2002

⁷ EU WFD Articles 3.4 and 3.5.

⁸ The Danube Basin – Rivers in the Heart of Europe, Vienna, 2004

Many other environmental directives, policies and conventions interface with the EU WFD and need to be considered for comprehensive policy integration related to IWT development⁹, including the EU Habitats and Birds Directives (Natura 2000 ecological network) and the Bern Convention (Emerald network).

The *European Action Programme for the Promotion of Inland Waterway Transport* NAIADES sets an important frame for actions. These include a better integration of IWT in the logistic chain, improving the environmental performance of the fleet and using modern information and communication technologies (e.g. for River Information Services) to improve navigation. An essential element of the NAIADES Action Programme is developing adequate waterway infrastructure. Projects aiming at the improvement of the waterway and transshipment can therefore be co-funded from the EU budget. The Danube is part of a priority project (No. 18) under the Trans-European Transport (TEN-T) guidelines and represents the central transport axis.

At a wider scale the *European Agreement on Main Inland Waterways of International Importance (AGN)*¹⁰ lays down guidelines for the navigability characteristics of inland waterways carrying international traffic. This international agreement has entered into force in a number of Danube countries.

The implementation and integration of all relevant policies is crucial for an appropriate development of IWT and the achievement of the environmental objectives in the Danube river basin. This is the only way in which conditions for IWT and the environment can be improved and protected.

2.2 The current situation of navigation in the Danube river basin

Current economic situation

The political and economic changes taking place in East- and South-Eastern Europe in the last 15 years have created a dynamic emerging economy in the region and generated needs and perspectives for more trade and transport along the Danube. The Danube area is one of the most important economic and cultural regions in Europe with the Danube itself as a central lifeline and transport axis.

The enlargement of the EU has led to an enormous increase and strengthening of economic ties in the Danube Corridor and beyond. Intensification of trade has gone hand in hand with a rapid rise in the amount of traffic. Commercial transport along the Danube corridor has soared growing more than 100% in nearly all Danube countries in the last decade, with by far the largest increase registered in road transit. It is expected that the Danube countries will continue this dynamic economic development in the coming years (with minimum average GDP/capita growth rates of 3-4% per year until 2015) and traffic flows could grow correspondingly.

IWT is, in comparison to air and road transport, seen as more environmentally friendly and energy efficient, and can therefore contribute to sustainable socio-economic development of the region. A multimodal use of available transport possibilities (road, rail and IWT) has to be ensured. Transport policies to promote modal shift, as articulated for example in the EU's 2003 and 2006 Transport White Papers, are driving a wave of proposals for investments in waterway infrastructure, supported by the International Finance Institutions and the TEN-T programme of the EU. The modal shift policies are

⁹ These different directives include e.g. the Birds Directive (79/409/EEC), the Habitats Directive (92/43/EEC), the SEA – Strategic Environmental Assessment – Directive (2001/42/EC), the EIA – Environmental Impact Assessment – Directive (85/337/EEC), the EU Floods Directive, the upcoming EU European Marine Strategy Directive, the Common Agricultural Policy (CAP) and the Cohesion Policy. Relevant Conventions are Ramsar Convention, Bern Convention, Convention on Biological Diversity, Espoo Convention and World Heritage Convention - explanations are given in Annex 1.

¹⁰ AGN, ECE/TRANS/120/Rev.1, UN/ECE, 2006

reflected in the guidelines provided for selection of projects and the appointment of a TENs coordinator for IWT. The guidance also underlines the need to fully respect environmental legislation. These developments lend urgency to the agreement of a joint approach to the development of IWT and environmental protection.

Development of IWT

Inland navigation offers important opportunities to move cargos on the Danube and its tributaries instead of on the roads, in an energy-efficient manner (e.g. with regard to costs of goods transported per tonne-kilometre). It can contribute to mitigating road congestion on some routes. Making more intensive use of the free capacities of the Danube basin waterways can contribute to coping with traffic volumes in a manner that is environmentally and socially friendly, taking advantage of non-structural measures (such as fleet innovation) as well as infrastructure investments. Inland navigation thus needs to participate in future transport growth by maintaining or expanding its current modal-split within the Danube corridor. Forecasts indicate that this could result in a doubling of transport volumes on the Danube within the next 10 years. Currently, the percentage of shipping in total transport volume in the Danube region is below 10%. There is agreement that the framework conditions for inland navigation should be improved in an integrated manner by the ten Danube riparian states, following the objectives of the European Action Programme for the promotion of inland waterway transport NAIADES.

Climate change may have an impact on the further development of IWT in the Danube river basin. As a consequence, navigation management, planning and development need to take the issue of climate change into account. Navigation can make a contribution toward reaching environmental goals such as the Kyoto targets for reducing greenhouse gas emissions.

2.3 The current situation of riverine environment in the Danube river basin

Nature of Large River Systems

Large river systems such as the Danube are highly complex, multi-dimensional, dynamic ecosystems and thus are much more than just longitudinal channel networks. Understanding their high ecological complexity requires comprehensive observations and management at the catchment scale – a holistic approach that is required by the EU Water Framework Directive.

The Danube River can be divided into three main parts -- the upper, middle and lower stretches. Each part is characterised by different abiotic (i.e. non-living) features, hydromorphological structures and biological communities. Abiotic parameters include gradient, grain size, sedimentation, turbulence, oxygenation and water temperature.

“Hydromorphology” is the physical characteristics of the riverine structures such as river bottom, river banks, the river’s connection with the adjacent landscapes and its longitudinal as well as habitat continuity. Anthropogenic structural measures can modify a river system’s natural background conditions and therefore influence its ecological status. Numerous other factors add to the complexity of large river systems. For example, natural disturbances (e.g. floods, droughts) and associated sediment transport variations are among the key elements that constitute the basis for the highly dynamic nature of riverine landscapes and their biodiversity. River ecosystems can have relations and exchange processes with adjoining ecosystems (e.g. via tributaries, groundwater and alluvial floodplain forests). Complex natural driving forces and exchange processes result in frequently changing connectivity conditions and an especially heterogeneous habitat complex. The most important consequence of the ever-shifting mosaic of river habitats and ecotones is that natural riverine environments generally feature outstandingly high biodiversity.

Unlike to many other European rivers, certain sections of the Danube and its tributaries are still home to very typical, natural and dynamic habitat complexes, which are essential for many species. For example, they include the presence of habitats for many important and almost extinct species such as the Danube sturgeon and Danube salmon. The EU Habitats Directive enables Member States to designate such areas as protected, in order to effectively protect, restore and prevent the deterioration of these remaining features.

Effects of navigation on the riverine system

Human activities and uses affect the ecological and chemical status of large river systems in various ways. From an ecological point of view navigation is not the only pressure, activities such as hydroelectric power production and river straightening for flood control are also significant. Of decisive effect are river engineering measures that impair the original hydro-morphological situation (e.g. bed-load transport, morpho-dynamic development of the channel network, exchange processes between rivers and floodplains, groundwater regime) and/or the natural composition of ecological communities (e.g. through barriers for migratory fish species or destruction of riverbank and riverbed habitats and spawning places). Navigation requirements can result in a stabilized, single thread, ecologically uniform river channel, lacking both natural in-stream structures with their gentle gradients and connectivity with the adjacent floodplains. In addition to other hydromorphological alterations this might lead to the loss of species.

In many large river systems riverbed degradation can also significantly lead to severe ecological impairment. Locally increased bed load transport and consequent downstream output of bed material caused by channel construction for the improvement of navigation and/or flood control can in many cases be intensified by a substantial reduction of the bed load input from the upper catchment (e.g. due to retention by flood control measures and/or chains of power plants). Since lateral erosion of originally braiding or meandering rivers is limited by channel stabilisation, these processes can no longer balance out the natural aggradations of the alluvial floodplains. Therefore, on the one hand riverbed stabilisation works and dredging can eliminate ecologically important in-stream structures and lead to a uniform aquatic environment; whilst, riverbed erosion downstream of stabilisation works can lead to a vertical separation and hydrological decoupling of the river from its floodplain habitats.

In addition to hydromorphological impacts, navigation can also have other impacts on the water environment, such as pollution, which will be addressed in the respective EU WFD river basin management plans and in specific projects (e.g. on waste and sewage collection).

From the mechanical point of view, ship traffic causes waves, which can disturb the reproduction habitats of fish, benthic invertebrates, other biota as well as de-root aquatic plants. Ship engines can also cause an unnatural suspension of fine sediments, leading to reduced light for plant and algae growth.

Current situation and future outlook – EU WFD Article 5 Report and the Danube River Basin Management Plan

The EU WFD Article 5 Report (Danube Basin Analysis 2004) represents the first milestone towards the compilation of the national and international river basin management plans. Regarding surface waters, these reports include a characterisation of the natural conditions and a respective pressure/impact analysis concluding which surface water bodies are *at risk of failing* the EU WFD environmental objectives.

The Danube Analysis report prepared by the ICPDR has identified hydromorphological alterations caused by navigation, hydropower generation and flood defence as one of the main factors affecting the ecological integrity of the Danube river basin. These alterations have resulted in disturbance to the lateral connectivity, longitudinal continuity and overall ecological status degradation.

Today, 30% of the Danube River is impounded and 80% of the former floodplains of the Danube have been lost during the last 200 years through intensive hydropower generation, flood protection, navigation and land use.

The Danube River Basin Management Plan will be finalised by the end of 2009 and will include the Joint Programme of Measures, which will address hydromorphological alterations and impacts on the water status. The implementation of the plan by 2015 will aim for the achievement of the environmental objectives and conserve them for all surface waters in the DRB.

3 Balancing navigation and ecological needs - future approach

To enable them to function, both IWT and ecological integrity have certain basic needs. In order to develop mutually acceptable solutions - such needs must first be clearly defined. They are therefore listed below. However, not all needs are fulfilled in all cases. The implementation of a new, integrated planning philosophy (see below) would aim to put this right and will help ensure both sustainable development of IWT in the DRB and the achievement of all required environmental objectives.

A number of efforts are already undertaken by IWT to reduce the impact on aquatic ecological integrity. These include non-structural measures to improve inland navigation on the Danube (e.g. fleet development, new ship technology, inter-modal connections, river information systems).

3.1 Needs of IWT

Navigation is governed by a variety of national and international legislative instruments¹¹ inter alia ensuring safety of navigation. In order to facilitate economic and safe IWT the following points describe the basic needs for all IWT related infrastructure projects

- *Minimum fairway (depth and width) dimensions designed for individual river sections in the context of and based on a strategic understanding of basin-wide IWT requirements including:*
 - *Depth and width of fairway with a view to continuity of availability of sustainable and efficient navigation conditions.*
 - *Curve radius*
- *Construction and maintenance e.g.:*
 - *Low-water regulation by hydraulic structures (e.g. groynes)*
 - *Dredging and refilling of material*
- *Infrastructure to be located taking into account relevant physical and other factors (e.g. proximity to market and connectivity to the wider transport network)*

3.2 Needs of ecological integrity

Riverine ecological integrity in the EU is governed by a number of legal instruments (set out above). The overall achievement of the requirements of the EU WFD and interfacing policies is of paramount importance, requiring attainment of “good ecological status” or in the case of Heavily Modified & Artificial Water Bodies “good ecological potential” as well as no deterioration in the status of water.

¹¹ See chapter 2.1 and Annex 1

For the preservation/conservation of the ecological integrity of the Danube River, the basic needs are:

- *protected/conserved natural or ecologically high-value riverine landscapes, river sections and aquatic populations,*
- *the restoration of modified/impacted river sections and their adjacent landscapes,*
- *a dynamic and type-specific channel and floodplain environment (regarding in-stream structures, shorelines, side arms and floodplains) supporting a dynamic equilibrium and adequate connectivity conditions,*
- *undisturbed longitudinal and lateral migration of all fish species and other water-related species to ensure their natural and self-sustaining development, and*
- *a balanced sediment budget.*

These needs should be delivered through integrated concepts and plans based upon a basin-wide characterisation/typology of the Danube ecosystem and a process-oriented “Leitbild” approach (using a reference condition/visionary guideline approach including aquatic, semi-aquatic and terrestrial biological communities). Further, basin-wide unified monitoring is required based on existing national WFD compliant monitoring programmes.

3.3 New integrated planning philosophy for a joint approach

In order to improve inland navigation and river system protection in the Danube river basin a common planning philosophy is essential for the success. The prerequisite for future planning for an environmentally sustainable Inland Waterway Transport (IWT) is a common language across disciplines, an understanding of the position of the “other” side and a culture of communication and discussion. In order to guarantee an interdisciplinary approach and broader acceptance of the ongoing and future planning process from the beginning, the ministries responsible for environment, water management and transport, scientists and experts in river engineering, navigation, ecology, spatial planning, tourism and economics as well as representatives of other stakeholders, such as environmental non-governmental organisations and relevant private sector representatives, should be involved.

Existing problems, needs and goals for both, navigation and ecological integrity need to be clearly identified at the level of defined planning regions and river sections as well as in relation to specific existing and future navigation projects. Further, relevant environmental mitigation or restoration measures, should be proposed to prevent the deterioration of the ecological status and ensure the achievement of the environmental objectives. Both pressures and measures should be identified via a common understanding. This goal should be achieved by an interdisciplinary process. Opportunities to improve both the environmental and navigation conditions through a joint approach to projects need to be identified. There are some notable examples of projects such as the planning approach used in the Integrated River Engineering Project on the Danube to the East of Vienna. This general approach should be replicated, even if this particular project did not represent best practice in all respects of SEA procedure.

4 Recommendations

4.1 Integrated planning approach for the Danube river basin

To achieve “good ecological status” or “good ecological potential” for all surface waters and to prevent deterioration of the ecological status - as required by the EU WFD – an integrated planning philosophy is urgently needed. Multi-use riverine landscapes should be the goal (including for example providing for fauna and flora habitats, flood protection, inland navigation, fisheries, tourism). Catchment-wide thinking and cross-border cooperation are challenges calling for multi-disciplinary planning and decision-making processes.

Actions to improve the current situation should be seen from both perspectives IWT and ecological integrity and especially focus on the following areas:

- *River stretches requiring fairway development and associated effects on special ecological qualities and the water status.*
- *River stretches requiring ecological preservation/restoration and associated effects on navigability.*

Due to the fact that IWT plans and projects have environmental implications, there is the need to carry out environmental assessments before decisions are made. This is required by the Strategic Environmental (SEA) Directive (2001/42/EC) for qualifying plans, programmes and policies and required by the Environmental Impact Assessment (EIA) Directive (85/337/EEC) for qualifying projects. Under these procedures, the public can give its opinion and results are taken into account in the authorisation procedure for the projects¹². A culture of integrated planning of navigation and environmental improvement projects is needed to minimise legal costs, delays and sometimes unstable outcomes.

4.2 Integrated planning principles

In order to implement an integrated planning approach for all plans and projects all involved stakeholders need to agree on common planning principles leading to acceptable solutions for ecological integrity as well as navigation. Such planning principles should be applied to every project within the Danube river basin and include at least the following steps, but first and foremost, joint planning of projects seeking both environment and navigation improvements as the key to accelerate the process:

- *Establish interdisciplinary planning teams involving key stakeholders, including Ministries responsible for transport, for water management and environment, waterway administrations, representatives of protected areas, local authorities, non-governmental organisations, tourism, scientific institutions and independent (international) experts.*
- *Define joint planning objectives.*
- *Set-up a transparent planning process (information/participation) based on comprehensive data and including the environmental benchmarks and current standards required for Strategic Environmental Assessment (SEA – for qualifying plans, programmes and policies) and for Environmental Impact Assessment (EIA – for projects).*
- *Ensure the comparability of alternatives and assess the feasibility of a plan (including the costs and benefits) and/or project (including a reflection of the status quo, alternatives and non-structural measures as well as environmental and resource costs).*

¹² Further details on the directives, and on the Commission’s guidance on the implementation are available on <http://ec.europa.eu/environment/eia/home.htm>

- *Assess if the IWT project has a basin wide/transboundary impact.*
- *Inform and consult the international river commissions in the Danube river basin (ICPDR, Danube Commission, International Sava River Basin Commission) before deciding on new developments, as well as other possibly affected countries.*
- *Respect the Danube River Basin Management Plan 2009, including its Joint Programme of Measures, and the respective sub-basin and national river basin management plans and programmes of measures as the basis for integrated planning and implementation of IWT infrastructure projects, in the mean time respecting already existing environmental legislation requirements.*
- *Define and ensure the prerequisites and goals of IWT as well as river/floodplain ecological integrity, followed by a consideration of the need to prevent deterioration, possible mitigation and/or restoration measures to achieve all environmental requirements.*
- *Ensure that there are no technically viable, environmentally better and not disproportional costly alternative means to achieve the required objective, in line with the requirements of Article 4(7) of the EU WFD.*
- *Seek to avoid or, if this is not possible, to minimise the impacts of structural/hydraulic engineering interventions in the river system through mitigation and/or restoration, giving preference to reversible interventions.*
- *Ensure that, when planning navigation projects, the issue and respective effects of climate change are taken into account.*
- *Use of best practice measures to improve navigation¹³.*
- *Carry out a priority ranking of possible measures to ensure the best possible environmental as well as navigation development effect and use of financial resources.*
- *Ensure flexible funding conditions for projects to enable integrated planning (including the involvement of all stakeholder groups) and adaptive implementation as well as monitoring.*
- *Monitor the effects of measures and – if relevant- adapt them (Examples of possible measures are given in Annex 2).*

4.3 Criteria for river engineering

To implement the above mentioned planning principles the following criteria should be applied during the design phase of navigation projects:

- *Use a case-by-case approach which considers both the ecological requirements for river sections and the basin-wide scale and the strategic requirements of IWT at the basin-wide scale¹⁴ when deciding on adequate fairway width and depth.*
- *‘working with nature’ wherever possible through implementation of measures according to given natural river-morphological processes following the principle of minimum or temporary engineering intervention,*
- *integrated design of regulation structures, equally regarding hydraulic, morphological and ecological criteria,*
- *implementation of measures in an adaptive form (e.g. river bed stabilisation by granulometric bed improvement, low water regulation by groynes),*
- *optimal use of the potential for river restoration (e.g. river banks restoration) and side channel reconnection,*
- *ensuring that flood water levels are not exacerbated and, ideally, are reduced.*

¹³ For best practices with regard to structural measures see e.g. the EU activity papers WFD & Hydromorphology Technical and Case Studies documents: Good practice in managing the ecological impacts of hydropower schemes, flood protection works and works designed to facilitate navigation under the EU WFD; best practice examples which will be developed in the frame of the ICPDR’s Danube River Basin Management Plan; best practice for integrated planning approaches as the ‘Integrated River Engineering Project on the Danube to the East of Vienna’.

¹⁴ See also Chapter 2.1 (legal situation) and Chapter 3.1 and 3.2 (needs of IWT and ecological integrity)

5 Follow-up Tasks

The ICPDR, Danube Commission, and International Sava River Basin Commission seek the approval of the Joint Statement by the end of January 2008.

The ICPDR, Danube Commission, and International Sava River Basin Commission will organise a workshop by mid 2008 on how to ensure the application, monitoring and assessment of the Joint Statement.

All organisations involved in this process will ensure the endorsement, promotion and utilisation of the Joint Statement.

The Danube Commission will organise a special workshop before the end of 2008 on environmentally friendly river development and maintenance techniques for waterway administrations and navigation authorities in the Danube river basin.

The ICPDR, Danube Commission, and International Sava River Basin Commission, including relevant stakeholders, will meet yearly to discuss specific navigational and environmental developments and to highlight good practices in river maintenance projects.

EBU and PIANC will discuss leading an activity to assess the potential of non-structural measures to improve IWT in the Danube river basin in an appropriate forum.

The ICPDR will convene a meeting of ministries responsible for waterway transport, water management, environment and waterway administrations to secure input to the Programme of Measures required under the EU WFD at national, sub-basin and Danube river basin level including the information exchange with relevant stakeholders.

Projects being currently implemented or under concrete planning (see Annex 3) should apply the principles outlined in this Joint Statement. Progress and development of this implementation process should be reported to the ICPDR, Danube Commission and International Sava River Basin Commission by the responsible authorities and/or countries.

Participants in this process will ensure the development, promotion and integration of scientific research regarding biodiversity, effects of river engineering measures on ecological integrity/restoration of river floodplain systems, and climate change.

The initiator(s) of new projects will ensure the best possible exploitation of relevant EU and other international funding [R&D, TEN-T, LIFE, Structural Funds (ERDF), Cohesion Funds, ENPI, etc.] to guarantee the full implementation of environmental and transport requirements. The use of some of these funds is largely to be decided upon by national governments.

6 Annexes

1. *Background on legal framework*
2. *Examples of possible measures*
3. *List of current IWT projects - to be updated regularly*
4. *List of participating organisations*

Important documents that could not be discussed during the process:

- *List of IWT bottlenecks*
- *List of sensitive river sections*

ANNEX 1: Background to the legal framework

Belgrade Convention (<http://www.danubecom-intern.org>)

The *Convention regarding the Regime of Navigation on the Danube* signed in Belgrade on 18 August 1948 is the international legal instrument governing navigation on the Danube. The 'Belgrade Convention' is providing for free navigation on the Danube in accordance with the interests and sovereign rights of the Contracting Parties of the Convention, aiming thereby at strengthening the economic and cultural relations among themselves and with other nations.

According to the Convention, the 11 Member States Austria, Bulgaria, Croatia, Germany, Hungary, Moldova, Slovakia, Romania, Russia, Ukraine, Serbia undertake to maintain their sections of the Danube in a navigable condition for river-going and, on the appropriate sections, for sea-going vessels and to carry out the works necessary for the maintenance and improvement of navigation conditions and not to obstruct or hinder navigation on the navigable channels of the Danube.

The *Danube Commission* is located since 1954 in Budapest. It consists of the representatives of the Member States has been established to supervise the implementation of the Convention and to fulfil various other tasks aiming at ensuring adequate conditions for shipping on the Danube. It goes, historically speaking, back to the Paris Conferences of 1856 and 1921 which established for the first time an international regime to safeguard free navigation on the Danube.

The primary tasks entering the Commission's competence include:

- supervising the implementation of the Convention's provisions;
- preparing a general plan of the main works called for in the interest of navigation on the basis of proposals and projects presented by the Member States and the Special River Administrations and, likewise drawing up an evaluation of the costs of such works;
- consulting with, and making recommendations to the Member States in respect of the execution of the above mentioned works, with due consideration of the technical and economic interests, plans and possibilities of the respective States.

The Danube Commission is actively working in order to fulfil the *Declaration on European Inland Waterways and Transport* adopted by the Ministerial Conference on the most timely issues of European inland waterway transport (Budapest, September 11, 1991), as well as the *Declaration of the Rotterdam Conference on Accelerating Pan-European Co-operation Towards a Free and Strong Inland Waterway Transport* of 5-6 September, 2001.

Another relevant question in this context is the harmonization of technical prescriptions, rules and standards, as well as of legal provisions in force on the Danube, on the Rhine, within the European Union, and those adopted by the ECE UNO, with the aim of creating a uniform Pan-European system of inland navigation consisting of organizational structures that can meet present conditions.

Danube River Protection Convention (www.icpdr.org)

The *Convention on Co-operation for the Protection and Sustainable Use of the River Danube* (Danube River Protection Convention) forms the overall legal instrument for co-operation and transboundary water management in the Danube River Basin.

The Convention was signed on June 29 1994, in Sofia, Bulgaria, by eleven of the Danube Riparian States – Austria, Bulgaria, Croatia, the Czech Republic, Germany, Hungary, Moldova, Romania, Slovakia, Slovenia and Ukraine – and the European Community, and duly came into force in October 1998, when it was ratified by the ninth signatory.

The main objective of the Danube River Protection Convention (DRPC) is to ensure that surface waters and groundwater within the Danube River Basin are managed and used sustainably and equitably. This involves:

- the conservation, improvement and rational use of surface waters and groundwater
- preventive measures to control hazards originating from accidents involving floods, ice or hazardous substances
- measures to reduce the pollution loads entering the Black Sea from sources in the Danube River Basin.

The signatories to the DRPC have agreed to co-operate on fundamental water management issues by taking "all appropriate legal, administrative and technical measures to at least maintain and where possible improve the current water quality and environmental conditions of the Danube river and of the waters in its catchment area, and to prevent and reduce as far as possible adverse impacts and changes occurring or likely to be caused."

The *International Commission for the Protection of the Danube River* (ICPDR) is a transnational body, which has been established to implement the DRPC. The ICPDR is formally comprised by the Delegations of all Contracting Parties to the Danube River Protection Convention, but has also established a framework for other organisations to join.

Today national delegates, representatives from highest ministerial levels, technical experts, and members of the civil society and of the scientific community cooperate in the ICPDR to ensure the sustainable and equitable use of waters in the Danube River Basin.

Since its creation in 1998 the ICPDR has effectively promoted policy agreements and the setting of joint priorities and strategies for improving the state of the Danube and its tributaries.

This includes improving the tools used to manage environmental issues in the Danube basin, such as

- the Accident Emergency Warning System,
- the Trans-National Monitoring Network for water quality, and
- the information system for the Danube (Danubis).

The goals of the ICPDR are:

- Safeguarding the Danube's Water resources for future generation
- Naturally balanced waters free from excess nutrients
- No more risk from toxic chemicals
- Healthy and sustainable river systems
- Damage-free floods

The work of the ICPDR is supported by a Secretariat located in Vienna, Austria.

Framework Agreement on the Sava River Basin (<http://www.savacommission.org/index.php>)

The *Framework Agreement on the Sava River Basin* (FASRB) was signed by the riparian countries (Republic of Slovenia, Republic of Croatia, Bosnia and Herzegovina and the Federal Republic of Yugoslavia) in Kranjska Gora (Slovenia) on December 03 2002, after successful completion of negotiations run under the "umbrella" of the Stability Pact for South-eastern Europe.

The Agreement entered into force on December 29 2004. Accordingly, the *International Sava River Basin Commission* – the Sava Commission was constituted in June 2005 in Zagreb. The SC was established to implement the Framework Agreement, and to realize the mutually agreed goals:

- establishment of the international navigation regime on the Sava River and its navigable tributaries;
- establishment of the sustainable water management;

- undertaking measures for the prevention or restriction of danger, as well as the elimination of hazardous impacts of floods, ice, draught and accidents involving substances having negative impacts to waters.

The Agreement also defined the general principles on actions of the Parties, which would cooperate on the basis of sovereign equality, territorial integrity, joint benefit and good will, by mutual respect of the national laws, institutions and organizations, and by acting in accordance with the EU WFD.

The Agreement stipulates cooperation and exchange of data between the Parties in regard to the water regime of the Sava River, the navigation regime, regulations, organizational structures, and administrative and technical practice. It also envisages the necessary collaboration with international organizations (ICPDR, Danube Commission, UN/ECE, and EU institutions). The Parties will apply the principle of reasonable and fair utilization and division of the Sava River basin water resources in all actions. They will regulate all issues on enforcement of measures for ensuring the unified water regime, and elimination or reduction of trans-boundary impacts to waters of other parties by agreement.

Navigation on the Sava River is free for trade vessels of all states, which is identical to the regulation for the Danube navigation convention. The trade vessels will have a right to free entrance into ports on the part of the Sava River waterway from Sisak to its estuary into the Danube, as well as on all navigable parts of the Sava River tributaries. The Parties will undertake measures on maintenance of the waterways in their territory in the navigable state-of-condition, as well as to undertake measures on improvement of the navigation conditions, and will not prevent or cause any obstacles to navigation.

The Parties will prepare joint plans for the water resources management upon proposal of the Sava Commission.

Functions of the Sava Commission are:

- adoption of decisions with aim to ensure the navigation safety, decisions on conditions for financing the construction of waterways and their maintenance, decisions on its work, budget and actions;
- adoption of recommendations on all other issues referring to implementation of the FASRB.

The Sava Commission established its Secretariat in Zagreb in January 2006.

Relevant EU Directives

The **EU Water Framework Directive 2000/60/EC (EU WFD)** is most significant regarding the protection of surface waters and groundwater. This includes a requirement for the development of the first river basin management plan for the entire Danube River Basin by 2009. This process, involving 13 Danube basin states including non-EU Member countries, is coordinated by the ICPDR. The first step - the compilation of the Danube Basin Analysis 2004 - has already been completed. By 2015 the main environmental objectives of the Directive have to be achieved, which are – amongst others - the *good ecological* and *good chemical status* for surface water bodies in general or the *good ecological potential* and *good chemical status* for the specific case of heavily modified and artificial water bodies. These objectives will be reached by the implementation of the programmes of measures, which inter alia address hydromorphological alterations caused by navigation. For more information, see: http://ec.europa.eu/environment/water/water-framework/index_en.html

The **1979 Birds Directive (79/409/EEC)** identified 181 endangered species and sub-species for which the Member States are required to designate Special Protection Areas (SPAs). See http://ec.europa.eu/comm/environment/nature_biodiversity/index_en.htm

The 1992 **Habitats Directive (92/43/EEC)** aims to protect wildlife species and their habitats. Each Member State is required to identify sites of European importance and to put in place a special management plan to protect them, combining long-term preservation with economic and social activities, as part of a sustainable development strategy. These sites, together with those of the Birds Directive,

make up the Natura 2000 network - the cornerstone of EU nature protection policy. See http://ec.europa.eu/comm/environment/nature_biodiversity/index_en.htm

The "**SEA-directive**", **Directive 2001/42/EC** of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (strategic environmental assessment”).

The purpose of the SEA (“strategic environmental assessment”) Directive is to ensure that environmental consequences of certain plans and programmes are identified and assessed during their preparation and before their adoption. The public and all authorities concerned can give their opinion and all results are integrated and taken into account in the course of the planning procedure. SEA will contribute to more transparent planning by involving the public and integrating environmental considerations.

Further details on the Directive, on the Commission’s guidance on the implementation of Directive 2001/42/EC and on the EIA-directive (see below) are available on

<http://ec.europa.eu/comm/environment/eia/home.htm>

The “**EIA directive**”, **Directive 85/337/EEC** (environmental impact assessment) ensures that environmental consequences of projects are identified and assessed before authorisation is given. The EIA Directive outlines which project categories shall be made subject to an EIA, which procedure shall be followed and the content of the assessment.

Relevant International Environment Conventions

Bern Convention (http://www.coe.int/t/e/cultural_cooperation/environment/nature_and_biological_diversity/Nature_protection/index.asp#TopOfPage)

The *Convention on the conservation of European wildlife and natural habitats* adopted at Bern on 19 September 1979 came into force on June 1, 1982. It has been signed by the 39 member states of the Council of Europe, together with the European Union (Bosnia-Herzegovina is a non-signatory with observer status). The Convention is intended to promote cooperation between the signatory States in order to conserve wild flora and fauna and their natural habitats and to protect endangered migratory species.

States take appropriate legislative and administrative measures to protect the wild flora species specified in Appendix I (the Convention prohibits their deliberate picking, collecting, cutting or uprooting). Appropriate legislative and administrative measures must also be adopted to conserve the wild fauna species listed in Appendix II; among others it is prohibited to deliberately damage or destroy breeding or resting sites, or to deliberately disturb wild fauna, particularly during the period of breeding, rearing and hibernation. The Convention led in 1998 to the creation of the *Emerald Network of Areas of Special Conservation Interest* (ASCIs) throughout the territory of the parties, which operates alongside the EU *Natura 2000* programme, and represents its de facto extension to non-EU countries.

The Convention on Biological Diversity (<http://www.cbd.int>)

The *Convention on Biological Diversity* was signed in 1992; it has been ratified by 196 countries world wide – including the European Union as well as all Contracting Parties to the ICPDR (and Montenegro). The objective of the convention is to conserve biological diversity, secure the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

In April 2002, the Parties to the Convention committed themselves to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth, known as the *2010 Biodiversity Target*. This target was subsequently endorsed by the World Summit on Sustainable Development and the United

Nations General Assembly and was incorporated as a new target under the Millennium Development Goals.

Ramsar Convention (<http://www.ramsar.org>)

The Convention on Wetlands, signed in Ramsar, Iran, in 1971 and in force since 1975, is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. It is the world's oldest international conservation treaty, with the aim of sustainable use of wetlands for mankind without disturbing the natural properties of the ecosystem.

There are presently 156 Contracting Parties to the Convention, with 1676 wetland sites, totalling 150 million hectares, designated for inclusion in the Ramsar List of Wetlands of International Importance.

This List, commonly called *Ramsar sites*, not only recognise the world's most important wetlands, but are also an effective tool to help countries meet their goals of sustainability. About 80 wetlands of the Danube River Basin are included in the list of Ramsar sites.

Espoo Convention (<http://www.unece.org/env/eia/eia.htm>)

The *Convention on Environmental Impact Assessment in a Transboundary Context* is a UNECE convention signed in Espoo, Finland in 1991 that entered into force in 1997. It sets out the obligations of Parties to assess the environmental impact of certain activities at an early stage of planning. It also lays down the general obligation of States to notify and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact across boundaries.

The Protocol on *Strategic Environmental Assessment* (Kiev, 2003) will augment the Espoo Convention by ensuring that individual Parties integrate environmental assessment into their plans and programmes at the earliest stages – so helping to lay the groundwork for sustainable development. The Protocol also provides for extensive public participation in the governmental decision-making process.

World Heritage Convention (<http://whc.unesco.org/>)

The *Convention Concerning the Protection of World Cultural and Natural Heritage* was adopted by UNESCO in 1972 and since then ratified by 184 States Parties.

A UNESCO World Heritage Site is a specific site (such as a forest, mountain, lake, desert, monument, building, complex, or city) that has been nominated and confirmed for inclusion on the list maintained by the international World Heritage Programme administered by the UNESCO World Heritage Committee. As of 2007, a total of 851 cultural, natural, and mixed property sites are listed in 142 States Parties. Each World Heritage Site is the property of the country on whose territory the site is located, but the protection and conservation of these sites is a concern of all the World Heritage countries. One of the WHS in the Danube basin is the Danube delta.

Relevant International Navigation Agreements and Programmes

European Agreement on Main Inland Waterways of International Importance (AGN) (<http://www.unece.org/trans/conventn/agn.pdf>)

This agreement was adopted in 1996 in Geneva and entered into force in 1999; it is currently signed by 17 Parties and ratified by 13. The AGN aim is to determine unified technical and operational parameters for the construction, modernization, reconstruction and operation of waterways destined for international river transport.

The AGN establishes an internationally agreed European network of inland waterways and ports as well as uniform infrastructure and operational parameters to which they should conform. The geographical scope of the E waterways network, consisting of navigable rivers, canals and coastal routes extends from

the Atlantic to the Ural, connecting 37 countries and reaching beyond the European region. By acceding to the AGN, governments commit themselves to the development and construction of their inland waterways and ports of international importance in accordance with the uniform conditions agreed upon and within their investment programmes.

The Agreement underlines the importance of inland water transport which, in comparison with other modes of inland transport, presents economic and environmental advantages and may, therefore, contribute to reducing congestion, traffic accidents and negative environmental impacts in the pan-European transport system.

NAIADES

The European Commission's *Communication "NAIADES" on the promotion of inland waterway transport* includes an *Integrated Action Programme* for the development of this transport mode. The Action Programme focuses on five strategic and equally important areas, namely on the creation of favourable conditions for services and new markets, on the modernisation of the fleet, in particular its environmental performance, on jobs and skills, and on the promotion of Inland Waterway Transport as a successful business partner.

Part V of the Action Programme relates to the waterway infrastructure. It proposes *inter alia* that a European Development Plan for improvement and maintenance of waterway infrastructures and transshipment facilities should be initiated to make trans-European waterway transport more efficient while respecting environmental requirements. The Communication underlines that the development of waterway infrastructure should happen in a co-ordinated and integrated way, by fostering the mutual understanding of multi-purpose use of waterways and to reconcile environmental protection and sustainable mobility.

European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) (<http://www.unece.org/trans/conventn/agn.pdf>)

The ADN was established to ensure a high level of safety for the international carriage of dangerous goods by inland waterways; to contribute to environmental protection by preventing any pollution resulting from accidents or incidents during such carriage; and to facilitate international transport and trade.

Regulations annexed to the Agreement contain technical requirements for the international carriage of dangerous substances and articles in packages and in bulk on board inland navigation vessels and tank vessels, as well as uniform provisions concerning the construction and operation of such vessels. They also establish international requirements and procedures for inspections, issuance of certificates of approval, recognition of classification societies, monitoring, and training and examination of experts.

The ADN was adopted on 25 May 2000 in Geneva at a Diplomatic Conference organized jointly by the United Nations Economic Commission for Europe (UNECE) and the Central Commission for the Navigation on the Rhine (CCNR).

With six Contracting States thus far, including: Austria, Bulgaria, Hungary, Luxembourg, Netherlands and Russian Federation, the Agreement will enter into force once one more State has deposited its instrument of ratification, acceptance, approval or accession.

Pending the entry into force of ADN, the annexed Regulations are updated on a regular basis at a Joint UNECE/CCNR Meeting of Experts for recommended application through national legislation. The current version is from 2007.

Annex 2: Examples of possible measures

List of navigation needs, respective measures, their general effect and specific pressures on ecology. Ecological measures to achieve and ensure the environmental objective/sustainability are included (to be extended).

This list is not exhaustive.

| Navigation Needs | Navigation Measures | General Effects | Pressures/Effects on Ecology | Ecological Needs | Environmental Measures |
|--|---|---|---|---|---|
| Minimum water depth (navigation fairway) | Transformation of the navigation fairway towards outer bank and deep water sections, low water regulation, dredging and refilling of material | Increase of water level at low flows | River channelization due to low water regulation, reduction of morphodynamics | Minimization of river engineering measures | River restoration (esp. river banks and floodplains) |
| Minimization of lateral flow velocity | Improvements of the flow field at confluences with tributaries and reconnected side channels by river engineering | Low cross sectional flow velocities | Reduced morphodynamics of confluences, less cross sectional flow velocity | No restriction to river bank and side channel dynamics | Side channel reconnection and restoration of tributary confluences |
| No sudden changes in flow field, flow velocity | Limitation of flow velocity changes (gradual changes) from reaches with e.g. new low water regulation towards not modified downstream and upstream sections | Low spatial variability of boundary conditions for navigation | Modified flow field compared to more natural conditions | Development of flow field and flow velocities towards Leitbild conditions (visions) | Development of river engineering measures to improve flow field variability |

| Navigation Needs | Navigation Measures | General Effects | Pressures/Effects on Ecology | Ecological Needs | Environmental Measures |
|--|--|--|---|--|--|
| Predictable position and geometry of navigation channel | Minimization of sudden sedimentation by use of groins, dredging and refilling | Less interruption / disturbance for navigation | Modified sediment transport and river morphology, habitat alteration | Variable water depths, flow widths, grain sizes, low lateral river bed gradients | Restoration measures leading to high variances of water depth, channel widths, grain sizes, moderate lateral gradients |
| No extreme trend towards river bed aggradation / degradation of the main channel | E.g. Construction of groins (aggradation), dredging and refilling of material, / river bed widening, granulometric bed improvement (degradation) | Dynamic river bed stability | Also a need for ecology as the pressure is not resulting from the driver navigation | No extreme trend towards river bed aggradation / degradation of the main channel | E.g. Construction of groins (aggradation), dredging and refilling of material, / river bed widening, granulometric bed improvement (degradation) |
| | | | | Channel morphodynamics | Preservation or improvement of river morphology: no river bed pavement, keeping of morphodynamics, specific groins forms to improve morphodynamics, avoiding of groin fields |
| | | | | River bank morphodynamics | Initiation of more nature-like river banks: river bank restoration, removal of bank protection, side erosion, declinant groins to enhance side erosion |

| Navigation Needs | Navigation Measures | General Effects | Pressures/Effects on Ecology | Ecological Needs | Environmental Measures |
|-------------------------|---|-----------------|------------------------------|----------------------|--|
| | | | | Lateral connectivity | Floodplain / wetland / sidearm reconnection, more water in the floodplain/alluvial area, improvement of habitats |
| General needs | General measures | | | | |
| Keeping of flood levels | Improvement of retention areas, river bed widening, no increase of flood risk | | | | |

Annex 3: List of current IWT and multipurpose (incl. IWT) projects in the Danube river basin (status 12 October 2007)

This list summarises ongoing and future navigation projects in the Danube River Basin and focuses on large development projects. It was checked by stakeholders in 2007 in the frame of the process on the Joint Statement on Inland Navigation and Environmental Sustainability in the DRB and will be updated in the future.

Project status is differentiated as: **under concrete planning (of feasibility)**, **under implementation**, **completed**.

The list is based on the Danube Basin Analysis 2004 (WFD Roof Report), ANNEX 6: *Future Infrastructure Projects affecting Hydromorphological Conditions in the Danube River Basin*.

| PROJECT NAME / LOCATION | COUNTRY | PROJECT TYPE | PROJECT STATUS (October 2007) | SHORT DESCRIPTION / COMMENTS |
|---|---------|---|--|---|
| 1. Danube: Straubing-Vilshofen | Germany | Navigation - TENs | Plan – project assessment for regional planning completed in 2006 (1 dam). | Part of Corridor VII of the TENs list (Eliminating Bottlenecks on the Rhine-Main-Danube-Waterway) of priority projects. The project assessment includes three alternative solutions: 1) fluvial methods only (i.e. groynes, dredging), 2) construction of 1 dams/weirs, and 3) construction of 3 dams/weirs to improve navigation in the 70 km long stretch of the Danube |
| 2.1. Danube: Wachau | Austria | Navigation | Technical surveys on improvement of navigability at 3 critical fords (total length: less than 3 km). Measures to improve sidearm ecology by reconnections have already been realized . | 20 km long section (3 fords) to be better maintained for navigation. |
| 2.2. Danube: Vienna - Bratislava | Austria | Navigation – TENs, River-bed-stabilisation and ecological improvement | Plan completed on the base of interdisciplinary experts agreement. Pilot river bank restorations and side-arm | One of the TEN priority projects (eliminating bottlenecks on the Rhine-Main-Danube Waterway - Corridor VII). The project involves a variety of |

| PROJECT NAME / LOCATION | COUNTRY | PROJECT TYPE | PROJECT STATUS (October 2007) | SHORT DESCRIPTION / COMMENTS |
|---|--|---|--|---|
| | | | reconnections were recently completed. Environmental Impact Assessment to be completed by mid 2008; construction of pilot projects is planned to start during the low water period 2007/2008; construction of the main project is scheduled for 2008/2009. | infrastructural and ecological measures to improve navigation, the stability of the river bed as well as the ecological conditions along the 50 km stretch of the Danube. |
| 3. Danube-Odra-Elbe Canal | Czech Republic, Slovakia, Austria, Poland, Germany | Navigation | Preliminary study for urbanistic reserve. Discussion on canal plan within Czech government | Preliminary study on connecting the Danube, Odra and Elbe, supported by the water transport development policy, opposed by the environment policy. It has been discussed for a very long time. Implementation is not expected in the near future. |
| 4. Port Devinska Nova Ves | Slovakia | Navigation - Port | Baseline study and plan | Port to be built upstream the mouth of the Morava River (near Bratislava) |
| 5. Danube: Bratislava/Wolfsthal | Slovakia, Austria | Multipurpose (power generation, navigation) | Plan | Supported by the water transport development policy in Slovakia. |
| 6. Danube - Gabcikovo/Nagymaros | Slovakia, Hungary | Multipurpose (power generation, navigation) | Partly built – remedial measures needed; ongoing discussion about alternative scheme of operation | Negotiations are ongoing for the implementation of the decision of The International Court of Justice at The Hague. |
| 7. Danube: Hungarian section (Szap-Mohács, rkm 1812-1443) | Hungary | Navigation | Interim Report was published in March 2007 (available at www.vituki.hu). Final Report with the recommendations on the applicable ways of river | The study is supposed to provide proposals for the improvement of the navigability through the improvement of the state of the environment (related issues: elimination of bottlenecks and |

| PROJECT NAME / LOCATION | COUNTRY | PROJECT TYPE | PROJECT STATUS <i>(October 2007)</i> | SHORT DESCRIPTION / COMMENTS |
|--|---|--|--|--|
| | | | regulation follows by the second half of September 2007. | fords, maintenance issues, ecological rehabilitation, improvement of tourism and recreation, protection of drinking water resources and many other aspects). |
| 8. Danube: rkm 1428 – 1197.7 | Serbia | Navigation | Identified in Master Plan and feasibility study for IWT in Serbia | Identified 20 bottlenecks for navigation; 7 have high priority – works planned in next 3 years |
| 9. Danube: Apatin (rkm 1405 – 1400) | Serbia, Croatia | Multi-purpose (navigation, unstable bank protection, flood and ice protection) | Feasibility studies under development both in Serbia and Croatia. | Bilateral negotiations planned, agreement between Presidents |
| 10. Multipurpose hydrotechnical system/Drava River | Croatia, Hungary | Power generation, irrigation, flood protection, navigation | Croatian State Physical Planning Programme (1999); design developed | -- |
| 11.1. Rehabilitation and development of navigation on the Sava River | Slovenia, Croatia, Bosnia and Herzegovina, Serbia | Navigation | Pre-feasibility study completed; Transport Needs Assessment and Legal and Administrative Framework Studies ongoing (USAID); Feasibility Study to be launched in 2007 | Project is aimed to restore navigation on the Sava River and upgrade the waterway infrastructure; Coordination and management – by the Sava Commission |
| 11.2. Sava | Slovenia | Navigation | Strategy is ready. | Potential location of harbour mentioned in the Spatial Development Strategy of Slovenia, possibly in the area of Brežice. |
| 11.3. Multipurpose hydro-technical system/Sava river | Croatia | Power generation, navigation, water supply, irrigation, flood protection | State Physical Planning Programme (1999); design developed | Cooperation with Bosnia and Herzegovina, downstream of the Una river mouth |
| 12. Danube-Sava navigable canal | Croatia | Multipurpose hydrotechnical system (navigation, irrigation, drainage) | Design developed, environmental assessment 2007; spatial plan published in May 2007, | Consultation with NGOs and forestry society under way |

| PROJECT NAME / LOCATION | COUNTRY | PROJECT TYPE | PROJECT STATUS (October 2007) | SHORT DESCRIPTION / COMMENTS |
|---|-------------------|-------------------|---|--|
| | | | preliminary works to start in 2007 | |
| 13. Danube between Bulgaria and Romania | Bulgaria, Romania | Navigation - TENs | Feasibility study 2007-2008 (works planned at 152 M€ for 2009-2012) | Negotiations foreseen between the Romanian and Bulgarian Environment and Transport Authorities in order to mitigate the adverse impact on the water status. ISPA assistance for Romania (2.7 M €) was contracted in May 2007 to produce a feasibility study including EIA for the section Iron Gate II (rkm 863) to Calarasi/Silistra (rkm 375); |
| 14.1. Danube: Calarasi – Braila (rkm 345 – 175) | Romania | Navigation | Feasibility study and technical project including EIA were finalized in 2006 (1.64 M€ ISPA and state funds). Received stakeholder comments led to modifications of the technical project Environment Permit was issued by Ministry of Environment in February 2007. Tender procedure for the works supervision was finalized in 09/2007; tender procedure for the works contract will be finalized by the end of 2007. | EU Technical Assistance (ISPA) for the improvement of navigation conditions meets the Danube Commission recommendation (2.50 m): This is part of Corridor no. VII with many bottlenecks below 1.5 m. The project aims to realise bottom sills, bank protection, groins, river bed calibration and stabilization. Estimated costs (according to feasibility study): 56 M€: <ul style="list-style-type: none"> Phase I: 37.7 MEUR with 50% from ISPA fund (works 35.55 M€, supervision 1.7 M€). Period: 2008 – 2010 Phase II: 20.45 M€ from EU cohesion funds and state budget, period: 2011 - 2013 |
| 14.2. Maritime Danube and | Romania | Navigation | Feasibility studies and works for every component of the project | Improvement of navigation conditions of the Danube and its maritime sector; |

| PROJECT NAME / LOCATION | COUNTRY | PROJECT TYPE | PROJECT STATUS <i>(October 2007)</i> | SHORT DESCRIPTION / COMMENTS |
|--|---------|--------------|---|--|
| Sulina channel | | | in different stages of elaboration, implementation | bank protection of Sulina channel (part of Corridor no. VII) Total costs: 76 M€ (38 M€ state and M€ loan from EBI). Implementation: 2004 – 2009. Project components: <ul style="list-style-type: none"> • Banks protection on Sulina Canal • Signalization and topographical measurement system for the Romanian Danube |
| 15. Danube Port of Moldova | Moldova | Navigation | Port opened in 2007 | Oil terminal at Giurgiulesti for the supply of the country, located upstream the Danube delta |
| 16.1. Romanian Danube Delta | Romania | Navigation | Works 2006-2009 | Bank protection on Sulina Channel (64 M€), topographic and hydro-graphic survey and signaling system on the Danube (5 M€) |
| 16.2. Ukrainian Danube – Black Sea deep water fairway | Ukraine | Navigation | Navigation resumed in 2007 and the fairway is under revival | Works on the future revival and creation of the protecting dike: 12 M€ in 2007, 18 M € in 2008 |

ANNEX 4: List of participating organisations

| | |
|------------------------|--|
| Austria | Ministry of Transport, Innovation and Technology |
| Austria | Ministry of Agriculture, Forestry, Environment and Water Management |
| Austria | Waterways Authority, via donau GmbH |
| Bosnia and Herzegovina | State Ministry of Communication and Transport / Department for Transport |
| Bulgaria | Ministry of Environment and Water |
| Bulgaria | Ministry of Transport |
| Bulgaria | Ministry of Capital Investment / Department for Transport |
| Bulgaria | Executive Agency "Exploration and Maintenance of the Danube River" |
| Croatia | Ministry of the Sea, Tourism, Transport and Development / Directorate for Inland Waterway Navigation |
| Croatia | Ministry of Agriculture, Forestry and Water Management |
| Croatia | Croatian Waters |
| Czech Republic | Ministry of Transport / Department for Navigation and Waterways |
| European Commission | DG Environment – Unit Water & Marine Protection |
| European Commission | DG Energy and Transport |
| Germany | Ministry of Environment, Nature Conservation and Nuclear Safety |
| Hungary | Ministry of Economy and Transport |
| Hungary | Ministry of Environment and Water / WFD Department |
| Moldova | Ministry of Transport and Administration of Roads / Department for European Integration |
| Moldova | Ministry of Ecology and Natural Resources |
| Romania | Ministry of Transports, Constructions and Tourism / General Directorate for Naval Transport |
| Romania | Ministry of Environment and Sustainable Development |
| Serbia | Ministry of Capital Investment/Department for Transport |
| Serbia | Ministry of Agriculture, Forestry & Water Management / Directorate for Water |

| | |
|----------|---|
| Serbia | Directorate for Inland Waterways 'Plovput' |
| Slovakia | Ministry of Environment / Division of Water |
| Ukraine | Ministry of Transport and Communications |
| Ukraine | Ministry of Foreign Affairs / Department of Economic Cooperation |
| Ukraine | Delta-Pilot |
| | Central European Dredging Association (CEDA) |
| | Danube Commission – Secretariat |
| | Danube Environmental Forum (DEF) |
| | Danube Tourist Commission |
| | European Barge Union (EBU) |
| | European Federation of Inland Ports |
| | Harbour Giurgiulesti (Moldova) |
| | Inland Navigation Europe |
| | International Association for Danube Research (IAD) |
| | International Commission for the Danube River Basin (ICPDR) - Secretariat |
| | International Sava River Basin Commission (ISRBC) - Secretariat |
| | International Transport Forum / former European Conference of Ministers of Transport (ECMT) |
| | National Park Donau Auen |
| | PIANC |
| | Southeast European Cooperative Initiative (SECI) |
| | Stability Pact for South Eastern Europe |
| | TINA Vienna Transport Strategies GmbH / Corridor VII |
| | TRAPEC (Tractebel Project – Managers, Engineers & Consultants) |
| | University of Karlsruhe, Institute for Aquatic Environmental Engineering |

| | |
|--|---|
| | University of Natural Resources and Applied Sciences (BoKu), Vienna |
| | WWF Germany |
| | WWF International Danube-Carpathian Programme / Department for Freshwater |