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Potentials of the Danube Strategy for a sustainable development in Central and Eastern Europe

Interdisziplinäre Projektstudie WS 2011/2012 UBRM

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Table of Contents

List of Figures IV

List of Tables V

List of Abbreviations and Acronyms VI

1. Introduction 1

2. Materials and Methods 5

3. Results 7

3.1. Funding of the EUSDR 10

3.2. Pillar A - Connecting the Danube Region 13

3.2.1. Development of waterway transport 14

3.2.1.1. State of the art 14

3.2.1.2. Arrangements for the development of waterway transport 17

3.2.1.3. Political and legal conditions 18

3.2.1.4. Measures 20

3.2.2. Sustainable energy 24

3.2.2.1. EU Policies 1993-2011 25

3.2.2.2. Energy and the EUSDR 27

3.2.2.3. Energy efficiency (EE) 28

3.2.2.4. Securing save energy supply 32

3.2.3. Promotion of culture and tourism 36

3.2.3.1. Development of infrastructure for sustainable tourism 36

3.2.3.2. Promotion of cultural tourism 40

3.2.3.3. Cross border-tourism in the Danube-Delta 42

3.3. Pillar B - Protecting the Environment in the Danube Region 45

3.3.1. Water quality 46

3.3.1.1. Current status 47

3.3.1.2. Development to an improved water quality 51

3.3.2. Environmental Risks 54

3.3.2.1. Floods 54

3.3.2.2. Accidental Pollution 57

3.3.3. Biodiversity 60

3.3.3.1. Biodiversity on the Danube River Basin 61

3.3.3.2. Network of Protected areas 63

3.3.3.3. The Danube River Network of Protected Areas (DRNPA) 65

3.4. Pillar C - Building Prosperity in the Danube Region 70

3.4.1. Targets 72

3.4.2. Education & skills, Research & Innovation 72

3.4.3. Supporting the Competitiveness of enterprises 80

3.4.4. Marginalised communities 81

3.5. Pillar D - Strengthening the Danube Region 85
3.5.1. Institutional Capacity and Cooperation *85*
3.5.1.1. Sustainable Public Administration 86
3.5.1.2. Danube Civil Society Forum 87
3.5.1.3. Cooperation in border regions 89
3.5.2. Security and Organised and Serious Crime *97*
3.5.2.1. Organised and Serious Crime in the Danube Region 97
3.5.2.2 Actions of the EUSDR Action Plan of PA 11 103

4. Discussion 107

4.1. Potentials within the pillars of the EUSDR 107
4.2. Synergies and conflicts 112

List of References 115

List of Figures

Page

Figure 1: The Danube Region. 3
Source: Interact 2012

Figure 2: The mass transport capabilities of a typical pushed convoy, consisting of a thrust vessel and four non-motorized pushed barges. 16
Source: Wiener Wasser Almanach 2010

Figure 3: Technologies to reduce CO_2 emissions. 29
Source: JRC-IPTS 2009

Figure 4: EuroVelo routes. 39
Source: EuroVelo 2011

Figure 5: Overnight stays in the Austrian Danube Region 2000-2010. 41
Source: Statistik Austria 2011

Figure 6: Results of the risk analysis for the entire Danube River. 50
Source: ICPDR 2004

Figure 7: Status classification for the Danube River. 51
Source: ICPDR 2009a

Figure 8: Potential Accident Risk Spots in the DRBD. 58
Source: ICPDR 2005

Figure 9: Old Contaminated Sites in Potentially Flooded Areas in the DRBD. 59
Source: ICPDR 2005

Figure 10: Beluga species distribution in the DRB. 63
Source: ICPDR 2007

Figure 11: Protected Area in the DRB (Natura 2000). 65
Source: ICPDR 2009b

Figure 12: NaturaParks in the Danube River Basin. 66
Source: NaturaPark 2012

Figure 13: Organisational chart of the Danube Civil Society Forum. 88
Source: Danube Civil Society Forum 2011

Figure 14: CBC programmes across Europe. 91
Source: EU Förderagentur Stadt Wien no date

Figure 15: Overview IPA-CBC areas. 92
Source: Stockhammer 2011

List of Tables

Page

Table 1: EUSDR - Coordination of the Pillars, Priority Areas and Priority Area Coordinators. 8
Source: OEROK 2011 modified

Table 2: Examples of financing covering the Region. 11
Source: European Commission 2010

Table 3: Comparison of Budgets for EU Cohesion Policy Funds. 12
Source: European Commission 2010

Table 4: Expenditures budgeted by the Structural Funds in 2007-2013 for Pillar A. 13
Source: European Commission 2010

Table 5: Share of renewable energy 2009 and targets for 2020. 28
Source: Eurostat 2011

Table 6: Expenditures budgeted by the Structural Funds in 2007-2013 for Pillar B. 46

Source: European Commission 2010

Table 7: Six native species of Sturgeons in the Danube Region. 62
Source: IUCN 2009 modified

Table 8: Expenditures budgeted by the Structural Funds in 2007-2013 for Pillar C. 71
Source: European Commission 2010

List of Abbreviations and Acronyms

AARC	Alps-Adriatic Universities Rectors' Conference
AEWS	Accident Emergency Warning System
ARS	Accident Risk Spots
CBC	Cross-border Cooperation
DCSF	Danube Civil Society Forum
DRB	Danube River Basin
DRBD	Danube River Basin District
DRBM	Plan Danube River Basin Management Plan
DRPC	Danube River Protection Convention
DRC	Danube Rectors' Conference
ECF	European Cyclists' Federation
EE	Energy efficiency
EFD	EU Flood Directive
EFAS	European Flood Alert System
ETC	European Territorial Cooperation
EUSBSR	European Union Strategy for the Baltic Sea Region
EUSDR	European Union Strategy for the Danube Region
FFH	Flora Fauna Habitat
GIZ	(former GTZ) Deutsche Gesellschaft fur Internationale Zusammenarbeit
ICPDR	International Commission for the Protection of the Danube River

JDS	Joint Danube Survey
NAIADES	Navigation and Inland Waterway Action and Development in Europe
NELI	Cooperation-Network for logistics and nautical education focusing on Inland Waterway Transport in the Danube corridor supported by innovative solutions
NFI	Nature Friends International
PA	Priority Area
PLATINA	Platform for the implementation of NAIADES
RES	Renewable Energy Sources
SEE	South East Europe Transnational Cooperation Programme
TEN-T	Trans-European Transportation Network
TNMN	Transnational Monitoring Network
UNECE	United Nations Economic Commission for Europe
WFD EU	Water Framework Directive
WRI	Water Risk Index
WWTP	Waste Water Treatment Plant

1. Introduction

The Danube river runs through ten countries and is, following the Volga, Europe´s second longest river with a length of 2 857 km. It has two sources, which both spring in the Black Forest in Germany and unite after some kilometres in a small town called Donaueschingen. From there the Danube runs in eastward direction through ten countries and finally discharges into the Black Sea (Glüe 2011).

The River Basin covers an area of 817 000 km² with a population of around 115 million people. It stretches across 14 states, eight of them are EU Member States (Germany, Austria, Czech Republic, Slovakia, Hungary, Slovenia, Bulgaria and Romania) and six are not (Croatia, Serbia, Montenegro, Bosnia and Herzegovina, Ukraine and Moldova).

Four capital cities are located directly on the Danube: Vienna, Bratislava, Budapest and Belgrade.

In summary, the river connects more people and cultures than any other river on earth.

Many important and famous people lived and live in this region. For example scientists like Albert Einstein and Sigmund Freud, also artists, musicians and composers like Richard Strauss and Nobel laureate, Imre Kertész just to name a few (Schiele 2000).

There is also an enormous variety of nature with many different landscapes. There are flat regions, with an abundance of reed beds and rivulets, like nature reserves as the lake- and wetland reserve at Srebarna, or the Danube Delta Biosphere Reservation. Also hilly and wooded country, craggy gorge of the Iron Gate and mountains like the Carpathian Mountains are home to a rich plant and animal world (Konze 2011).

History

The Danube Region was and is constantly undergoing changes with its long and moving history. The first peoples which shaped the area by culture were the Celts and the Romans. The Romans used the Danube as a tranport- and cross-flow. The border called Danube-Limes protected the Roman Empire from the middle of the first century onwards for half a millennium against invaders from the North and East. The Roman Empire fell in the 5th century into many smaller states (Kramer 2000a).

The next significant event was the thrust of the Ottoman Empire in the Danube Region. The Ottomans brought their Persian-Arab culture and Islam into the region. In the years 1529 and 1683 they expanded so far, that they tried to take over Vienna, but failed both times. As they failed the second time, the Ottomans had to leave and the Austrian Habsburgian expanded and strengthened their power. They reached the height of their power as they could connect Hungary to their empire (Rolbetzky 2000).
The Austro-Hungarian Empire, the so called Danube Monarchy (1867-1918) was the next great Empire that covered most of the Danube Region. The Danube Monarchy was a very heterogenic state with about nine spoken languages. The Habsburgian Emperor of Austria and King of Hungary, Franz Josef I., built many cultural and edictal buildings in his empire, especially in Vienna and Bratislava. These common architecture and some dishes are cultural similarities that characterize the countries of the former Austro-Hungarian Empire.

In 1914 after the assassination of the heir to the throne, the First World War began. The Habsburg Monarchy collapsed with the end of the war in 1918 (Kramer 2000b).

Only 15 years later, the Second World War began and the NS-Regime began to conquer Europe. In this war, about 60 million people died. Jews and minority persecution, holocaust and genocide are some key words that describe this inhuman time. In 1940, Romania and Hungary allied with Germany, in 1941, Bulgaria joined. Also in 1941, the NS-Regime invaded Yugoslavia, and thus they controlled the entire Danube Region. The expansion went on until 1943 with the "delay" in Stalingrad it had a first end.

After the end of the Second World War in 1945, Europe as a whole was divided in East and West. The Iron Curtain ran from the Barents Sea through Germany, ending at the Black Sea. It was the time of the Cold War between the Western NATO states and the Eastern Warschow Pact states. The countries east of the Iron Curtain were marked by economic planning, while the western evolved their capitalist economic system. With the fall of the Berlin Wall in 1989 came a great change. The boundaries between the two German states were opened. In this time the Soviet Union broke up, too, and the Warschow Pact was dissolved.

In the last years of the 20th century right up to the present time, Europe experienced a political, economic and social growing together. In 1992 the European Union was founded with the Maastricht Treaty. The origin of the EU lie in the 1951 and 1957 founded European Communities like ECSC, EEC and Euratom (Weltatlas.info 2011).

In Yugoslavia, however, the conflict intensified after the Cold War, ultimately generating wars and leading to the division of the multinational state. The armed conflicts have been settled until 2001. In 2006, Montenegro distanced itself from Serbia (Neumayer 2011).

The idea of a macro-regional strategy

The Danube Region is adjacent to the Baltic Sea Region, the second macro-region of Europe. In 2009 the European Council adopted the Strategy for the Baltic Sea Region (EUSBSR) and the first European macro-region was created. After first positive developments the idea to create a second macro-regional strategy for the Danube Region came quickly.

Figure 1: The Danube Region (INTERact 2012)

Figure 1 gives an overview of the region and the countries which are involved (INTERact 2012). In contrast to the Baltic Sea Region where the countries are located around the Baltic Sea, the

countries of the Danube Region are ranked consecutively along the Danube. It is a whole new concept in Europe to create a region like this for a common development.

The EUSDR is structured in 4 Pillars of developing, which will be described subsequently. This paper deals with these four Pillars and is structured accordingly. The issue of sustainability in our society is becoming increasingly important, therefore, this work deals with the question:

What are the potentials within the 4 Pillars of the EU Strategy for the Danube Region for sustainable development in Central and Eastern Europe?

2. Materials and Methods

The distribution of work tasks was based on the pillars of the EUSDR and in further consequence according to their respective Priority Areas (PA). Not all PAs were addressed in this paper with equal intensity as the authors have set priorities by interest.

Literature research

The literature research was performed using the bottom up method. Adopting this strategy of information processing and knowledge ordering, the authors started the research process with the key term “Danube Strategy” and broadened the research gradually. As references for this research university libraries and the Internet were used. These sources provided different kinds of information such as books, academic articles, newspaper articles and official web pages. As a main source the authors used official EU communication papers like for example the EUSDR Action Plan.

In this Action Plan, priorities are identified and responsibilities for the implementation of actions are clarified. The Action Plan serves as a EUSDR roadmap and assists with implementations. The projects and actions listed in the Action Plan are not binding but it is intended that they should be implemented once they are part of the plan.

Interviews

Interviews with eight experts of the chosen main focuses were performed. Due to the many different and specific questions the authors did not prepare a uniform manual for all interviews. Thus a separate manual was created for each interview, respectively for each priority area. First results gained from interviews where crosschecked in the subsequent interviews and discussed in the project group. Summarised major findings and information about the experts interviewed are presented in coloured “interview boxes” at the end of each relevant PA.

The interview partners are enlisted below, with the institution they are representing in brackets:

- DI Markus Simoner (Via Donau)
- Mag. Thomas Hartl (Via Donau)
- Prof. i.R. Werner Kvarda (ACADEMIA DANUBIA)

- Prof. Herwig Waidbacher (BOKU)
- Dr. Christian Baumgartner (Naturfreunde)
- Prof. Martin Gerzabek (President DRC)
- Dr. Johannes Eigner (BMEIA)
- Dr. Erhard Busek (IDM)

In addition various relevant conferences related to the EUSDR were visited (e.g. the “Danube Rectors Conference” or the “Forum Zukunft Tourismus”). On these conferences more than one interview partner has been found, which was amongst the intentions for the attendance in the first place.
The progress made in the intensive literature research and the conducted interviews was discussed at weekly peer meetings, where the group was brought up to date and set the next targets and deadlines.

Study design
The arrangement of our results is based on the structure of the EUSDR, which served as a red thread. At first the EUSDR and its framework and furthermore details of the key topics within the chosen PAs are presented.
As said before, priorities were set by interest. All 4 Pillars have been covered but within these especially the following PAs were focused on:

PA1 To improve mobility and multimodality
PA2 To encourage more sustainable energy
PA3 To promote culture and tourism
PA4 To restore and maintain the quality of waters
PA5 To manage environmental risks
PA7 To develop the knowledge of society through research, education and information technologies
PA10 To step up institutional capacity and cooperation

Finally the results face a discussion where potentials for sustainable development, synergies and conflicts are highlighted.

3. Results

This chapter presents the authors' major findings, starting with general insights on the funding of the EUSDR followed by more detailed information about the four Pillars of the strategy.

The European Strategy of the Danube Region (EUSDR)

The European Strategy of the Danube Region (EUSDR) was designed to strengthen collaboration and communication within several issues along the Danube River and profit from synergies between them, pursuing the long term objective of a region that gets in line with other well developed regions of the EU.

EUSDR Development process

The strategy's first "trigger pulse" happened in October 2008 in Brussels at a conference of the European Commission. Danuta Hübner, Commissioner of Regional Policy at that time, suggested a Strategy for the Danube Region, similar to the European Strategy of the Baltic Sea Region (EUSBSR) (Europa press releases RAPID 2008). The European Council instructed the European Commission in June 2009 to develop the Strategy around the Danube.

Until December 2010 a communication of the EUSDR and a corresponding Action Plan has been prepared. In February 2011 Johannes Hahn, Commissioner of Regional Policy, nominated "Priority Area Coordinators" (of which more later) for every special subject within the EUSDR. After the EU Council of General Affairs had adopted the conclusions in April 2011, the European Council ratified the EUSDR in June the same year. Since then the implementation is ongoing (INTERact 2011).

EUSDR Contents

The EUSDR faces challenges from dissimilar fields like mobility, energy, environment, risk management, socio-economics, and security (European Commission 2010b).

Similar to the EUSBR, the EUSDR was classified into "Pillars", which are the major issues and "Priority Areas" (PA), which name the special subjects within the Pillars. As to see in table 1, the strategy implements eleven PAs within 4 Pillars. In fact there are 12 special subjects, because PA1 has been split into "a" and "b" (European Commission 2010a).

EUSDR Coordination

At policy levels the EUSDR is coordinated by the EU Commission. A high level group of all participating states is assisting. Every PA is coordinated by two participating states each, with a EU member taking the lead. Priority Area Coordinators (PACs) of these states are responsible for the implementation of actions into concrete projects. Concerning the evaluation of proceedings the Commission is working together with the PACs and other stakeholders. Annual forums are arranged by the Commission (European Commission 2010b). Table 1 shows the coordination of the Pillars and the coordinators for the PAs.

Table 1: EUSDR - Coordination of the Pillars, PAs and PACs

(OEROK no date, modified)

Pillars and Priority Areas	Priority Area Coordinators
(A) Connecting the Danube Region	
(PA1) To improve mobility and multimodality: (a) inland waterways, (b) road, rail and air links	(a) Austria, Romania (b) Slovenia, Serbia
(PA2) To encourage more sustainable energy	Czech Republic, Hungary
(PA3) To promote culture and tourism: people to people contacts	Bulgaria, Romania
(B) Protecting the environment in the Danube Region	
(PA4) To restore and maintain the quality of waters	Slovakia, Hungary
(PA5) To manage environmental risks	Romania, Hungary
(PA6) To preserve biodiversity, landscapes and the quality of air and soils	Germany (Bavaria), Croatia
(C) Building prosperity in the Danube Region	
(PA7) To develop the knowledge of society through research, education and information technologies	Serbia, Slovakia
(PA8) To support the competitiveness of enterprises	Germany, Croatia
(PA9) To invest in people and skills	Austria, Moldova

Pillars and Priority Areas	Priority Area Coordinators
(D) Strengthening the Danube Region	
(PA10) To step up institutional capacity and cooperation	Austria (Vienna), Slovenia
(PA11) To work together to promote security and tackle organised and serious crime	Bulgaria, Germany

The Premise of 3 NOs or 3 YES

The EUSDR follows a conception of no special treatment by the EU Commission and focuses on already existing frameworks.

NO new EU funds – YES to better alignment of funds

Only still existing funds should be used in a more efficient way.

NO new EU legislation – YES to better coordination of legal instruments

EU laws are set for EU 27, not for single macro-regions. National laws can be modified if it is accepted.

NO new EU structures – YES to better use of existing structures and new ideas

Actions should be operated through already existing institutions.

(Busek 2011)

3.1. Funding of the EUSDR

Concerning the financial side of the EUSDR it is clearly stated that no new funds will be provided, moreover financial neutrality was set a condition by some EU Members for their approval of the strategy. Still there are several possibilities of funding already established by the EU and available to (at least) the EU countries in the Danube Region.

Funding for 2007-2013

Essential instruments of EU funding in this respect are the European Regional Development Fund (ERDF), the Cohesion Fund (CF) and the European Social Fund (ESF). The Funds provide a total sum of 347 Billion Euros for the period of 2007-2013, representing 35.7% of the total budget available in the EU (European Commission 2010b).

As a matter of fact these financial means are only available to EU member states, whereas candidate states and potential candidates, like Croatia and Serbia, have to apply for funding from the Instrument for Pre-Accession (IPA) and/or the European Neighbourhood and Partnership Instrument (ENPI). Another possibility for the aforementioned non-EU countries, especially for countries of the Western Balkan, is to gain grants and loans from the Western Balkan Investment Framework (WBIF). The Neighbourhood Investment Facility, along the lines of the WBIF, is engaged in Ukraine and the Republic of Moldova (European Commission 2010b).

There are further financial instruments to be found on the website of the EUDRS, including JEREMIE (access of SMEs to microfinance), JESSICA (urban development) and JASPERS (technical assistance), designed for joint support, or special areas of investment like LIFE+ (environment) or TEN-T and TEN-E funds (transport/energy).

Aside from EU funding there are several international financial institutions such as the European Investment Bank (EIB), the European Investment Fund or the European Bank for Reconstruction and Development (EBRD) possibly to be involved (European Commission 2010b).

The Action Plan includes a rough overview of potential financing for each and every pillar of the EUSDR at the beginning of the respective chapters. Table 2 shows available resources provided by the Structural Funds in the current planning period of 2007 – 2013 (not only for the Danube Region but the whole EU area):

Table 2: Examples of financing covering the Region
(European Commission 2010a)

Budgetary Item	Amount in billion EUR
Transport	24,8
Energy	3,0
Tourism	6,7
Environment	19,5
Research, innovation, entrepreneurship	13,9
Information	3,6
Human capital	13,9
Inclusion	7,6
Technical Assistance	3,4

The DG Regio states on its website an amount of around 100 billion Euros for the Danube Region. In the authors' reconstruction this sum can be derived from the total financial allocations for the programming period of 2007-2013 of all 8 participating EU members providing some 122 billion Euros in total (European Commission 2012). These financial resources are already earmarked for special purposes and can be obtained through project proposals either directly with the DG Regio or the respective national institution in charge. The complete table showing all 27 EU member states and their yearly financial allocations can be found on the DG Regio website (European Commission 2012).

Funding for 2014-2020

By the end of the programme period of 2014-2020 the Europe 2020 targets should have been realised. The European Commission already published its Proposals for Legislation for the future EU Cohesion Policy of 2014-2020. To contribute to the achievement of the intended goals by 2020 the European Commission intends an investment of 376.6 Billion Euros in total

(European Commission 2012), Table 3 shows a comparison of the ERDF, the ESF and the CF budgets for the current and the future programming period.

Table 3: Comparison of Budgets for EU Cohesion Policy Funds
(European Commission 2010)

Fund	Budget 2007-2013 in billion EUR	Budget 2014-2020 in billion EUR
ERDF	201	183,36
ESF	76	84,00
CF	70	68,70

Final Legislation is not expected to enter into force before 2013, still leaving some time to adjust funding requests for projects under the EUSDR. As funding is limited further prioritisation is necessary thus increasing competition among project proposals. Projects with long planning stages need to be identified and prepared without any further delay in order to secure potential EU funding.

3.2. Pillar A - Connecting the Danube Region

Pillar A focuses on the connection of the Danube Region. The Action Plan for the EUSDR sets three PAs (European Commission 2010a):

- PA 1: TO IMPROVE MOBILITY AND MULTIMODALITY
- PA 2: TO ENCOURAGE MORE SUSTAINABLE ENERGY
- PA 3: TO PROMOTE CULTURE AND TOURISM, PEOPLE TO PEOPLE CONTACTS

In each area the EUSDR states to set actions to improve connectivity by optimising coordination in infrastructure works and transport, by the sharing of knowledge on sustainable energy and by cooperation and promotion concepts of tourism in the Danube Region. Table 4 lists the expenditures budgeted by the Structural Funds in 2007-2013 affecting Pillar A.

Table 4: Expenditures budgeted by the Structural Funds in 2007-2013 for Pillar A
(European Commission 2010a)

Budgetary Item		**Amount in billion EUR**
Transport		**24.8**
	Roads and motorways	13.5
	Railways	8.5
	Ports and inland waterways	0.7
	Multimodal nodes	0.5
	Airports	0.2
	Other (urban, cycle, etc.)	1.4
Energy		**3.0**
	Energy efficiency	1.5
	Renewable energy	1.2
	Other (electricity, gas, etc.)	0.3

Budgetary Item		Amount in billion EUR
Tourism		**6.7**
	Urban and rural regeneration	3.0
	Natural & cultural heritage	1.4
	Cultural & touristic services	1.2
	Cultural infrastructure	0.6
	Other	0.5

3.2.1. Development of waterway transport

The first PA of Pillar A issues mobility and multimodality covering rail, road, waterway transport and air links. The EUSDR focuses not only on the technical aspects and infrastructure, it also sets the target to improve the organisation and connection of transport systems. Under the maxim of multimodality the EUSDR aims to connect multiple modes of transport like road, rail and navigation in intermodal centres like ports. As sustainable mobility is the clear objective of the EUSDR, the authors of this paper focus on inland navigation, as it has a relatively low environmental impact. Together with the Rhine and the Main the Danube connects eleven countries and is an important transport corridor between the North Sea and the Black Sea and represents the backbone of the Danube Region (European Commission 2010a).

3.2.1.1. State of the art

The Austrian Danube corridor is the fastest growing freight traffic corridor in the country. The cross-border freight traffic in the Austrian Danube corridor has increased from 28.3 million tons in 1990 up to 80.9 million tons in 2007, which means an increase of 185.9% in that period. In 2009 over 50% of the cross-border freight traffic was transported on the street, only around 14% on the Danube waterway (Hasenbichler et al. 2011).

In 2010, 11 052 080 tons of goods were transported on the Austrian part of the Danube, which

corresponds to an increase of transport volume by 18.6% respectively 1 730 270 tons compared to the previous year (Statistik Austria 2011a).

The Danube is part of the Trans-European Transportation Network (TEN-T). Concerning building missing links and removing the bottlenecks in the European transport infrastructure, as well as to ensure the future sustainability of the transport networks, it will play a central role in the achievement of the objectives of the Europe 2020 Strategy. Nevertheless, compared to the Rhine, inland navigation on the Danube is only used between 10% and 15% of the river's potential (European Commission 2010a).
All infrastructure projects, except those in the Ukraine are EU co-financed, either through the TEN-T or in the case of Romania and Bulgaria by ISPA (Instrument for Structural Policies for Pre-Accession) (Hasenbichler et al. 2011).

From Kelheim (Germany) to Sulina (Romania), on nearly 2 415 km, the Danube is navigable for international freight. Given that inland navigation emits 3,5 times less CO_2 than trucks and Austria lies in the middle of the Rhine-Main-Danube Canal (connecting the North Sea to the Black Sea on a length of 3 500 km), its importance and potential for the country and the Danube Region becomes evident (European Commission 2010a).

A typical pushed convoy, consisting of a thrust vessel and four non-motorized pushed barges can operate nearly on the whole Danube between Romania and Passau (Germany). It has a total working load of approximately 7 000 net tons and can carry the same volume at a time as 175 railway wagons or 280 trucks, as shown in Figure 2.

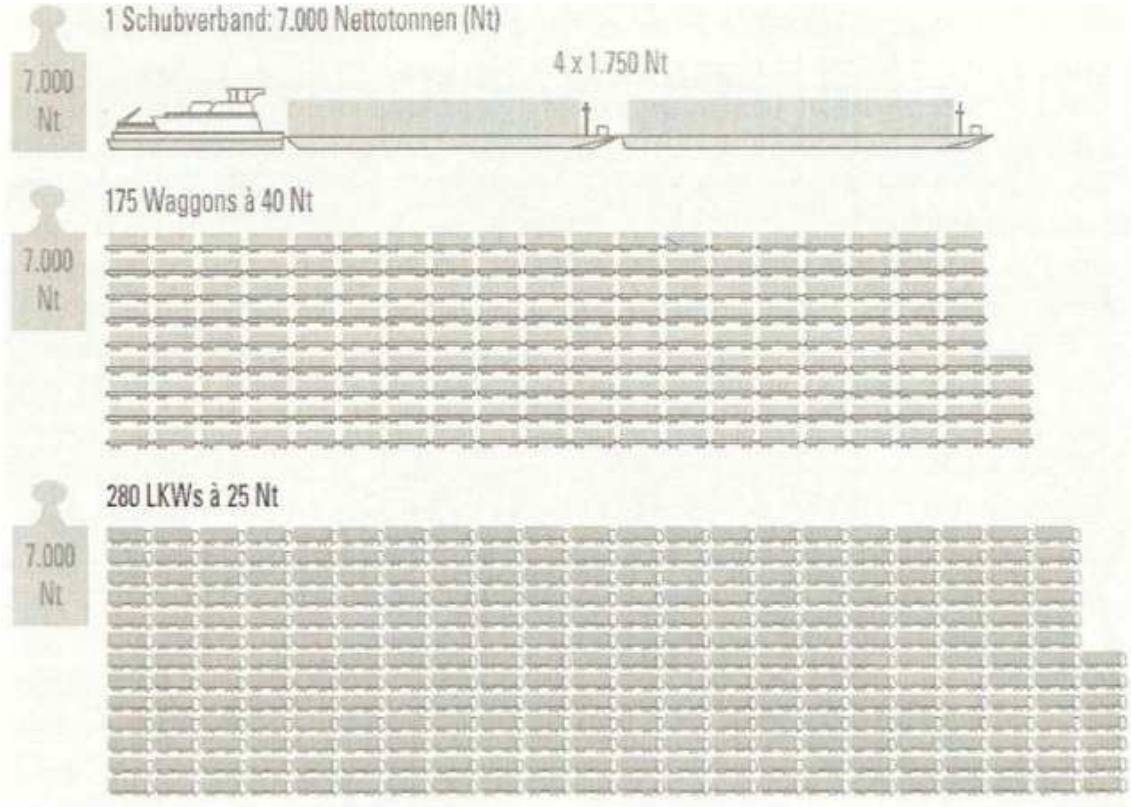


Figure 2: The mass transport capabilities of a typical pushed convoy, consisting of a thrust vessel and four non-motorized pushed barges (Wiener Wasser Almanach 2010)

Not only the loading volume of such vessels is far higher, also if the gas consumption is compared, inland navigation is much more effective:
"Average self-propelled vessels consume up to 0.013 litres per ton-km (l/tkm), whereas modern vessels can achieve gas oil consumption as low as 0.0044 l/tkm. Compared to rail (0.0095 l/tkm) or road transport (0.0292 l/tkm), average fuel consumption for inland navigation (0.0083 l/tkm) is relatively low" (NAIADES 2011).

No shipping charges are levied on the Danube. In the Belgrade Convention 1948, regarding the regime of inland navigation on the Danube, the free navigation on the Danube for all vessels under the flags of Danube Riparian States was committed (Via Donau 2010a).
It is no coincidence that the priority area coordinators for inland navigation are Austria and Romania. Both countries share a history of cooperation, reaching back a decade. And both

countries have major interests to improve the inland navigation infrastructure and use the future potentials.
According to the EUSDR Action Plan, actions and projects aim to complement and build on on-going activities and are in line with the goals of the European Deed Programme for Inland Waterway Transport (NAIADES). The European Commission implemented this programme in 2006 to improve the frame conditions and the competitiveness for inland navigation. Beside Austria developed a national Action Plan for inland navigation in 2006 (Hasenbichler et al. 2011).

An important partner within the coordination of the priority field in Austria is the technical secretariat of the Austrian priority area coordinator, Via Donau. Via Donau was founded in 2005 by the Austrian ministry for traffic, innovation and technology with the purpose to obtain and develop the Danube waterway. Via Donau ensures the availability of an efficient and reliable waterway infrastructure. This includes the creation and preservation of fairway parameters, the maintenance and repair of the river banks and the on-going provision of hydrographical and hydrological data (via donau 2010b).

3.2.1.2. Arrangements for the development of waterway transport

In the following section the authors give an overview of the arrangements for the improvement of the waterway transport on the Danube, set by the EUSDR Action Plan.

EU – Targets
According to the EU Commission (European Commission, 2010b), possible main EUSDR targets for inland waterway transport on the Danube are:
- Elimination of existing navigability bottlenecks on the river, so that ships of the category VIb can operate all year till 2015 (category VIb refers to pushed convoys and inland waterway vessels with a draught of up to 2.5 m).
- Development of efficient multimodal terminals at Danube ports to connect the waterways with road and rail by 2020.
- Support the Europe 2020 strategy (increase the cargo transport on the Danube river up to 20% compared to 2010.
- Achievement of national energy and environmental targets (EU 2020).

- Shorten the travel time for passengers between major cities.

In general that means an improvement of the potentials for sustainable waterway transport including a better management, equipment and education for qualified staff. Especially for the achievement of environmental targets, inland navigation is seen as an important alternative or addition to road and rail transport systems.

3.2.1.3. Political and legal conditions

There are several political and legal conditions for the development of the waterway transport on the Danube. As the standards are set in different documents, not all of them set the same parameters for the conditions of the waterway transport. According to Weller et al. (2002, 108) the conditions state “the depth of the navigation channel, the draught of the vessels, the width of the shipping lane, the channel curve radius, the lock dimensions, the minimum height and width under bridges and cables”.

The *Convention regarding the Regime of Navigation on the Danube* (also known as Belgrade Convention) signed in Belgrade on 18th August 1948 constitutes the basis of the international navigation on the Danube.

The Belgrade Convention orders the 11 Member States Austria, Bulgaria, Croatia, Germany, Hungary, Moldova, Slovakia, Romania, Russia, Ukraine, and Serbia to provide free navigation on the Danube and to keep the national sections of the river in a navigable condition. In addition they are obeyed to improve, and not hinder, the navigation conditions on the river (Danube Commission 2010).

The members of the Belgrade Convention also established the Danube Commission to supervise and observe the development of the navigation conditions. The Danube Commission is located since 1954 in Budapest and has following primary tasks:

- 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 and making recommendations to the Member States in respect of the execution of the above mentioned works, with consideration of the technical and

economic interests, plans and possibilities of the respective States (Danube Commission 2010).

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 timeliest issues of European inland waterway transport (Budapest, 11th September 1991), as well as the *Declaration of the Rotterdam Conference on Accelerating Pan-European Cooperation Towards a Free and Strong Inland Waterway Transport* of 5-6 September, 2001.

In 1988 the Danube Commission announced the *Recommendations regarding the establishment of standards for the navigation channel as well as for the river engineering and other development of the Danube.* The Danube Commission's recommendations determine for example the minimum depth of the navigation channel and the lowest impounded water level and are not legally binding.

European Agreement on Main Inland Waterways of International Importance (AGN) established by the UNECE in 1996 is negotiated by government representatives and is legally binding for countries which ratified or acceded to it (UNECE s.a.). The AGN defines technical service standards, which need to be reached. Differently from the Danube Commission's recommendations these data concern not the depth of the navigation channel, but the draught of the vessels. These standards were confirmed by the European ministers of transport, the European Parliament and the European Commission in the *Declaration of the Rotterdam Conference on Accelerating Pan-European Co-operation Towards a Free and Strong Inland Waterway Transport* 2001 in Rotterdam (Weller et al. 2002).

Aside from laws and provisions regarding waterway transport, also commitments for the protection of natural areas set the frame for the further development. Firstly there are the different laws of the national parks along the Danube river and furthermore several EU-wide commitments (e.g. Natura 2000, EU Water Frame Directive, Danube River Convention, Ramsar Convention, Convention of Important Bird Areas) (Weller et al. 2002).

3.2.1.4. Measures

As already mentioned the actions and projects within the EUSDR are in line with the goals of the European Action Programme for Inland Waterway Transport (NAIADES).
NAIADES contains a comprehensive package of measures. The implementation of the project in the period 2008 to 2012 is accompanied by PLATINA (Platform for the implementation of NAIADES), which is accompanied by 11 European countries and coordinated by Via Donau. Up to now concrete results of PLATINA are for example a concept for training and education standards for inland navigation or a good practice guide for sustainable waterway planning (NAIADES 2011).
The implementation of NAIADES as a measure of the EUSDR Action Plan aims particularly to manifest inland navigation in the transport policies of all Danube countries and the national coordination with other relevant policy fields, particularly the environment (Natura 2000, Water Framework Directive, etc.) and the connection to the following programme for 2014 to 2020 (Hasenbichler et al. 2011).

Possible draught and the overhead clearance of the bridges are the main limitations for inland navigation on the Danube (Weller et al. 2002). In Austria the most important decisive factors are limited lock dimensions and the navigable depth (Simoner 2011, oral Information). To overcome these and other limitations various measures are necessary. These measures are not only certain river engineering measures, there is also potential for improvement e.g. in the:

- Ports as multimodal logistics centres.
- Education and training of personnel for the Danube navigation.
- Modernisation of the Danube fleet.
- Adaption of existing vessels.
- River Information Services.

Strengthening of a sustainable multimodal goods traffic on the Danube

As economic growth is corresponding with the growth of goods traffic one main objective of the Danube Strategy is the improvement of the conditions for transport. As the Danube is seen as a sustainable and efficient transport corridor, the EUSDR states want to improve the mobility

along the river by creating interfaces between vessels and trains in order to minimise the goods traffic on roads. So called multimodal ports are planned to be developed into this kind of interfaces (Haslinger et al. 2011).

Ports as multimodal logistics centres

One of the declared goals of the first pillar connectivity is developing “Multi-modality of transport <and> regional and urban multi-modal transport nodes” as well as “functional linkages between international/national transport routes and regional/local transport and logistics networks” (BMeiA-EU 2009, s.p.).

Multimodal transport needs efficient and well-equipped ports. Beside transfer and storage, ports can fulfil several other customer-services, such as packing, container stuffing, quality controls and sanitation checks. Therefore ports are centres of logistics and have positive impacts on the local economy. As ports connect different transport infrastructures (e.g. waterway, train, road), ports are inter-modal, logistic nodes (Hasenbichler et al. 2011).
The Action Plan gives the task to elaborate the measures for the improvement of the ports to the countries of the Danube River Basin. The national plans are ordered to be reviewed with regard to “their integration into national and local development strategies” (European Commission 2010a, 12).

Education and training of personnel for the Danube navigation

Educated and trained personnel are important for efficient and safe Danube navigation. As the current lack of trained staff requires measures, one of the projects in the EUSDR Action Plan is “to establish cooperation networks for logistics and nautical education focusing on Inland Waterway Transport in the Danube corridor supported by innovative solutions (NELI)” (European Commission 2010a, 14).
NELI aims to improve and harmonize education and training in the field of inland waterway transport in the Danube Region. Concrete results are e.g. a comprehensive eLearning service, a status quo analysis, or the setup of four Information and Training Centres in Galati/Romania, Sisak/Croatia, Enns/Austria and Budapest/Hungary (NELI 2011).

Modernisation of the Danube fleet

The Action Plan contains a request for the modernisation of the Danube fleet. This modernisation aims to improve the economic as well as the environmental performance of the fleet through technical innovation and modernisation of the fleet and an optimisation of the fleets waste management (European Commission 2010a).

Potentials for technical innovation are the improvement of the engines, the propulsion systems, the fuel (e.g. particle filters, low emission fuel, onshore power while docking) the shape of the vessels (e.g. hydrodynamics, optimised dimensions of the vessels) and an ecologically compatible and reliable use of telematics.

EUSDR plans the support of research and development of this modernisation by promoting corresponding projects with funding (Hasenbichler et al. 2011).

An example project for the improvement of the environmental performance of the Danube fleet is WANDA (**WA**ste management of for inland **N**avigation on the **DA**nube) led by Via Donau. Via Donau is ordered to elaborate the existing waste management concepts of the countries along the Danube. Moreover they work on the implementation of pilot actions and the development of a model for the financing of the operating system based on the polluter-pays principle. In this system the producer of pollution is forced to pay for the damage done to the environment (European Commission 2010).

River Information Services

Referring to Hasenbichler et al. (2011) the implementation of River Information Services (RIS) is the foundation for technological modernization of Danube navigation. RIS implies telematic- and information-systems to improve transport safety efficiency and optimize logistics.

This project builds on the ongoing IRIS (Implementation of River Information Services in Europe) projects (European Commission 2010a). IRIS 1 was closed at the end of 2008 after a period of three years. IRIS 2, which was started in 2009, is now in the finishing phase. The IRIS projects are co-funded in the framework of the TEN-T Programme and by the Ministries of Transport of nine EU Member States: Austria, Belgium, Bulgaria, France, Hungary, Romania, Slovakia, the Czech Republic and the Netherlands. Four additional partners are Croatia, Germany, Serbia and the Ukraine (IRIS 2011).

Interview with DI Markus Simoner and Mag. Thomas Hartl

Functions:

- Priority Area Coordinators Inland Navigation (Austria)
- Via Donau: Team Leader Infrastructure Development (Simoner), Infrastructure Development (Hartl)

Date: 17th December 2011

Main points:

- EUSDR as an important political signal, close cooperation with NGOs, e.g. WWF;
- regarding the potentials of inland waterway transport, there will be no quick improvements;
- west-east divide; structural problems in Eastern Europe prevent the progress of various projects;
- relative to road and rail, investments in inland navigation are very low;
- renovation of the Danube, including comprehensive ecological measures, would cost 1-2 billion Euros.

3.2.2. Sustainable energy

Energy is an important topic in the EUSDR. This issue puts an emphasis on the promotion of renewable energy sources (RES) and energy efficiency (EE). RES have no doubt a huge potential to support achieving of a large variety of the goals of a sustained policy.
The development of the energy sector is sustainable if:

Economy
The energy production from renewable resources is encouraged through investment security.
The production is in the long run economically viable and a decoupling of economic growth from energy demand takes place.

Ecology
Energy production causes always and in all forms an impact on the environment. In order to enhance sustainable development, the complex interactions must be explored, understood and carefully attended in planning and implementation. Impacts on the environment are limited by minimum conditions.

Social
An area wide security of supply, especially in rural, poorly developed regions, is achieved at an affordable price. Sustainable development on a broad, cross-border consensus involving all stakeholders will take place.

Sustainable development needs to find compromises between the three pillars of sustainability. Indeed sustainability often starts from ecological challenges, it concerns many issues above environmental politics and aims to strengthen and develop essential social core values. (Minsch 1998)

The most important reasons to promote RES are:

- To contribute to climate protection; to reduce CO2 emissions.
- To strengthen economically underdeveloped regions and to increase regional added value.

- To reduce energy dependence and resource conflicts.
- To increase security of supply.
- To create positive social impacts by increasing the potential for democratization and by generating new (green) jobs.
- To create positive economical effects.
- To avoid the risks of nuclear energy.

RES face several challenges which are related to the entire energy market. Without noticeable energy savings and increased efficiency the positive effects of RES will be lost. Due to the unequal distribution of wind, water and biomass conflicts can raise again. A good example is the growing criticism of biomass in recent years, which is partly due to competition with the food and feed production

Another allegation is that the cultivation of energy crops requires vast areas, it is fertilizer and energy-intensive, and the area is maintained on a pure which leads to negative impacts on biodiversity. Otherwise, the residues of energy production from biomass could be used e.g. press cake from oil-bearing plants, used for the production of biofuels could be used as a protein-rich animal feed. This can modify the area competition for feed production. The mash, which arises in the biogas production and products of combustion processes, could be used as a high quality fertilizer in certain circumstances.

Even though the prices of RES have significantly declined in the last years, they are still quite expensive in relation to fossil fuels. Reasons are mainly still inadequate internalisation of the external costs. This will require policy actions. The policy has to create a political framework to decrease cost differences and increase investment security.

The expansion of RES represents a major challenge to environmental and landscape protection, e.g. through the sustainable production of biofuels, ecological hydro- and wind power plants. Finally, another major challenge will arise to energy networks, since they are not designed to deal with highly fluctuating, decentralized supplies (Hennicke and Fischedick 2007).

3.2.2.1. EU Policies 1993-2011

The EU identified the importance and potentials of RES for a sustainable development early and undertook numerous efforts to promote the use of RES since 1993.

The following list represents a simplified enumeration of communications and actions set in the EU since 1993:

1993 (until 2002) Altener Programme: the first quantified goals to promote renewable energies. These goals do not have legal force, but were seen as important benchmarks (Grubb 1995).

1997 European Commission publishes the White Paper „Energy for the future: renewable sources of energy“. This communication from the European Commission sets out a common strategy and an action plan. Goals are defined directed to achieve 12% of renewables in the EU by 2010 (European Commission 1997). These targets were not legally binding and soon it became evident that they would not be met (EurActive 2007).

2002 Directive 2002/91/EG on the energy performance of buildings.

2003 Intelligent Energy – Europe: continues the Altener Program, which expired on 2002.

2005 Communication from the European Commission, „Biomass action plan“

2006 European Commission Green Paper „A European strategy for sustainable, competitive and secure energy“. In this paper the Commission proposes a common European energy policy. Core objectives are: sustainability, competitiveness and security of supply (European Commission 2006).

2007 Communication from the European Commission: “Renewable Energy Road Map. Renewable energies in the 21st century: building a more sustainable future.“ This paper sets out a long-term vision for renewables in the EU. It proposes legally binding targets (20% renewables by 2020) and a new legislative framework for the promotion of renewables to increase investment security (European Commission 2007).

2007 Lisbon Treaty, article 194: „1. In the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to:
(a) ensure the functioning of the energy market;

(b) ensure security of energy supply in the Union;
(c) promote energy efficiency and energy saving and the development of new and renewable forms of energy; and
(d) promote the interconnection of energy networks.“ (Lisbon Treaty 2007 s.p.).

2009 Directive 2009/28/EG on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC (electricity from renewable sources) and 2003/30/EC (biofuels). The deadline for the member states to present national renewable energy action plans was on 5th of December 2010. This action plans should also have a look on other policies and their effects. The higher the energy savings, the less is required for the achievement of renewable energy (Europa.eu 2010).

2010 Communication from the European Commission: „Energy 2020. A strategy for competitive, sustainable and secure energy.“ The EU set ambitious objectives and targets to be reached by 2020. The member states have to adopt their national targets in the different areas. For energy: greenhouse gas emissions 20% (or even 30%, if the conditions are right) lower than 1990; 20% of energy from renewables; 20% increase in energy efficiency (Eurostat 2011).

2011 EUSDR: The aim of the Strategy is to support the achievement of objectives already defined.
2011 at the Alpbach Talks: „Blackout or Energy boost – How will Europe manage the changeover to a sustainable, ecological and affordable energy system? “ Alexander Karner, Director of the Renewable Energy Austria agency announces the launch of a new Energy Road Map, in which the promotion of nuclear energy is planned. New technologies should make this energy supply safe and provide greenhouse gas-free energy. The new Road Map should be presented end of 2011.

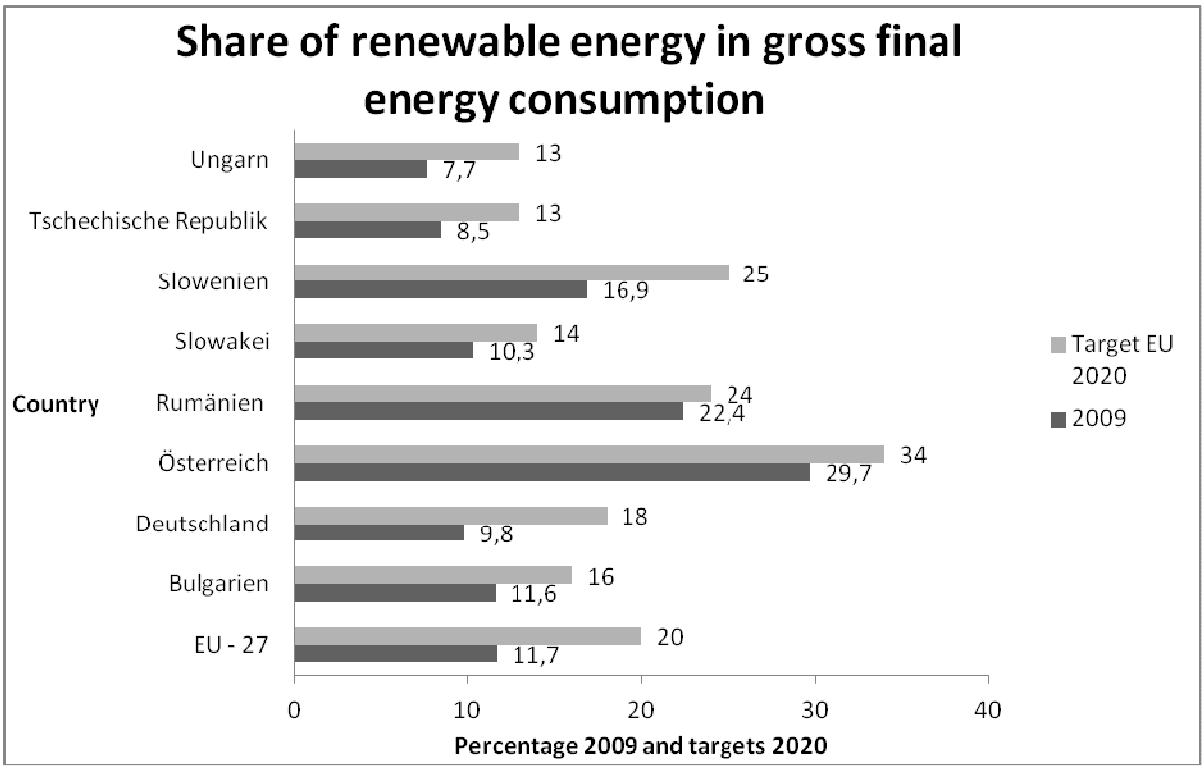
3.2.2.2. Energy and the EUSDR

The quintessence of the EUSDR for the energy issue is that Infrastructure, security of supply, market organisation, unsustainable demand, energy efficiency, and use of renewables are often problematic. Modernising and extending energy networks by implementing the European

Energy Programme for Recovery and by reinforcing the TEN-E network is essential. There needs to be exchange of experience especially for smart grids, smart cities and eco-innovation (European Commission 2010d).

Table 5 gives an overview of the targets for the share of renewables in 2020.

Table 5: Share of renewable energy 2009 and targets for 2020 (Eurostat 2011)



3.2.2.3. Energy efficiency (EE)

Energy efficiency is one of the main priorities with great impact on environmental quality in Danube Region and is one of the most cost-effective ways to secure the energy supply, as well as to reduce emissions of green-house gases.

In their EU 2020 Strategy, the European Union proposed slogan “20-20-20 by 2020”. Accordingly, it aims a 20% increase in energy efficiency, a 20% cut in green-house gases and a 20% share of renewable energy of the overall EU consumption until 2020 (EU-Strategy for the

Danube Region, Austrian thematic contributions 2010). Thus, the Danube countries need to make an effort to promote and work towards reaching this goal and trying to reinforce existing policies. Consistent improvement of policy actions under the Europe 2020 Initiative for a Resource Efficient Europe should lead to low-carbon economy in order to achieve sustainable growth and to secure policy coherence, trade-offs between policy areas and benefit from potential synergies. In Figure 3 the technologies that could reduce global CO_2 emissions from energy combustion are shown. EE is one of the most effective of all technologies, which contribute to the protection of the environment, saving of resources and lead to considerable reduction in energy costs.

The official ”European Commission Action Plan” for 2010 outlines that the whole Danube Region has high potential to improve efficiency in buildings and households, combined power and heat generation facilities and transport.

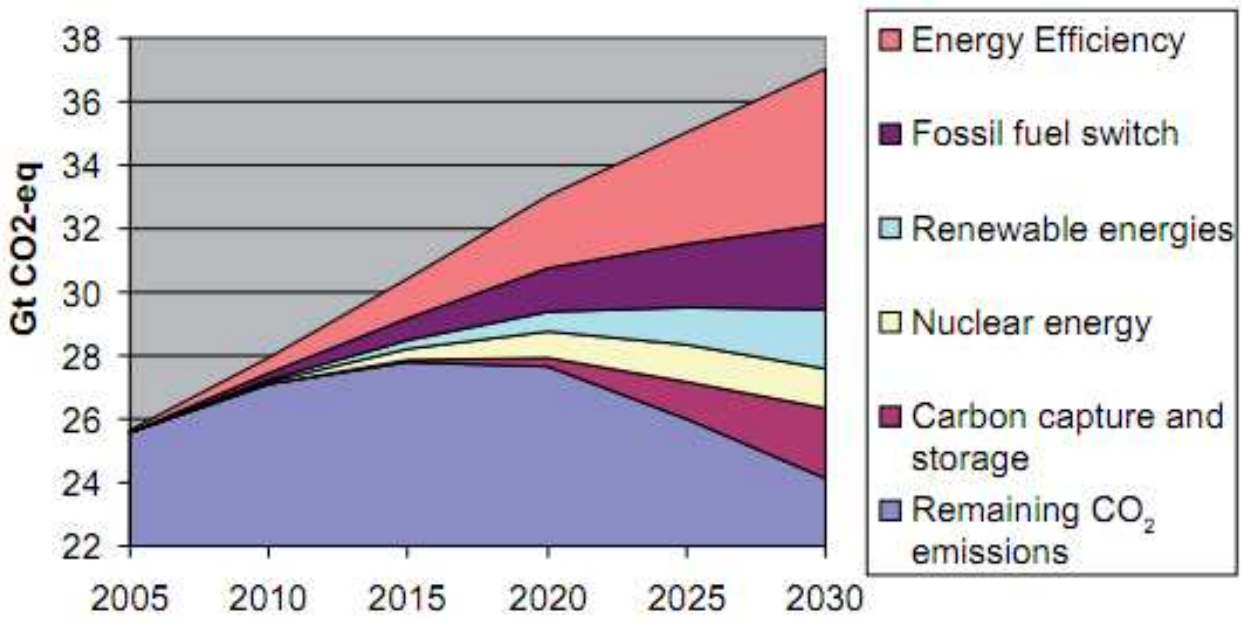


Figure 3: Technologies to reduce CO_2 emissions (JRC-IPTS 2009**)**

Buildings are responsible for 40% of energy consumption and 36% of EU CO_2 emissions. In order to achieve Climate & Energy objectives (European Commission 2010d), there are several influential Energy performance indicators in area of the buildings construction, which may contribute to it, namely:

- The increase of the buildings renovation (private and public)
- Improvement of components used in buildings construction and replacement of fossil fuels, such as oil and gas or their combination with renewable energy resources
- Definition of a minimum performance requirements for new and renovated buildings (measured in kWh/m²)
- Attain the energy standards for very low energy or passive houses and support its financing by governments

The requirement to reduce energy consumption, without influencing productivity, has led to introduction of compact, high-performance heat exchanges in all industrial processes. An additional efficient way is to use centrifugal pumps in all industry classifications. It is believed, that by using these revolutionary energy solutions, 40% of energy could be saved.
Possibilities to increase EE in the transport and mobility include state-of-the-art infrastructure components, lightning concepts and traffic management systems. Furthermore, progress is being made in the use of hydrogen or electricity generated from renewable batteries, fuel cell and hybrid drives. In future, there will be a need for an efficient networking of modes of transport and infrastructure (Energy efficiency made in Germany 2011).
In order to achieve the goals mentioned above and benefit from policy already set up by the EU, the Danube Region should try to implement and promote financing instruments as proposed by European Fund for Southeast Europe (EFSE), covering Ukraine and Moldova, and Green for Growth Fund South East Europe (GGF), first specialized fund to promote EE and RE in Southeast Europe including Turkey.

EE between countries in EUSDR

Austria and Germany already possess considerable experience and know-how and are important market leaders in energy-efficient technology. This already accumulated knowledge and experience could be exploited through cooperation by other countries in order to introduce more efficient use of energy in the whole region. As proposed by the EUSDR Action plan 2010, promotion of EE could be set up through networks of best practice, trade-offs between polices and connections with financial institutions, for example by trading of emission allowance. Regarding EUSDR, Czech Republic and Hungary are the current coordinators of PA2, which contribute in promoting proposals mentioned above.

In Germany, more than 85% of energy consumption of private households is used for heat and warm water, which means that the potential of energy savings is huge. The old buildings need three times more energy than the new ones. Most of the energy loss is due to the old windows, bad insulation of buildings, doors and roofs. Germany as a leader in promotion of EE and save energy supply has recognized these as the most significant reasons that lead to inefficiencies and waste of energy. In order to raise awareness regarding these issues, the German Federal ministry of economics and technologies has set up the informative platform called "Energy efficiency made in Germany" (http://www.efficiency-from-germany.info).

Another example that other countries should look up to is the adoption of the "Energy Concept for an Environmentally Sound, Reliable and Affordable Energy Supply" by German Government and Federal ministry of economics and technologies-Publications in 2010. The approach of this new energy strategy, which should completely implement until 2050, is two-sided. First, it gives clear guidelines for increase of energy efficiency that lead to reduction of energy demand, and second, it supports covering of rest-demand with alternative green energy sources. Nuclear energy was seen as a bridging technology, however as a result of the Fukushima disaster the country is planning to abandon the use of the nuclear power in the future.

In Austria most of the efficiency improvements were achieved in the households sector. Additionally also transport and industry have contributed to a significant improvement in EE. According to Odyssee[1], the improvement of EE in households sector was twice as high as in the EU. Unlike Germany, Austria doesn't have any long-term goals. In 2002 the implementation of the EU-Renewables Directive 2001/77/EC, has been issued in Green Electricity Act (Ökostromgesetz 2002). In order to achieve EU 2020 strategy, Austria has set three pillars: energy efficiency, renewable energy and security of supply. Regarding energy strategy, Austria must set up targets to reach these goals and agenda beyond 2020.
In relation to the situation in Hungary, the government introduced non-paper (Danube Civil Society Forum 2011c), where energy efficiency of building is listed as of regional importance. Accordingly Hungary aims to support strategic goals dealing with the energy inefficiencies. The current National Energy Policy was adopted by the Government on 17th April 2008 for the period

[1] Odyssee is an online database of reference on energy efficiency monitoring for Europe (27 European countries plus Norway and Croatia).

of 2007-2020. The main principles of the new Hungarian energy policy are security of the energy supply and sustainable economic development. The EE plan, as part of the Hungarian National Energy Policy, is to support energy-efficient and environmentally-friendly buildings, technologies and transport. However, not so promising is the aim of Hungary to expand the life cycle of nuclear power.

On the other hand, the Czech EUSDR non-paper does not even mention the energy efficiency. Though the official state energy policy until 2030 propose the increased in energy efficiency as the key goal for Revised Green Scenario. The Czech Republic has also set the goal to increase nuclear power with two possible facilities in the future.
Serbia as non EU country and part of Danube region has also set Energy strategy document until 2015. The Serbian Efficiency Agency (SEEA) is in charge for the improvements in efficient use of final energy. SEEA proposes changes in legislation, technical and other regulations that may contribute to an increase of EE by implementing programs for energy saving. Under the circumstances of traditionally wrong attitudes toward rational consumption, the Agency has the particularly important task of providing information regarding the importance of energy saving to the public and their education.

Therefore, it can be said that what all diverse Energy policies have in common is the promotion of EE. Consequently, it is important to obtain a clear political commitment of all Danube countries and develop a stable legal framework, as proposed by Austrian non-paper (Danube Civil Society Forum 2011c). Regarding nuclear energy, respect for the high levels of safety established must be shown, especially in cases when the cooling waters primarily come from the rivers (European Commission 2010a).

3.2.2.4. Securing save energy supply

EUSDR must obtain reasonable balance between safe and secure energy supply and sustainable development and ecological respect.
In order to secure energy supply two steps are important:

- Energy infrastructure
- Energy network

Regarding energy infrastructure it is necessary to coordinate long-term infrastructure policies as well as national strategies like power plants, grids, pipelines and national interconnectors. Hence the EUSDR plays an essential role as a transit corridor for energy supply especially from countries of the Black and Caspian Sea Region and Middle East. In addition, the Region is vulnerable regarding safe energy supply, as was demonstrated in 2009 when the gas supply from Ukraine was cut. Therefore, the realisation of the Nabucco Gas pipeline and proposed South Stream pipeline, connecting Constanta in Romania and Trieste in Italy, are the most important energy infrastructure projects to strengthen Europe's security of supply. Nabucco is the East-West gas pipeline, connecting Caspian Sea via Turkey to Austria (European Commission 2011c).

Additionally, investments in the infrastructure are necessary, most importantly for integrating the Danube Region into the Trans-European Energy Networks (TEN-E). The objectives of TEN-E are interconnection, interoperability and development of trans-European networks for transporting electricity and gas (European Commission 2011d). These play essential role in operation of internal energy markets, for consumers who should have access to higher-quality services and a wider choice as a result of the diversification of energy sources, at more competitive prices. The interoperability plays a crucial role in ensuring the security and diversification of supply through connections with third countries.
However, the EUSDR energy projects should be coherent with Energy Community projects, as they have the goal of extending EU internal market to South-East Europe (European Commission 2010a).

The EUSDR should also give support for realisation of regional projects as liquefied-natural-gas (LNG) storage in Croatia, Rumania, Bulgaria, the long distance transport and better integration of electricity transmission in Hungary, Croatia, Bulgaria and modernisation of the oil pipeline.
Hence, fossil fuel sector should be integrated in the strategy, as a transitional plan. Some countries have a significant number of employees in this industry, for example coal mining in Bulgaria and Serbia. Therefore, local, alternative, decentralized power should be developed for these countries, using available renewable resources (Popovici 2011).

Fragmented markets lead to higher costs and reduced competition. Thus the countries in the Region should try to establish more functional, regional markets with decentralised use of

renewables. Opportunities in decentralised supply of energy are: significantly lower transmission losses, independence in energy security, diversification of energy sources, job creation and focus on regional energy sources. In addition, they all have an important impact on social wealth and give noticeable support for rural and isolated communities that are suffering from energy poverty.

Energy network should exist on collaborations between energy agencies, which are promoting sustainable energy and best practice, scientific partners and member countries in order to secure safe energy supply. The energy decisions of any one member have an immediate impact on other members.

The energy sector is mostly dependent of the government financial and legislative support. In order to achieve better use of energy sources, governments should promote new revolutionary methods for attracting private sector investments in this area. Only through higher profitability in the sector of renewable energy, we could expect more competition and additional investments in renewable energy sources as well as research and development in innovative ways of energy production. A suggestion for regional energy agencies of different countries is to introduce regional “Danube energy pass” for all companies interested in investing in energy sector of Danube Region. The “energy pass” would enable easier access of companies to different regional energy markets regarding necessary legal requirement and other differences between countries. This could make the energy sector in the region more attractive, contribute to the better use of energy, improve the environmental quality and become motor of economic growth in next decades.

Energy cooperation is critical for the success of the strategy. All of the goals mentioned above lean strongly towards promoting the sustainable development, as they are committed to working very closely together to build more efficient and effective progress in the EUSDR.

Interview with Prof. Werner Kvarda

Functions:

- O.Univ.Prof.i.R. Dipl.-Ing. Dr.rer.nat. at University of Natural Resources and Life Science, Vienna.
- Executive Committee Chairman of ACADEMIA DANUBIANA - Verein zur Förderung einer nachhaltigen Entwicklung und Ökologisierung im Donauraum; Institute of Soil Research (IBF)

Date: 13th December 2011

Main points:

- Central coordination office for the multiplicity of projects related to sustainable energy does not exist; it is organized by experts on federal as well as on the provincial level Strategy can count on new financial support in 2014.
- Another expert Professor Winfried Blum, stated implementation of the strategy, the strategy should use the bottom-up method for implementation in the region, which means good, simple structure, for example land use and aquatic liability where everything is beginning and ending, as the first step to find opportunities for every country.
- Presentation of ACADEMIA DANUBIANA is an example of project within the EUSDR Action Plan; Permaculture summer school.
- Awareness is rising to become the basis for change towards more sustainable thinking and acting.
- So far, no substantial effects of the EUSDR are visible; maybe it's too early for an assessment.

3.2.3. Promotion of culture and tourism

The natural and cultural diversity that makes the Danube Region quite unique could be a great chance for tourism. But this diversity is also a big challenge. Economic, political and cultural differences must be overcome to achieve a transnational cooperation in tourism.

When focussing on tourism a West-East divide as in many other fields is highly visible. Germany and Austria have a very good sophisticated tourism management and established the Danube River already as a Danube Brand. In Eastern countries like Romania, Bulgaria and Slovakia there is little tourism friendly infrastructure and only a few tourism services. Therefore objectives of the EUSDR are to boost tourism, build an infrastructure for sustainable tourism, improve tourism services and develop intercultural dialogue. There are some more aims written down in the Action Plan of the European Commission, but in this work the focus is set on developing sustainable tourism, cross-border tourism in the region of the Danube Delta and the promotion of cultural tourism. These focuses are investigated on the basis of concrete projects for their potentials in the Eastern countries of the Danube Region (European Commission 2010a). Priority Area Coordinators (PACs) for culture and tourism are Romania and Bulgaria.

Danube Tourist Commission defined in 1970 a tourist Danube Region consisting of the zone 70 km left and right of the stream. This area is also considered in this paper (Danube Tourist Commission; Zolles & Edinger GmbH 2011).

3.2.3.1. Development of infrastructure for sustainable tourism

The World Tourism Organization defines sustainable tourism as "tourism that leads to the management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems." (Institute for Tourism 2000, 1).
To promote sustainable tourism, a corresponding infrastructure and well-educated people in the tourism region are needed. Under this topic, the European Action Plan sets two actions, which

are “To promote sustainable tourism” and “To improve planning and infrastructure for tourism” (European Commission 2010a, 29). Main focuses are set on the development of hiking and cycling trails, Danube shipping, bus and train connection and to optimise their coordination.

Transnational biking routes

In 2007 nearly 21 million people in Germany used their bike for holiday activity. 62% of those German bicycle tourists spent 1 000 and more Euros per trip. Also in Austria biking is the most popular activity after swimming, according to a survey conducted in summer 2006 in Upper Austria (Zolles & Edinger GmbH; Die Donau 2010*).*

Some transnational projects were created a few years before the EUSDR, the Danube Trail and the Iron Curtain Trail below are considered as representing examples. Both are well developed and in great parts promoted, like in Germany, Austria and a part of Hungary in contrast to the countries further downstream (Cramer 2011).

The Danube Trail for example is very popular between Passau and Vienna. ARGE Donau Österreich established the first cycle counting on the Danube trail in 2010. For this, on 17 places in Austria professional cycle counters were fitted. The results are that 437 000 persons use the cycle path per year and about 38 000 drove the whole way from Passau to Vienna. The total turnover of the daily outgoings was 71.8 Million Euros (OÖ Presseclub 2011)*.* Germany and Austria want to improve the security and quality of the route, basically to increase the incomes, but in general, the route is already well established.

From Bratislava to the Iron Curtain the track is well tagged, but in Croatia and Serbia the route runs on public roads and there is rarely information material for the tourists. In Romania and Bulgaria the trail is only of limited use for tourists, no or only sparely information is given, cycling is only possible on public roads, which are not very busy in the countryside, but can be very dangerous in the cities. Romania is trying to signpost the route while Bulgaria not even provides any information on its websites of tourism.

The most important things to be done are the extension of this route, developing a tourism infrastructure along the way and create an international Internet platform for information. Important for the route is the roadway arrangement, it has to be in an attractive landscape and should cross through the cities for sightseeing. Security and correct signposting must be ensured, too. The Danube Tourist Commission recommends standards for infrastructure. Repair

options and accommodations should be given every 35 km and board and lodging options every 10-15 km *(*Zolles &Edinger GmbH; Die Donau 2010*).*

Since the Danube cycle path is so successful in Germany, Austria and Hungary, the Deutsche Gesellschaft für internationale Zusammenarbeit (GIZ) has set the development of the path from Budapest to the Black Sea as the first key aspect for the promotion of tourism (Die Donau 2010).

The Iron Curtain Trail is another transnational route through the Danube Region. It is a 7 000 km long route through 20 countries along the Green Belt, the former death strip from the Barents Sea to the Black Sea (Cramer 2011). The Green Belt is meant to be a symbol for transborder cooperation for sustainable tourism and nature conservation.

After the fall of the Iron Curtain, many small regional cycle-tourism-projects were created in Germany, Austria, Hungary and the Czech Republic, even some in the Balkan States. The Iron Curtain Trail connects the existing bike paths with the aim to remind the tourists of the divided Europe.

The European Parliament officially acknowledged the project as an example for Soft Mobility in 2005. It is meant to be a symbol of the reunification of Europe and can help promote the common European identity. The trail was defined as the 13th long-distance route of the 14 EuroVelo routes in Europe (Cramer 2009). Figure 4 shows the EuroVelo routes through Europe, a project of the European Cyclists' Federation (ECF). Part of number 6 (pink line) is the Danube Trail and since September 2011 number 13 officially is the Iron Curtain Trail (red line). Some other routes cross the Danube Region (EuroVelo 2011a). Now, these ventures are part of the EUSDR project "To support green ways and cycle tourism" (European Commission 2010a, 30) just like transnational hiking projects.

Figure 4: EuroVelo routes (EuroVelo 2011)

Hiking and biking combined with ship cruises and train

To get hiking and biking routes more popular, it is important to coordinate them with ship, train and bus. Cruise tourism is like cycle tourism more established in the upper Danube (80% between Passau and Budapest), than further downstream, but there are development potentials all along the way. One action of the EUSDR is “To improve cruise tourism on the Danube” (European Commission 2010a, 29). Here has to be noticed, that the cruise tourisms added value for the region is less than form cycle and bike tourism. Thus it is an aim to combine ship tours with hiking, cycling and city tourism for the regions along the river to be able to benefit from tourism. The European Commission sets this under the point “To improve sustainable mobility through traffic and interconnectivity of train, bus and shipping in the Danube countries”

in the Action Plan (European Commission 2010a, 28). Travel chains along the Danube with attractive stations and tourist routes offers for several days have to be provided (Baumgartner 2011).
The combination of train and bicycle is very popular for travellers. To promote this combination, the Eastern European countries have to modernise their train infrastructure, which has relatively large networks, but is in a poor condition and not powerful. For example it takes nearly eight hours journey time from Budapest to Belgrade.
Bicycle transport in long-distance trains is also one of many points that have to be improved. Even in German ICE-trains it is mostly not possible for tourists to take their bikes. The reason for this may be the anxiety of the railway companies to delay, due to the additional effort (Danube Tourist Commission; Zolles & Edinger GmbH 2011).

Combinations of the diverse means of transport have been practised the last years, but the interaction of the CO_2 gentle means of transport has to be much more improved. The Danube Competence Centrum (DCC) is an organisation with the purpose, amongst others, to combine the different ways of sustainable transportations with cultural and natural tourism to create a Danube Brand for the whole region (Konze 2011). Under this topic there are some projects relating to the action “To establish the Danube Region as important European tourist destination” (European Commission 2010a, 29).

3.2.3.2. Promotion of cultural tourism

Danube Limes

To protect the Roman Empire from the migratory people, an additional artificial barrier with many military installations was built. The Danube formed an important section of the frontier of the Roman Empire. The barrier called limes extended from England (Hadrian´s Wall) down to Asia Minor and North Africa.
2007 the project called “Danube Limes” was created by the Hungarian monument preservation authority and supported by the European Commission through the European Regional Development Fund.
This project is included in the Action Plan and is set under the action “To promote cultural exchange and exchange in the arts” (European Commission 2010a, 30). Working groups from Austria, Hungary and Slovakia are working together with Polish and German experts with the

aim to create a general scientific concept, to have their sections of the limes classified as UNESCO World Heritage sites (Breeze and Jilek 2009). Another focus of this project is to prepare selected sites for public access and improve the perception by the tourists (INTERact 2011c).

City-tourism

City tourism becomes more and more favoured. Figure 5 below shows the development of tourism in the Austrian Danube Region since 2 000. The pink and red lines stand for Vienna in the summer and the winter season respectively. Both lines are increasing with a short break 2009 due to the economic crises. This trend can be observed in every big metropolis in Europe.

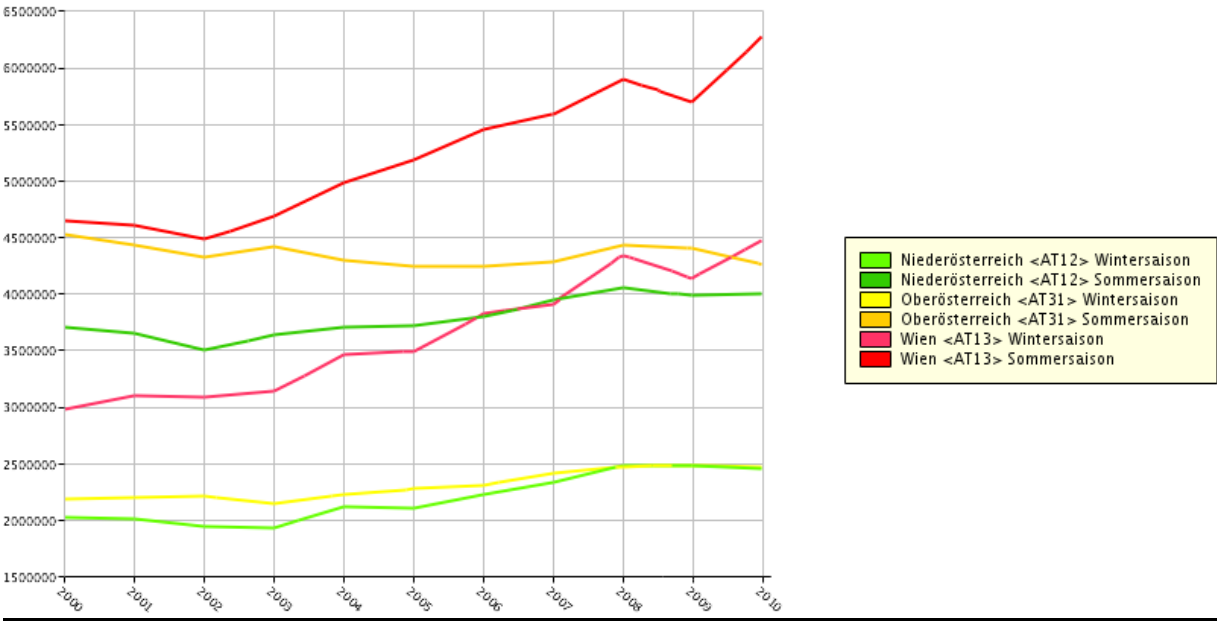


Figure 5: Overnight stays in the Austrian Danube Region 2000-2010
(Statistik Austria 2011b)

Towns like Osijek, Novi Sad, Belgrade and Russe, offer an abundance of cultural events and an exciting nightlife. Belgrade is famous for its nightlife, Novi Sad attracts about 200 000 visitors with its annual EXIT Festival and Russe's "Elias Canetti Forum" has set some new cultural trends in Bulgaria, just to name a few examples (Konze 2011). The cultural offer of the Danube cities already exists, and of course there is spare capacity. But also the coordination of train travel, boat and bus is essential, as mentioned above, to promote the urban tourism.

One action to develop the cultural city tourism set by the European Commission is “To promote cultural exchange and exchange in the arts” (European Commission 2010a, 30). Some ideas for the implementation are, to create a Cultural Danube Card or the further developing of the Danube Theatre Festival.

3.2.3.3. Cross border-tourism in the Danube-Delta

The Danube Delta is highly attractive for tourists, especially for people interested in bird watching, because of its nature with its immense biodiversity and its cultural variety. For this reason the region was designated in the 1990s a biosphere reserve and also a UNESCO world natural and cultural heritage. As rising unemployment and environmental degradation threaten the delta and its residents increasingly, Naturefriends International (NFI) decided to start a project to help open up new prospects. Therefore the Danube Delta was appointed by NFI “Landscape of the Year 2007 - 2009”. NFI, member of the Danube Competence Centre, is very dedicated to promote the cross-border tourism in the Danube Delta between Romania, Moldavia and Ukraine. NFI has pursued the aim of networking cross-border regions throughout Europe already since 1989. And now they use the EUSDR as an opportunity to develop new ways for cooperation (Röder 2009).

They set the objective of developing a quality label and better cross-border cooperation with increasing the quality of the tourism, not the quantity. This has to be achieved through greater involvement of all stakeholders, including the universities in the region. The name of this project is:”Quality improvement for cross-border tourism in the Danube Delta (Romania, Moldova and Ukraine)” (DCC 2011, 1).

The initiative is based on a close partnership between NFI, Friends of Nature Romania, the Administration of the Danube Delta Biosphere Reserve (ARBDD), the Danube Delta Institute, the Romanian Eco-Tourism Association (AER), the German Society for Technical Cooperation (GTZ) and Worldwide Fund for Nature (WWF) in Romania (Röder 2009). Another project written down in the Action Plan, which is dedicated to develop a monitoring system especially in the Danube Delta, is also supervised by the NFI. Since 2011 the brand “Respect” stands for sustainable tourism in this organisation and promotes among other things transnational tourism in the Danube Region (European Commission 2010a).

Interview with Dr. Christian Baumgartner

Functions:

- Secretary General NFI; Respect ;
- Member of:
  - Danube Strategy Civil Society Forum
  - Tourism Sustainability Group of the DG Enterprise, European Commission
  - European Environmental Bureau (EEB) Working Group Tourism
  - European Environmental and Sustainability Advisory Council (EEAC)

Date: 9th December 2011

Main points:

- EUSDR is a good opportunity for NGOs to get involved. Parts of the position papers from NFI, written together with other NGOs like WWF and DCC were taken just as they are for the Strategy and the Action Plan.
- There is no sustainable tourism, it is a vision that can never be fully achieved. Sustainability is a dynamic system that is developing continously.
- Cooperation with countries is very different. Non-EU Member States are often more motivated as Member States. For example the ministries of Bulgaria and Serbia are very professional and motivated. Romania is repeatedly in politically change and Moldavia is a developing country.
- There are no, or only few structural data about tourism in the Danube Region, because there is no political delimitation of the region and many countries in Southeast Europe have no or only weak statistic investigations.
-There is no concrete monitoring-plan for the EUSDR is set by the European Commission.
It could check things like: How were the main targets implemented? How much money was put into the projects? First impact assessment will only be possible in a few years.
- Tourism is a cross cutting issue. EUSDR is generally prone to conflicts of interest, as such as transport and biodiversity etc. are very contradictory. Therefore, as part of the EUSDR, a dispute unification procedure should be established. At the moment there is no collaboration between the Pillars, only within. But for that, it is still too early, maybe next year. The Pillars first have to work internally.

- Project “Danube Hike” is planned and will start after me formal problems that contain with the German partner ARGE "Deutsche Donau" the project with a delay on 1st February or 1st March 2012. It should be the paths along the Danube River and hiking areas, ranging approach extended to the Danube.
- EUSDR has great potentials for Danube Tourism. The Danube has already a good image, which is better tn the image of some states (in tourm) and it connects nature and culture.
- EUSDR in 2013:
    - Steering groups are established so, that they know how to work.
    - First smaller projects are implemented.
    - It will be easier to realise projects for the whole Danube Region.
    - Much depends on political factors of the individual countries.

3.3. Pillar B - Protecting the Environment in the Danube Region

Pillar B consists of three highly interdependent PAs (European Commission 2010a):

- PA 4: TO RESTORE AND MAINTAIN THE QUALITY OF WATERS
- PA 5: TO MANAGE ENVIRONMENTAL RISKS
- PA 6: TO PRESERVE BIODIVERSITY, LANDSCAPES AND THE QUALITY OF AIR AND SOILS

The catchment area of the Danube stretches over 14 countries and contains a lot of excellent habitats like the Carpathians and the Danube Delta for an enormous number of species. These resources go beyond national interest and borders (European Commission 2010c).

The Danube River Basin (DRB) has a grandiose and unique flora and fauna. For example there live some wolves, bears, lynx and also pelicans. The ecosystems suffer from the pressure of the human activity. Therefore it is elementarily that the human being respects the nature and reinforces protecting cooperation structures (European Commission 2010c).
These cooperative efforts also could be supported by the EUSDR.

Frameworks and Danube River Basin Management Plan
Since the European Union adopted the EU Water Framework Directive (WFD) in 2000, European waters are managed based on river basins, the natural geographical and hydrological units. The Danube River Basin District (DRBD) covers the DRB, the Romanian Black Sea coastal catchments and the Black Sea coastal waters along the Romanian and partly Ukrainian coasts. EU Member States should achieve good status in all bodies of surface water and groundwater by 2015, respectively by 2027 at the latest. Non EU Member States implement the WFD within the Danube River Protection Convention (DRPC) from 1994, which forms the legal and political framework for cooperation and transboundary water management in the DRB. In addition to water management tools one main principle of the WFD is public participation in the planning process (ICPDR 2009).

The Danube River Basin Management (DRBM) Plan should draw the way to reach good status for all waters of the DRB. At sub-basin and national level, more detailed plans are generated. Coordination platform is the International Commission for the Protection of the Danube River (ICPDR). The current DRBM Plan is valid for the period 2009 to 2015 (ICPDR 2009).

In this context, the EUSDR can help to intensify transboundary cooperation and coordination – and therefore to meet the targets of the DRBM Plan. The DRBM Plan has close connections to topics concerning EUSDR Pillar B - Protecting the Environment in the Danube Region.
Table 6 shows the expenditures budgeted by the Structural Funds in 2007-2013 (European Commission 2010a):

Table 6: Expenditures budgeted by the Structural Funds in 2007-2013 for Pillar B
(European Commission 2010a)

Budgetary item		**Amount in billion EUR**
Environment		**19,5**
	Biodiversity	1,1
	Waste water treatment	5,7
	Drinking water	3,0
	Solid waste	2,6
	Risks	1,9
	Other	5,2

3.3.1. Water quality

Phillip Weller emphasises that over the past twenty years there has been significant improvement in the quality of the Danube's waters and is convinced that by 2020, based upon the work the countries are doing to implement the Danube River Basin Management Plan, they will be even cleaner and healthier than they are today (Goulet 2011).

A central issue is the water management in the whole River Basin, because the water does not stop at the border. Thus the management needs a transnational network to restore and maintain the quality of waters (European Commission 2010a).

The measures of polluted water depend on the rate of pollution and it has to be classified accordingly. Referred to the WFD the water quality is classified in two categories. By this classification surface water bodies with the same rate of pollution become comparable. The first one is the ecological classification and the other one is the chemical classification. Heavily modified and artificial water bodies can only reach the good ecological potential (Jungwirth 2010).

3.3.1.1. Current status

The WFD claims an approach for water management, for every river basin. The plan for the Danube River is the DRBM Plan as of 2009. The basis for this management plan is the first and the second Joint Danube Survey (JDS).

The Joint Danube Survey is the world's largest river expedition undertaken by the ICPDR to ensure an unpolluted River Basin. This survey also creates a big and detailed database on the status of the aquatic ecosystem of the Danube River (ICPDR 2009).

The results of the first JDS are both negative and positive. A positive result is the high biodiversity in the Danube River and in their tributaries found by scientists. In addition the awareness of the importance of the reduction of pollution rises at the local communities. Furthermore the report shows that there are many problems with industrial pollution (for instance behind the big cities Belgrade and Bucharest) heavy metals, microbiological pollution, oil from ships, pesticides and chemicals. The expedition also organised some events to inform the population and enhance the awareness of them (Liska 2008b).

The DRBM Plan divides pollution into four categories (ICPDR 2009):

- Organic pollution
- Nutrient pollution

- Hazardous substances pollution
- Hydromorphological alterations.

Organic pollution

The untreated wastewater from agglomerations, industry and agriculture are responsible for organic pollution. The aquatic ecosystem is negative influenced by the too low oxygen level of surface waters and this low level is caused by the organic pollution (European Commission 2010a).

These substances have decreased since the first Joint Danube Survey, which means that some actions against organic pollution are successful. But there are also some negative examples like the world's most used plasticiser for plastic (PVC) called Di - (2 - ethylhexyl) phthalate (DEHP). Every sample of water contains these substances on a high level of concentration. The highest concentrations were found in Austria and in Hungary. A lot of other organic pollutants were found downstream the agglomerations of Budapest and Bucharest. The pollution around Budapest caused by the direct discharge of industry and domestic wastewater can be detected 200 km below the city (Liska 2008a).

Nutrient pollution

The main reasons for nutrient pollution are the emission of phosphate and nitrogen from agriculture and also untreated wastewater from agglomerations and industry. The emissions from agriculture attribute to the mineral fertilisers in land cultivation and livestock manure in animal husbandry. The quality of water is strongly affected by accelerated growth of algae and other undesirable plants caused by eutrophication.

There are some different schemes of classification for the nutrient pollution. According to the Transnational Monitoring Network (TNMN) scheme, a monitoring network from the ICPDR for the whole Danube, nearly the whole Danube has acceptable conditions. More than 80% of the tributaries satisfy the standard of TNMN for nitrate and 60% of that satisfies this for phosphorous concentrations. The report of the JDS 2 shows that the nitrate concentration decreases downstream the Danube. A high concentration of ammonium-N was found at the confluence of Arges River and Danube. The reason for this high level was the untreated wastewater from the city of Bucharest (more than 2 Million personal equivalents) (Liska 2008a).

Hazardous substances pollution

The causes for pollution of hazardous substances are provoked by industry emissions discharges from mining operations and accidental pollution. This sort of pollution damages the aquatic and terrestrial ecosystem and influence directly the health of population (European Commission 2010a).

The main part of the values for hazardous substances has the same level such as the JDS 1 in 2001. Some substances are decreasing since that time. For instance fish analysis scientists observed an increased copper concentration downstream the Iron Gate, and close to Budapest high concentrations of mercury are detected and at the confluence of the Timok River and Danube a high level of nickel are observed (Liska 2008b).

These pollutions are typical anthropogenic sources. Especially the industry at the mentioned pollution points are reason for that high concentration of hazardous substances (ICPDR 2009c).

Hydromorphological alternations

The last wide influence impact on water quality are the hydro morphological alternations. The river and habitat continuity are interrupted and adjacent wetlands and floodplains are disconnected. Especially the river continuity is very important for the development of the flagship endangered species like the sturgeon (European Commission 2010b).

40% of the investigated Danube has a satisfactory condition. The lower part of the Danube is in a better condition than the upper part. This is a good basis for the protection of the Danube for the future. The reason why the Upper Danube is in a bad condition is that there are a lot of big hydroelectric power plants. Only the area around Straubing in Germany and the Wachau in Austria is free flowing. The floodplains are also very important for a good hydro morphological status and high water quality. There are only 6 big floodplains (Danube National Park; Danube-Drava National Park; Kopacki Rit and Gornje Podunavlje Nature Parks; Floodplain forests of the Serbian Danube upstream of Tiszaconfluence; Small Braila Island protected area; Danube Delta) in the Danube River Basin (Liska 2008b).

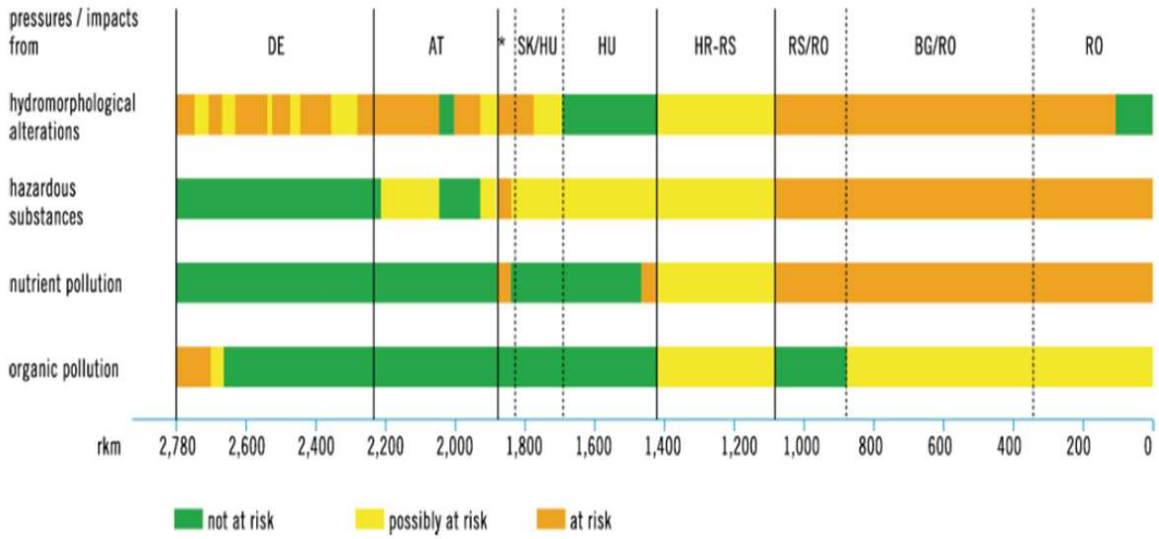


Figure 6: Results of the risk analysis for the entire Danube River
(ICPDR 2004)

Figure 6 shows which water bodies are “not at risk”, “possibly at risk” and “at risk” of failing the WFD environmental aims. This graphic illustrates the increase of “at risk” water bodies from upstream to downstream. Only the hydro morphological alternations are also at risk at the upper stretch of the Danube (ICPDR 2009c).

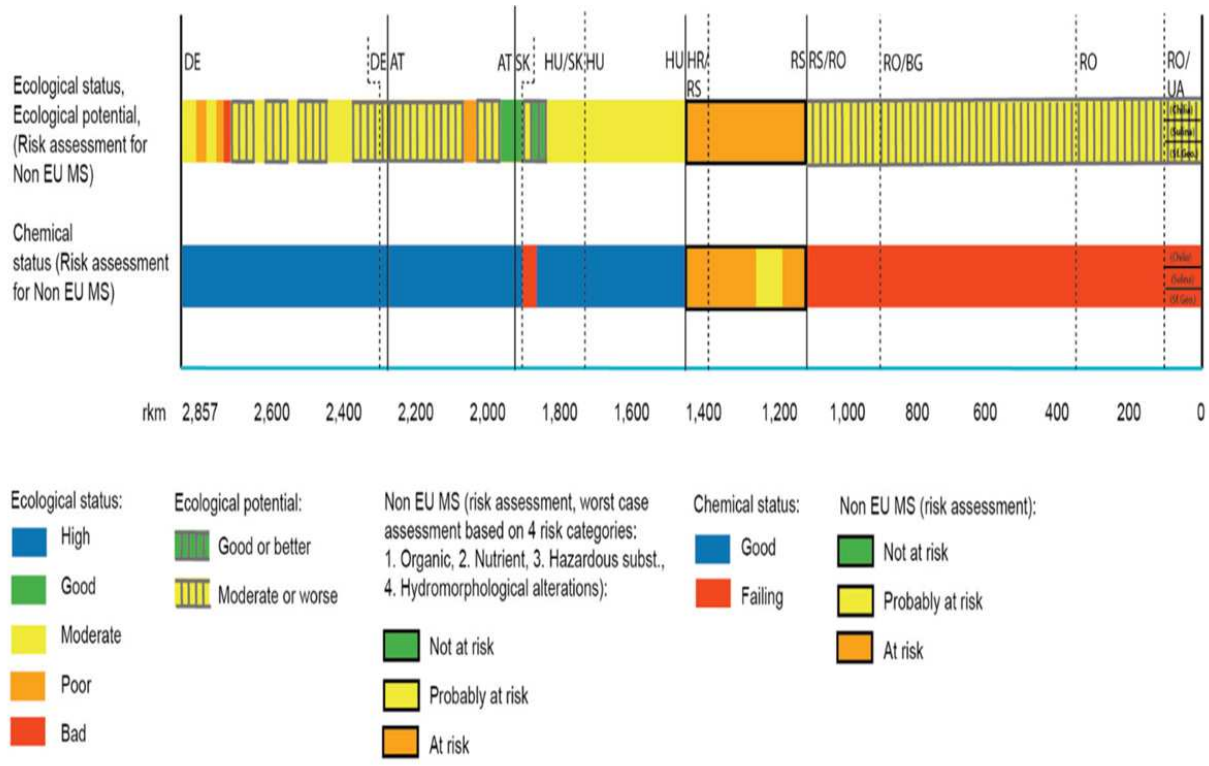


Figure 7: Status classification for the Danube River (ICPDR 2009a)

The WFD define that the EU Member States have to reach the “good status” in surface and groundwater bodies until 2015, or at latest 2027. This means that the water bodies have to achieve good chemical and also good ecological status. Figure 7 represents both the ecological status and ecological potential and the chemical status of the entire Danube. The graphic shows that almost the whole Danube has at most a moderate status. Only the stretch from Vienna to Bratislava has a good status. Concerning the chemical status the Danube in the upper stretch is classified at good status and from the Croatian border at failing status (ICPDR 2009c).

3.3.1.2. Development to an improved water quality

The European Commission (2010c) specifies some actions to improve the quality of water in the DRB. One generic target is to achieve environmental aims set out in the Danube River Basin Plan.

These targets are subdivides in the four main groups of pollution as well as at current status of water quality described. So for every type of pollution there are some different measures.

Organic Pollution

The wastewaters of towns (> 10.000 population equivalents) have to be treated before the discharge into rivers. If the level of treatment after that is too slight, the efficiency should increase. The Waste Water Treatment Directive, Sewage Sludge Directive and the Integrated Pollution Prevention Control Directive should be implemented. It is also important to mention that in the process of cleaning sewage water the Best Available Technology has to be applied.
The Vision for Organic Pollution is that zero emissions of untreated sewage water are dumped into the Danube River Basin.

Nutrient pollution

The source and targets of pollution of nutrients and of organic pollution are mainly the same. The level of pollution of nutrients should be so slightly that the water of the Danube and its tributaries achieve the good ecological/chemical status. In addition the nutrient loads in the Black Sea should be at the same good level as of 1960. By the elimination of phosphates in detergents, the pollution through phosphates can be limited. The Best Environmental Practise concerning the agriculture should be implemented for EU Members. Furthermore the Nitrate Directive should also be implemented.
The Vision for Nutrient pollution is that the Danube Basin and the Black Sea are not threatened by eutrophication.

Hazardous substances pollution

The Danube and its tributaries should achieve the good chemical status by reduction and elimination of hazardous substances. The Best Available Technology and the Best Environmental Practise should be applied. The utilization of pesticides should be reduced. It is also important to mention that the Pollution Prevention Control Directive and the Dangerous Substances Directive are to be implemented.
The Vision for hazardous substances pollution is that there are no risks or threats for human health and aquatic ecosystems (ICPDR 2009c).

Hydromorphological alterations

Problems are mostly caused by structural measures like water power stations and structures to protect the riverbanks from erosion and floods. One of the best counter measures is to deconstruct. Reinstatement after loss of the native species and to build some natural flood protection areas and some safety measures to get a better water quality (Ocker 2002).

The Danube River Basin needs measures to improve river continuity (for instance a lot of fish migration aids). Wetlands and Floodplains should be protected and restored to ensure biodiversity. The “no net-loss principle” should be implemented. This means that the floodplains and wetland should always be conserved. If there is another important use for an area another wetland has to be created (ICPDR 2009c).

The Visions for hydro morphological alterations are:

A good management of structural man-made changes that the aquatic ecosystem functions is ensured.

The wetlands should be reconnected in the whole Danube River Basin.

The aquatic ecosystem should not be affected by altered water quantity and flow condition.

Projects should use the Best Environmental Practice and the Best Available Technology. Negative effects should be prevented, mitigated or compensated (ICPDR 2009c).

Philip Weller from the executive secretary postulates as regards to the magazine Panorama (Wieselberg 2002) that:

- all communities should have a waste water treatment plant (WWTP)
- laundry and dishwater detergents should be phosphate free
- agricultural production should protect water resources
- all hydropower stations and dams should have a fish bypass.

All these actions should tend that the Danube waters will be cleaner and healthier than they are today.

3.3.2. Environmental Risks

Due to climate change, the probability of extreme weather conditions in the future will rise across Europe, and therefore within the Danube Region, too. This may cause more often and more intense floods, but also droughts and water scarcity. The EUSDR supports the development of a Climate Change Adaptation Strategy for the DRB. On the other hand, many potential industrial risk sites and contaminated sites are situated within the DRB (European Commission 2010a).

3.3.2.1. Floods

Within the DRB, which is situated in the moderate climate zone of the Northern Hemisphere, climate and weather conditions are alternating. The region is influenced by Atlantic, Continental and Mediterranean climate. Locally variable orography plays an important role. Average annual precipitation varies from above 3 000 mm in high mountains to 400 mm in the Delta Region. Flood protection measures have to consider different types of floods: mostly plain floods, flash floods and torrential floods of small streams (high damage potential), or ice jam floods (ICPDR s.a.).

Flood 2006

The severe spring flood 2006, due to melting snow and heavy rainfall, caused high water on the Danube, Sava and Tisza at the same time. Such a situation was never recorded before. The consequences were widespread damages, and thousands had to leave their homes. The event was analysed by the ICPDR and Lessons Learned were presented (Wachter 2008). One conclusion was that the event “underlined the need for the coordinated implementation of the ICPDR Action Programme for Sustainable Flood Protection in the DRB and the EFD” (Wachter 2008, 53).

Action Programme for Sustainable Flood Protection in the DRB

The Action Programme for Sustainable Flood Protection in the DRB was adopted in December 2004. It is an overall framework, and has to be specified more detailed for sub-basins. The major principles are (ICPDR 2010, 4):

- the shift from defensive action against hazards to management of the risk and living with floods,
- the river basin approach taking into account the Water Framework Directive,
- joint action of government, municipalities and stakeholders towards flood risk management and awareness raising,
- reduction of flood risks via natural retention, structural flood protection and hazard reduction,
- solidarity.

The Action Programme includes four major basin-wide targets (ICPDR 2010, 4):

- Improvement of flood forecasting and early flood warning system,
- Support for the preparation of and coordination between sub-basin-wide flood action plans,
- Creating forums for exchange of expert knowledge,
- Recommendation for a common approach in assessment of flood-prone areas and evaluation of flood risk.

In September 2007, the EU Directive on the assessment and management of flood risks (EU Flood Directive, EFD) was adopted. Member states have to carry out a flood risk assessment and generate flood risk maps. The final step should be a management plan focused on prevention, protection and preparedness by 2015. National management plans should be coordinated within transboundary basins. The EFD has to be considered during the implementation of the Action Programme for Sustainable Flood Protection in the DRB. 17 detailed sub-basin flood action plans of the whole DRB were published by the ICPDR in 2009 (ICPDR 2010).

The synergy between river basin management and flood risk management will be realised through the following concerted actions (ICPDR 2009, 89):

- Coordinated approach in land-use planning,
- Reactivation of former wetlands and floodplains to achieve increased water retention along with good surface water status. As start-up actions, available data should be collected on e.g. inventory of floodplains; floodplains which are dis- or reconnected to their rivers; potential flood retention areas; future flood infrastructure projects etc.,

- Prevention of accidental pollution during floods affecting the storage facilities of dangerous substances,
- Preparation of an overview of the implementation of future measures to achieve the WFD environmental objectives while ensuring appropriate level of flood protection.

Danube European Flood Alert System (Danube-EFAS)

Danube-EFAS is an international system for forecasting Danube floods and providing early flood warnings. It was launched in March 2008 by ICPDR and Joint Research Centre (JRC) of the European Commission. EFAS should provide the European Commission and National Water Authorities with information to prepare for severe floods in the next 3-10 days, and is additional to national flood forecasting systems (ICPDR no date). Until November 2010 Austria, Bulgaria, Croatia, Czech Republic, Germany, Hungary, Moldova, Serbia, Slovakia, Slovenia and Romania were participating. Negotiations on membership were ongoing with Bosnia-Herzegovina and Ukraine. EFAS was expected to go into full operation in autumn 2011 (ICPDR 2010).

The EUSDR Action Plan contains some Actions and Projects concerning floods, for example the action: “To extend the coverage of the European Floods Alert System (EFAS) system to the whole Danube river basin, to step up preparedness efforts at regional level (including better knowledge of each other's national systems) and to further promote joint responses to natural disasters and to flood events in particular, including early warning systems.” or an example project: “To deploy a set of sensors and actuators all along the river and network them through the broadband infrastructure, allowing for events surveillance and risk prevention.” (European Commission 2010a, 43).

DANUBIS

The web-based information exchange platform DANUBIS includes (ICPDR 2010, 43):

- Thematic collection of information related to DRB Flood Action Plan targets,
- Links to Rhine, Elbe/Labe and Oder/Odra Commission web-site,
- Links to EU flood related R&D projects websites,
- Links to national websites – given in the Floods fact sheet,
- DRB List of the online discharge/stage gauging stations’ web-pages.

DANUBE FLOODRISK

The DANUBE FLOODRISK project is a three years EC Interreg Project, and focuses on risk assessment, risk mapping, involvement of stakeholders and risk reduction by adequate spatial planning. Results are proposals for flood mitigation measures, spatial development plans, assessment tools for economic development in flood plains and raised awareness of flood risk of all stakeholders. Infrastructures at risk like industry, power stations and supply infrastructure will be considered in the project. Partners are 19 institutions all along the Danube countries, and in addition NGOs are involved. Lead partner is the Romanian Ministry of Environment (Romanian Ministry of Environment 2009).

The project harmonizes with the EFD, which requires flood risk maps for areas at risk by 2013. It will be completed by the end of 2012 (ICPDR 2010).

The EUSDR Action Plan contains some Actions and Projects concerning floods, for example the action: “To develop and adopt one single overarching floods management plan at basin level or a set of flood risk management plans coordinated at the level of the international river basin.” or an example project: “To complete and make full use of the outputs of the DANUBE FLOODRISK project currently underway (European Territorial Cooperation Programme South-East Europe).” (European Commission 2010a, 42).

3.3.2.2. Accidental Pollution

Baia Mare 2000

On 30th January 2000 a severe chemical accident happened at the Aurul gold mining site next to Baia Mare in western Romania. A dyke of a wastewater reservoir broke and at least 300 000 m³ highly concentrated wastewater with cyanide, as well as heavy metals, got in the environment. Via the local creek Sasar the spill arrived the Tisa-Danube-basin and on 1st February 2000 after 72 km the Hungarian Border. It took the spill 15 days to reach the Danube upstream of Belgrade and another 13 days to the Danube Delta after 2 000 km altogether. The gap in the dyke was closed not until 2nd February 2000. In general, the cyanide-thresholds for fish toxicity were exceeded during the whole route until to the Danube Delta. Due to missing permanent supervision of the constitution of the dyke an uncontrolled break was

possible. One reaction to the accident was an increase of the safety measures at this site, e.g. permanent supervision (Wachter 2003).

Accidental Risk Spots (ARS) and Old Contaminated Sites

As a result of the cyanide accident next to Baia Mare in 2000, the ICPDR initiated a common inventory of potential accidental risk spots (ARS) for the whole DRB. Basis for this basin-wide assembly were national inventories in every ICPDR member state. An Expert Panel collected national and additional data and published the basin-wide analysis in November 2001. The assessment of the industrial sites shows the potential danger they represent, based on the nature and the quantity of the materials used in these sites. A definitive statement of the actual danger level needs investigations of the safety measures in each of these locations (Winkelmann-Oei et al. 2001).

One result of the inventory was a map showing the main Accident Risk Spots in the DRB (see Figure 8). The Water Risk Index (WRI) is an opportunity to classify accidents, and therefore a basis for decision-making within the Accident Emergency Warning System (AEWS). The definition of the WRI can be found in the inventory document (Winkelmann-Oei et al. 2001).

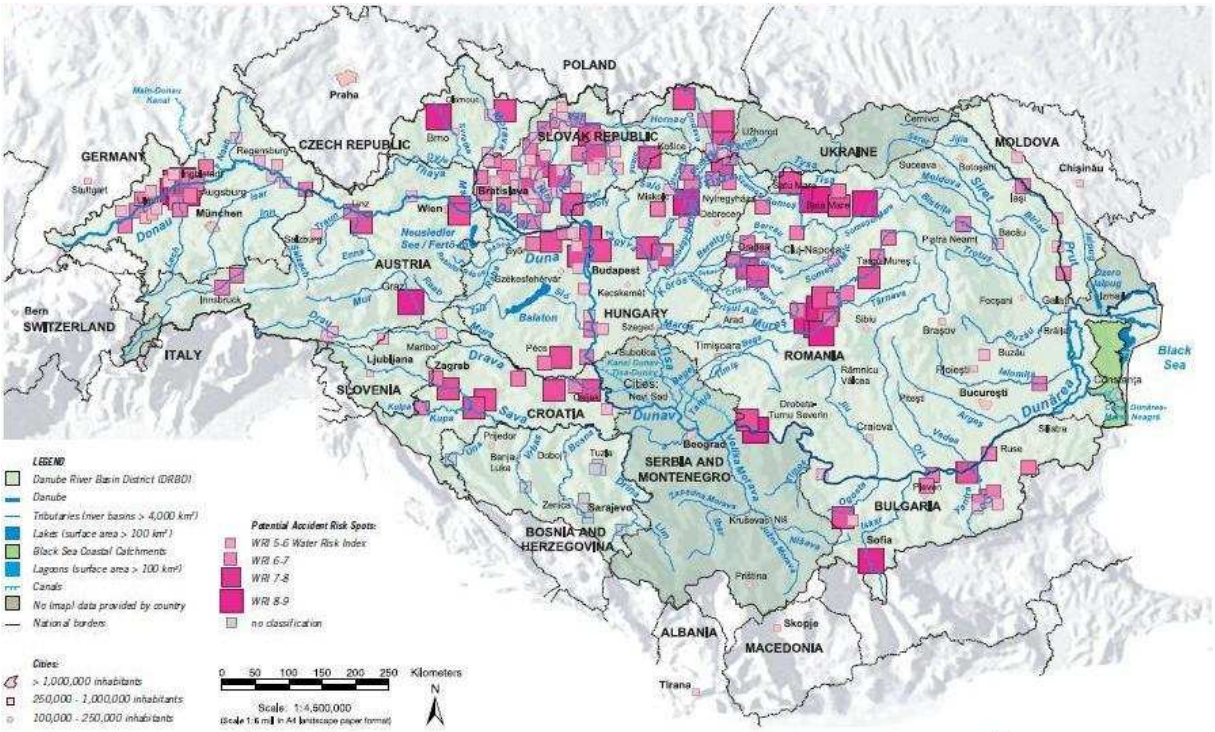


Figure 8: Potential Accident Risk Spots in the DRBD (ICPDR 2005)

Beside pollutions from operating industrial installations, old industrial installations or old contaminated sites may cause severe environmental problems. Especially when these sites are situated in potentially flooded areas, heavy flood events may release hazardous or toxic substances. Figure 9 shows a map of old contaminated sites in potentially flooded areas. The underlying inventory is under progress (ICPDR 2005).

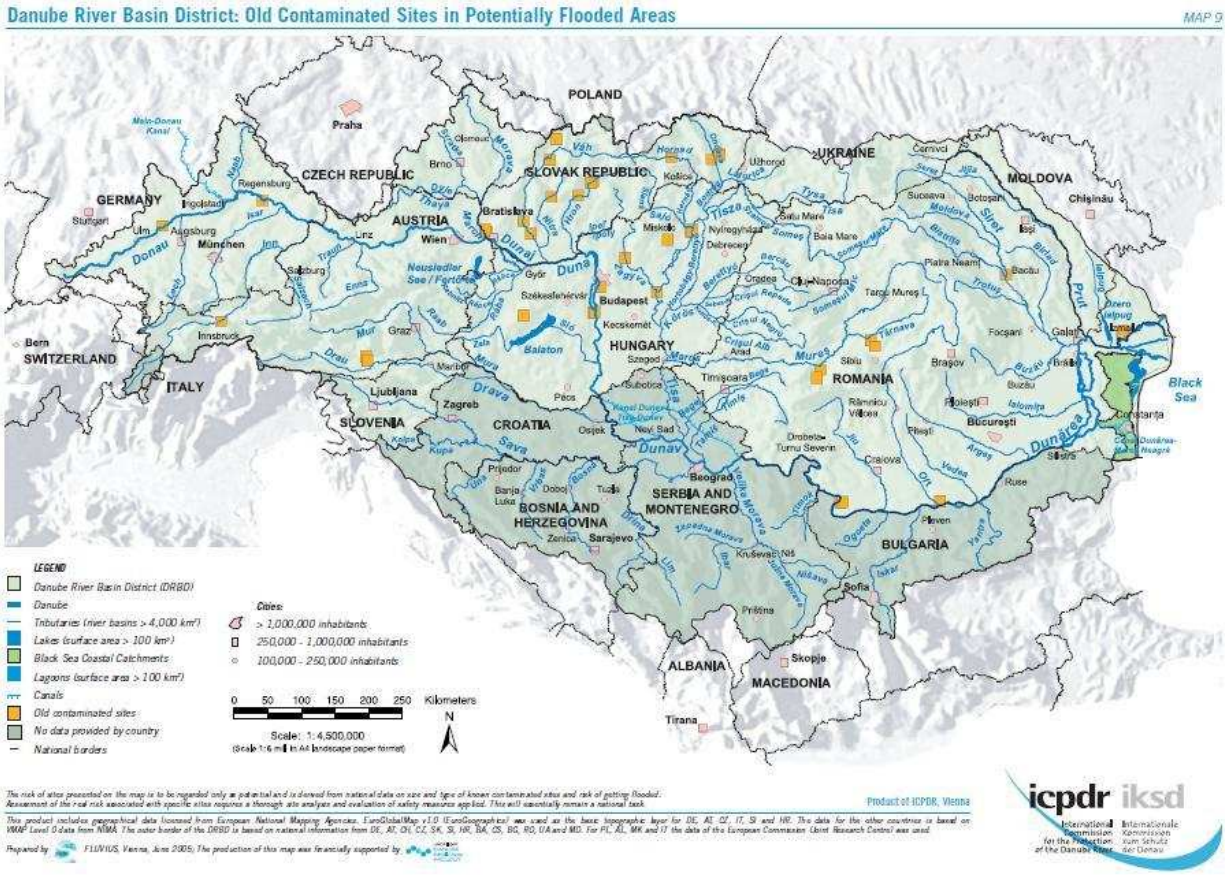


Figure 9: Old Contaminated Sites in Potentially Flooded Areas in the DRBD
(ICPDR 2005)

The EUSDR Action Plan contains some Actions and Projects concerning Accidental Pollution, for example the action: “To continuously update the existing database of accident risk spots (ARS Inventory), contaminated sites and sites used for the storage of dangerous substances.” (European Commission 2010a, 44).

Accident Emergency Warning System (AEWS)

In case of an accidental spill, including environmental pollution, timely information is essential for adequate reaction, to prevent or reduce damages to humans and nature. The Accident Emergency Warning System (AEWS) in the DRB started its operation in 1997, now 13 countries of the DRB are participating (not yet Montenegro). The system networks via Principal International Alert Centres in each country. The AEWS sends out international warning messages to countries downstream whenever a risk of transboundary water pollution exists, or threshold danger levels of hazardous substances are exceeded (ICPDR 2007).
The Water Risk Index is an example for the basis of decision-making within the AEWS (see above) (Winkelmann-Oei et al. 2001).

As Wachter (2003) analyses, concerning the cyanide-accident of Baia Mare in 2000, the AEWS helped that warnings and alarms were sufficient, and more extensive damage was prevented.
During a test scenario 2006 the system worked satisfactorily in most instances, but showed some weak points, too. Main goals are round-the-clock preparedness and adequate integration into the national systems. In order to improve the efficiency, more support and attention from national governments is needed (Liska 2007).

The EUSDR Action Plan contains some Actions and Projects concerning Accidental Pollution, for example the action: “To develop rapid response procedures and plans in case of industrial accidental river pollution.” or an example project: “To implement a comprehensive transboundary risk management project in the Danube Delta.” (European Commission 2010a, 44).

3.3.3. Biodiversity

Along the Danube River, the nature, the landscape and the geographical variety change from upstream to downstream radically. The multiplicity of ecosystems like wetland, floodplains and river forest, plays a major role in providing habitat and an enormous biological diversity. The Danube is one of the most important streams, passing through the European Union. The river has altered during many centuries. And even more, over the last years, many species and

habitats of the Danube Region were found to have unfavourable protection status and some are in high deterioration (European Commission 2010a).

3.3.3.1. Biodiversity on the Danube River Basin

Biodiversity comprises all living organism, from aquatic to terrestrial plants and animals. Furthermore undetectable organisms, bacteria and genes are part of the life cycle (Biodiversity Action Plan 2008).

Therefore it is an extremely wide panel of action that is required to preserve its integrity. Ecosystems are essential to purify air, clean water, and conserve soils quality. They even regulate the climate, recycle nutrients and provide food.

However, the variety of human-induced activities put the region under enormous stress. The main causes are firstly the extension and intensification of agriculture activities such as drainage, irrigation and fertilisation (e.g. grassland). Deforestation issues, for enlargement of land-usage (e.g. urbanisation) or for commercial purpose, have reduced the half of Carpathian virgin forest, which is a unique region for a wide array of wildlife (e.g. mammals). Secondly, the rapid industrial development of massive constructions on and around the river, like the high interest for navigation projects and hydro-electric-power stations causes soil-water-air pollution. This is also affecting the river continuum and modifying the sedimentary process in all watercourses and indeed the river morphology, thus endangering the last existing habitats for many species (e.g. fishes) (ICPDR 2010).

Aquatic case study: Sturgeons

In the Danube/Black Sea region are 6 sturgeon species, which are represented as native species. Today most of them are critically endangered according to the IUCN Red List of Threatened Species, as shown in Table 7.

Table 7: Six native species of sturgeons in the Danube Region
(IUCN 2009, modified)

Atlantic Sturgeon	already extinct
Ship Sturgeon	close to extinction
Danube Sturgeon	extremely rare and highly endangered
Stellate Sturgeon	
Beluga Sturgeon	
Sterlet Sturgeon	vulnerable

Sturgeons migrate, for reproduction and feeding, from the Black Sea into the Danube Region. This migration is part of their natural life cycle. In the 19th century, sturgeon species were able swim over 2 000 km upstream to Bavaria. Nowadays, they cannot even reach the middle sector of the Danube. There are ranges, of “cause and effect” factors that are responsible for this regression. Concentrated river regulation and construction are principal reasons, leading to loss of spawning places. The construction of the “Iron Gate I” and “Iron Gate II” hydroelectric dams, obstructed sturgeon migration to the Middle and Upper Danube, reducing their movement to the Lower Danube section (Action Plan for the Conservation of the Sturgeons 2005).

This limited the distribution of sturgeons along the entire Danube and its tributaries. It makes the lower sector as well as the Danube Delta and the Black Sea, a gold mine for the caviar industries.

Consequently, international trade of sturgeon was banned in 2001 and in April 2006. Romania adopted a moratorium to ban the fishing of sturgeon for a period of 10 years (Danube Watch 2006, 15) in Serbia, Ukraine, Moldova and Bulgaria (CITES). “We stopped the clock" (Romanian News watch 2011).

Additional to the fishing threat, water and sediment pollution can lead to intoxication of sturgeons (Sturgeon Action Plan 2005). To enhance the status of water bodies is crucial for better aquatic habitats, for microorganisms and for all other water dependent species.

Figure 10: Beluga species distribution in the DRB

(ICPDR 2007)

The past and present distribution of Beluga is shown in Figure 10. By installing appropriate fish passes in the Iron Gate dams, 800km of the Danube could be reopened to migratory sturgeons.

3.3.3.2. Network of Protected areas

EU Nature Directives

Since a resulting decline of wild bird population and the loss of habitat, a willing of protecting biodiversity and ecosystem has emerged. EU has established two main directives in relation to wildlife and the conservation of nature.

Firstly, in 1979 the Bird Directive was enacted, formally known as the Directive 2009/147/EC on the Conservation of wild birds, which concentrates on wild bird as migratory species.

Secondly, in 1992 the Habitat Directive entered into force, known as Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora, which safeguards over 1000 of animals and plant species and over 200 habitat types (e.g. special types of forests, meadows, wetlands) (European Commission Environment 2012).

The Bird Directive was approved especially to stop nature degradation and to ensure a conservation of wild birds, of which many are migratory. Furthermore, a network of Special

Protection Areas (SPAs) was established, to accent the trans-boundary and to guarantee far-reaching protection of endangered species and especially migratory species (listed in Annex I). On the one hand the Bird Directive forbids the deliberate killing or capture of birds and to damage their nest or activities that directly concern them. On the other hand it accepts hunting, with exception of a limited amount of species, the ways of hunting (e.g. non-selective hunting is banned) and during vulnerable periods such as reproduction or migration return. The Special Protection Areas for bird's protection (SPA's) concerns approximately 200 species from the Bird Directive. During migratory periods those areas can receive more than 20.000 water birds. Those sites symbolize a vital importance for the nesting bird population and even for winter visitors.

In additional the Habitat Directive that was adopted in 1992 supports the preservation of biological diversity putting into relation different activities like economical or social, to support a sustainable development.

Accordingly to certify the safeguarding of Habitats as well as the wide range of rare, threatened or endemic species, Special Areas for Conservation (SAC's) have been designed under the Habitats Directive. Those sites are strictly protected locations, which have a meaningful contribution for the conservation of the various habitat types. Indeed, supported by those two directives, a European network of significant high quality protected areas called Natura 2000, was founded.

Natura 2000 is a nature legislation program and the cornerstone of EU nature & biodiversity policy that involves SAC's and SPA's.

Being an ecological network, it aims to protect and manage vulnerable habitats, to ensure the long-term survival of Europe's most threatened species and to create preservation measures.

Natura 2000 also stands for avoiding actions that could affect species and habitats, but is not a system of severely protected areas. Human activities are nonetheless permitted, till they do not destroy habitats and still protect species.

Figure 11 shows 55 protected areas containing aquatic, wetland or waterside habitats of basin-wide importance (ICPDR 2009c). As it can be seen, the DBR is a territory in which it is still a high deficiency of protected areas and that it varies considerably from country (EU states) to country (non EU states).

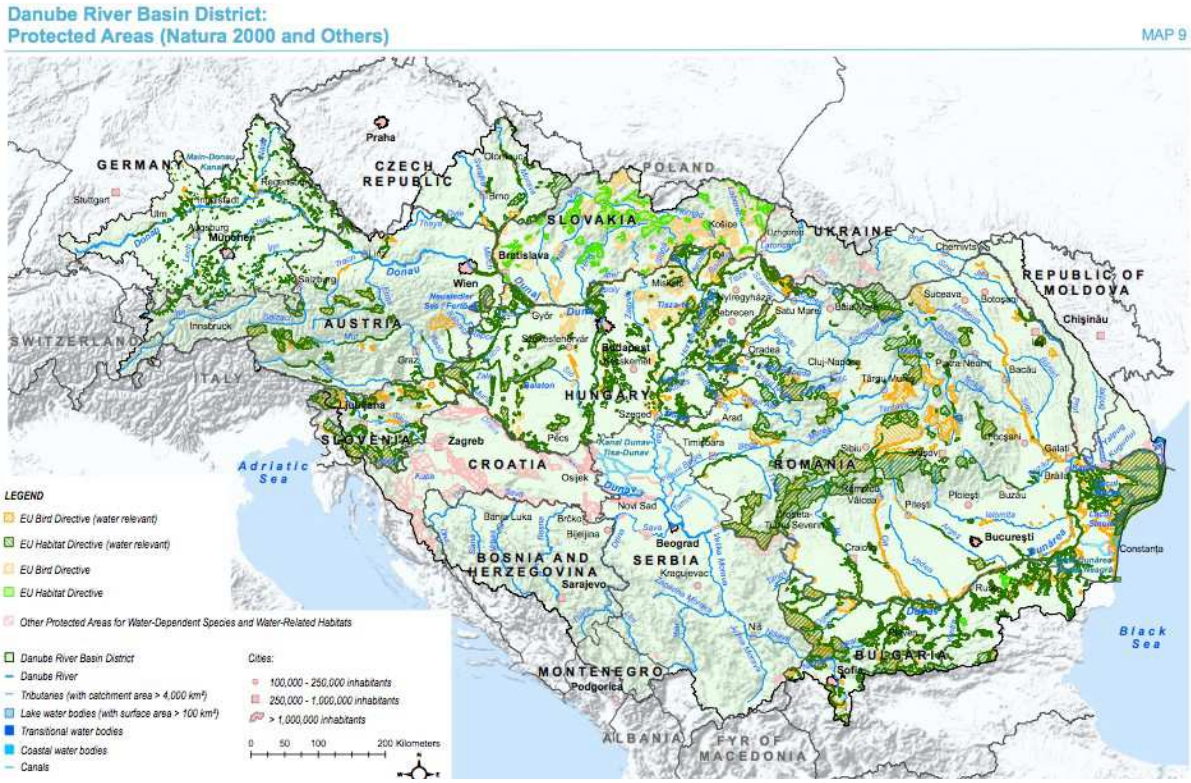


Figure 11: Protected Area in the DRB (Natura 2000)
(ICPDR 2009b)

For example even Romania, significant for its vast and rigorous Carpathian Mountain, with the largest area of virgin forest and with its extremely rich and varied fauna and flora as endemic species, is not in a better situation.

The high priority to protect the DRB, especially for its importance as European backbone (basis network) for biodiversity, is essential for a successful conversion into a sustainable transnational cooperation.

3.3.3.3. The Danube River Network of Protected Areas (DRNPA)

Danube Parks

The declaration of Tulcea in 2007 was the first request of a transnational network of protected areas along the Danube. Subsequently in 2009, with the support of the South East Europe (SEE), the declaration of Vienna founded the Danube River Network of Protected Areas. As project partner for the implementation of the DANUBEPARKS, previously twelve (Danubeparks

2011) now fifteen (Danubeparks 2012) Protected Areas and National Parks from eight different countries of the Danube region participate. Figure 12 shows the current status of Protected Parks in the DBR.

Figure 12: NaturaParks in the Danube River Basin
(NaturaPark 2012)

The Danube Protected Areas founded a platform for a permanent cross-border cooperation, to develop specific conservation:

- River Morphology improvement and River-Revitalisation Process.
- Floodplain management and Habitat-network
- Protection endemic and native species
- Monitoring and Natura 2000
- Ecotourism

Considering those protected areas as the hotspots of biological diversity in Europe, in reference to figure 7 and figure 8, it comes evident that the most significant area of the river is the lower

Danube (1075km) and especially the Danube Delta. This area is one of the most strategically and vital ecosystems for birds.

Down the lower sector between Bulgarian and Romanian boundary, protected areas are quite close to each other having a wide-ranging complex of conditions for bird site almost all the year round and offers many “bird watching spots”. The numerous rock holes, niches, terraces and cave spots became the ideal place for nesting birds like the White Pelican and the Imperial Eagle. Therefore the project “Lower Danube Green Corridor”, supported by the four surrounding countries, is an example for the rights that such an area deserves.

Aerial case study: White Pelican

Asian and European wildlife come into exchange between points where the Danube streams into the Black Sea. In this area more than 300 bird species, including pelicans, cranes, birds of prey, the very rare Redneck Geese as other more, live there. Therefore ornithologists consider it as the main crossroads of migration routes in Europe.

A good indicator of the biodiversity exception of the river delta is the Great White Pelican. The pelican’s main habitat is restricted to the Danube Delta in Romania and Ukraine.

Unfortunately it is a very sensitive bird, because in case of disturbance (e.g. approached by humans) in their mating area, they immediately fly away and often never return. Knowing that 70% of the Great White Pelicans worldwide live during summer in the Danube delta, its protection is crucial. The Great White Pelican is classified as rare, there are fewer than 10.000 mating pairs, worldwide and in Europe around 4.100 pairs (WWF 2003).

The Danube Delta Biosphere Reserve (DDBR)

The Danube Delta is the second largest wetland in Europe and covers an area of 580,000 hectares offering 30 types of ecosystems (23 natural and 7 human-made). The different landscape sections such as lakes, channels, forests, floodplains, sand dunes, beaches give exceptional habitats for huge variety of plants and animals. The combination of terrestrial and aquatic ecosystem and the temperate-continental climate creates the favourable conditions making it the major stopover site (during spring and autumn) for millions of birds. The Danube Delta is on the third place in world ranking concerning scientific importance and gives home and life for more than 5500 flora & fauna species (DDBR 2007). In fact this area hosts even the compact reed bed expanses worldwide. Being a special waterfowl habitat, in 1990 it was

declared as a Biosphere Reserve and recognised as a universal value in the Man and Biosphere (MAB) program of UNESCO (Codreanu 2007). The total area of the delta is under legal protection including floodplains and marine areas.
The DDBR is listed as a wetland of international importance especially as waterfowl habitat under the Ramsar Convention (1991) (DDBR 2007). This single Delta, lies on the territory of two countries and it is subdivided in three main distributaries: Chilia, Sulina, and the Saint George. Romania covers the main part with around 80% and Ukraine with 20%. The crucial threats for biodiversity in the delta ecosystem, is caused by changes in upstream conditions (increased pollution, retained sediments), overfishing and agricultural exploitations. The annual flooding which results in sedimentation is gradually submerging the delta. This is causing a permanent expansion of the surface. Therefore the features of the area are constantly changing and the river canalization and the drainage systems impact the delta and its species.

Inappropriate agriculture is the main source of overloaded nutrients in soil and so subsequently in water-bodies. With the EU enlargement, it is even expected that agricultural production will increase in many parts of the DRB, which will probably lead to higher discharges if the way of proceeding is not changed entirely (ICPDR 2006). Beside Agriculture, urban areas and disperse settlements have, via inappropriate depuration stations and atmospheric deposition, impacts too. Nitrogen and phosphorus are essentials elements of the aquatic ecosystem and fishes directly influence the recycling. This is why fish species are an essential ecological indicator for the DRB and for water quality. They play an important role in the nutrient cycles because they store a large proportion of ecosystem nutrients (like N and P) in their tissues. So overexploitation, habitat degradation, disruption of spawning migration, protected areas and water quality are directly linked with the unstable equilibrium of this nutrient cycling (European Commission 2007). The reductions of habitats availability and alteration, disappearance of most native plants and species as well as the introduction of invasive alien species and its drastically modified ground, have to be pondered more, because if alterations persist in long-term it will even result in large-scale extinctions. The issue of biodiversity loss in the DRB is an essential issue that can be resolved only by cross-boarding projects and making all citizens sensible to it. Indeed, Natura 2000 and DANUBEPARKS will play an important role in the integrative process for sustainable development with their highly relevant trans-sectoral approach. Those action and project are a good representation of what is aimed in the EUSDR to improve the situation for biodiversity conservation.

Interview with Prof. Herwig Waidbacher

Functions:

Head of Department of Water - Atmosphere - Environment (WAU), Institute of Hydrobiology and Aquatic Ecosystem Management (IHG), University of Natural Resources and Life Sciences Vienna (Universität für Bodenkultur Wien, BOKU).

Date: 12th December 2011

Main points:

- ad CASEE: BOKU (Rector Gerzabek) initiated this network and has a leader role; it is a chance for university cooperation within the DRB, supports joint research and joint educational programmes, common approach rises the possibility to earn money for research projects.
- Example for joint research project: build two large hydraulic laboratories - one in the upper and another in the lower part of the Danube; BOKU has concrete plans for the upper laboratory, would like to supervise it and cooperate with other research institutes;

EUSDR may encourage the common approach of CASEE.

- EUSDR is more of an infrastructural strategy; prefers PAs transport, energy, tourism; topics like environment and education are secondary.
- Concerning Navigation vs. Environment, it is state-of-the-art to adapt rivers to ships, not the environmentally compatible way around.

EUSDR was developed to avoid former troubles with infrastructure projects.

- EUSDR should identify potentials for the new EU programme period, e.g. in Romania many funds remain unused up to the present.
- So far, it is hard to say, if the EUSDR leads to concrete results; maybe it is too early for an assessment.

3.4. Pillar C - Building Prosperity in the Danube Region

Pillar C of the EUSDR is called “Building Prosperity in the Danube Region”. This pillar has three PAs (European Commission 2010a):

- PA 7: TO DEVELOP THE KNOWLEDGE OF SOCIETY THROUGH RESEARCH, EDUCATION AND INFORMATION TECHNOLOGIES
- PA 8: TO SUPPORT THE COMPETITIVENESS OF ENTERPRISES, INCLUDING CLUSTER MANAGEMENT
- PA 9: TO INVEST IN PEOPLE AND SKILLS

There is a focus on education and research in Pillar C, PA7 and PA9 and their respective actions make this clear. Some of the actions in PA8 are also focusing on collaboration with academic institutions. It seems that universities and university cooperation are a cornerstone of the EUSDR. Funding available from EU Structural Funds is listed in Table 8.

Table 8: Expenditures budgeted by the Structural Funds in 2007-2013 for Pillar C

(European Commission 2010a)

Budgetary Item		Amount in billion EUR
Research, innovation, entrepreneurship		**13,9**
	Innovation in enterprises	5,1
	RTD infrastructures	2,6
	Technology transfer	1,4
	RTD activities in research centres	0,9
	Other	3,9
Information society		**3,6**
	Services and applications	1,8
	Technologies and infrastructures	1,4
	Other	0,4
Human capital		**13,0**
	Adaptability of workers	3,0
	Access to employment	3,4
	Education and education systems	3,5
	Life-long learning	1,6
	Other	1,5
Inclusion		**7,6**
	Social inclusion	1,6
	Health infrastructure	2,2
	Education infrastructure	1,8
	Other	2,0

3.4.1. Targets

In the communication of the European Commission about the EUSDR, the following possible targets are named for Pillar C:

- To invest 3% of GDP in Research and Development by 2020;
- Broadband access for all EU citizens in the Region by 2013;
- Increase the number of patents obtained in the Region by 50%;
- Increase the share of the EU population aged 30-34 with tertiary or equivalent education to 40% by 2020" (European Commission 2010c).

Three of these targets are directly or indirectly linked with universities. The actors in the university sector share these targets. As Georg Winckler, former rector of the University of Vienna, stated in a presentation at the Danube Rectors' Conference 2011 in Vienna, for a better university development in the Danube Region there is a necessity to "invest more and better in higher education institutions/universities and in research and innovation" (Winckler 2011).

3.4.2. Education & skills, Research & Innovation

Knowledge is power, or in latin "*scientia potentia est"* is an old saying, often attributed to the English scientist Francis Bacon. To achieve progress and growth, the creation and exploitation of knowledge is one of the key factors for a society. As our society becomes more and more a knowledge-based society, the needs for research and education infrastructure becomes prevalent. Information and communication technologies and networks are more important than ever, as well as the institutional support for research and education.

The Danube Region is divided, not only concerning infrastructure, but also in terms of quality of higher education. South-Eastern European countries are at a disadvantage, not only in the above mentioned matters, but also in mobility of students, teachers and researchers (European Commission 2010a).

As these facts and the actions of the Action Plan make clear, university cooperation is a key topic of the EUSDR and linked to the development of the Danube Region. The authors of this document have therefore chosen to consider university cooperation the main area of interest considering PA 7.

Existing university cooperation in Central and Eastern Europe

University cooperation in Central and Eastern Europe did not start with the EUSDR, but long before. Some cooperation projects are not specific for central and eastern Europe, but for Europe in general, as the Bologna Process, some already focus the Danube Region, like the Danube Rectors Conference. There seems to be a general trend that university networks in the Danube Region focus on the EUSDR.

Bologna Process

In 1999, 29 European Countries signed the Bologna Declaration. This was the beginning of the Bologna Process. Since 2005, every partner state of the EUSDR is a member state of the Bologna Process, which is not, as commonly misunderstood, a process of the European Union, but a voluntary harmonisation process signed by many European states, both EU- and non-EU-Members. Even so, the European Commission is a member, while all other 47 members of the Bologna Process are countries.

Main goal of the Bologna Process is “to enhance the competitiveness of the European Higher Education Area” (Bologna Follow-Up Group Secretariat s.a.). 2009, the Bologna Process members stated new priorities for the second decade of the process in the so-called “Leuven/Louvain-la-Neuve Communiqué”. These are:

- Social dimension
- Lifelong learning
- Employability
- Student-centred learning
- Education, research and innovation
- Mobility
- Data collection
- Multidimensional transparency tools
- Funding.” (Bologna Follow-Up Group Secretariat no date)

As all partner states of the EUSDR are members of the Bologna Process, these priorities will influence the actions for university cooperation taken within the EUSDR. Especially “Mobility” and “Education, research and innovation” are also priorities of the EUSDR.

CEEPUS

CEEPUS is an acronym for Central European Exchange Program for University Studies. As the name express, CEEPUS is a university exchange programme in Eastern Europe. Member states are Albania, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Hungary, Macedonia, Moldova, Montenegro, Poland, Romania, Serbia, the Slovak Republic and Slovenia. Pristina in Kosovo is stated as “participating”. Germany and Ukraine are the two only EUSDR member states that are not participating in CEEPUS.

The legal basis for CEEPUS is similar to the legal basis of the EUSDR, an international agreement. Strategic decisions are made by the so-called: “Joint Committee of Ministers”. This committee meets once a year. Every year, the presidency is held by another country.

The central CEEPUS office in Vienna consists of two persons, who coordinate, evaluate, advertise and develop the CEEPUS program. Every member country has a National CEEPUS Office, which is usually integrated into a national agency, in order to avoid setting up new administrations. This reminds of the “no new administration”-policy of the EUSDR.

Student’s exchanges are performed in university networks. The networks are based on topics, so the departments or faculties working on the same topic connect and send students to each other. At the moment, 45 networks exist, with a wide topical range from “Fashion Communication” to “Landscape management”.

Within the CEEPUS networks, there is no flow of money from one country to another. The “currency” of CEEPUS is scholarship months. Every country pays for every month of incoming students and teachers. The minimum pledge per year is 100 scholarship months for every country.

The main focus of the CEEPUS programme is Joint PhD-Studies. According to their website, CEEPUS wants to “promote cooperation in the framework of the EUSDR” (Central CEEPUS Office 2010a). Even so, there is currently no network, which emphasizes on the specifics of the Danube Region, which is an action of the Action Plan for the EUSDR. Further, CEEPUS is not mentioned in the Action Plan. There are, however, a number of networks within CEEPUS which treat Central and Eastern Europe, for example the networks “PhD Studies for Central European

History", "Earth-Science Studies in Central and South-Eastern Europe" and "Language and literature in a Central European context" (Central CEEPUS Office 2010b).

Danube Rectors' Conference

Founded 1983, the Danube Rectors' Conference is a network of universities in the Danube Region. 53 Universities of 13 countries are members, with Moldavia being the only EUSDR partner not having one university in the network. This is, however, not very surprising, as Moldavia has only a very short Danube coast and no university in that region. Even so, the Moldavian ambassador Valeriu Chiverichiveri met with the rector of the Viennese University of Natural Resources and Applied Life Sciences (Universität für Bodenkultur Wien, BOKU), Martin Gerzabek and discussed opportunities of collaboration with the State Agrarian University of Moldova in the light of European networks such as the EUSDR and the Danube Rectors' Conference. (Ministry of Foreign Affairs and European Integration of Republic of Moldova 2010) So it seems that the Moldavian universities are seeking connections to other universities in the Danube region.

The main objectives of the Danube Rectors' Conference are "to raise the general level of academic performance; to promote mobility, to reduce drop-out rates; and to lower the cost of tertiary education" (Danube Rectors' Conference s.a.). Or, as Marhl et al. (2011) put it, the objectives of the Danube Rectors' Conference are "to integrate and promote cooperation among universities and other entities in the region, in particular to promote joint scientific research work, joint study programmes, mobility and care for the quality of universities".

With the so-called "Novi Sad Declaration" the Danube Rectors' Conference called for an active collaboration in the creation of EU regional policy. Furthermore, the DRC committed to cooperate in the realisation of the EUSDR. The Danube Rectors' Conference was involved in the creation of the EUSDR and reclaimed two actions into the action plan of the EUSDR. One Project consists in creating an information and exchange portal for universities. Current and finished projects shall be documented, also to connect universities with the local industry. This project would mean more transparency for funded projects and a better overview for the funding parties.

A second project by the Danube Rectors' Conference is the establishing of a so-called "e-region", which shall be connected to other regions to form an "e-Europe" (Marhl et al. 2011). In a presentation in Budapest, the Danube Rectors' Conference proposed projects within the

EUSDR. The DRC wants to promote common European values such as democracy and tolerance, strengthen socio-cultural coherence and cooperation, coordinate the development of research infrastructure and common educational programmes, to strengthen research on "recent" topics such as environment, traffics and logistics and to promote experience and knowledge transfer (Marhl 2010).

At the Danube Rectors' Conference 2011 in Vienna, some project proposals for cooperation with the DRC within the Danube Strategy were presented by the AARC (Alps-Adria Universities Rectors' Conference). Some are projects directly targeting university cooperation, such as "Uni-to-Uni: New Challenges for the University Governance in a Converging Macro-region" where the AARC and the DRC want to answer the question if "universities in the Danube macro-region are ready to demonstrate to the civil society that they can give systemic answers for smart growth both in relation to the nature of the academic institution" and provide suggestions for best practices of collaboration networks. "UniMove: Mobility & Exchange of Teachers, Students and Scientists - Stop the Brain Drain" is a project aimed to stop the so-called "brain drain", the migration of highly educated people out of the Danube Region. The projects "Knowledge Society and Societal Growth: The Role of Universities" and "Preservation and Growth of the Cultural Heritage" are research projects about universities themselves.

Other projects are "Health impact of Nanotechnology" and "Environmental Problems in the Danube Region" and aim to research environmental problems (AARC 2011).

Another project idea proposed at the DRC 2011 in Vienna was presented by Prof. Helmut Habersack who coordinates the Christian Doppler Laboratory for Advanced Methods in River Monitoring at the University of Natural Resources and Life Sciences, Vienna. The idea is to build two large hydraulic and environmental engineering laboratories, one in the upper/middle and one in the lower part of the Danube. In addition, a cluster of river engineering simulation tools should be developed and used by the Danube Region countries (Habersack 2011).

CASEE

CASEE (Central and South Eastern Europe) is a regional network of the ICA, the Association for European Life Sciences Universities. Life sciences means: agriculture, food, biotechnology, natural resources, rural development and the environment. The goal of CASEE is to support the development and implementation of the EUSDR, to strengthen research and education in the Danube Region and to develop joint research and joint educational programmes (CASEE 2011).

Reasons to found CASEE were on the one hand the big challenges like the Bologna Process and globalised education. On the other hand specific life sciences challenges like food and water security, environmental protection, sustainable use of natural resources, development of high-end technological methods in biotechnology and landscape development (CASEE 2011).
Activities of CASEE involve organising conferences and an e-platform of project and thesis partners. In 2011, CASEE funded a summer school with the title “Eurointegration: Theory and Practice” at the Sumy National Agrarian University in Ukraine (CASEE 2011).
The CASEE network was founded in 2010 by 30 Life Science Universities in Bulgaria, Czech Republic, Croatia, Hungary, Poland, Romania, Slovenia, Slovakia, Serbia, Ukraine and Austria in 2010. The initiative came from the University of Natural Resources and Life Sciences, Vienna (BOKU). In October 2011, representatives of BOKU and CASEE presented the network at the Austrian embassy in Brussels. At this presentation, rectors of the CASEE network stressed the need for a fund for innovation and research in the Danube Region and called for proposals for bio mass research in the region (Glössel 2011).

Interview with Prof. Martin GERZABEK

Functions:
President of the DRC, Rector of the Viennese University of Natural Resources and Applied Life Sciences (Universität für Bodenkultur Wien, BOKU).

Date: 16th December 2011

Main points: great potentials in students, researchers and teachers mobility, a lack of a good "Lobby" for the Danube Region, structural funds are not fully used, twinned labs can help to fight brain-drain, need for more funds for research and education, Danube Region specifics in curricula are useful and have great potential.

On the topic of concrete changes in education policy: too little time since the ratification process to already see concrete effects of the EUSDR. The steering groups have to find a working scheme and have to learn the ropes. The intention to have higher national budgets and new polices for education and research are clearly there.

Connections between the EUSDR and the Bologna Process: important to keep in mind that the structure of the Bologna Process (Bachelor/Master-system) was not a tradition in the Danube Region, so the implementation is slow and raises problems. Important to strengthen the Bologna Process in the region: great potentials in the envisaged mobility. The Danube Region could benefit greatly from a higher academic mobility. Language abilities in the region are often forgotten. Younger people, students and young researchers, mostly speak English as their second language, whereas older people, teachers for example, are often lacking sufficient skills in English. The later fact makes mobility and university cooperation a bit more difficult.
Connections between the EUSDR and the CEEPUS program: CEEPUS seems very interested in establishing special Danube Region related networks and to work closely within the EUSDR. The OeAD (*Österreichischer Austauschdienst* – Austrian agency for international mobility and cooperation in education, science and research) has also shown

strong interest in cooperating within the framework of the EUSDR. Mobility programs in the Danube Region are a motor of innovation.

For university cooperation aside from mobility programs: European Commissioner Hahn for Regional Policy (former Austrian Minister of Research and Higher Education) plans to have special funds for research projects within the European regional programmes after the current funding budget period (2007-2013). Potentials in building and fostering networks to have special regional funding for the Danube Region, similar as the Mediterranean Region.

Most of the structural funds were not fully used and the usage of these funds depend strongly on the engagement of institutions. Positive example: University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca. Other universities are not so committed to acquire money from the structural funds. The funding for mobility programs could be better, but structural funds are not fully used. It would be desirable to have a prioritisation for research about the Danube Region in these funds.
Developing regions downstream profit from the leading regions at the upper Danube: example of the two large hydraulic and environmental engineering laboratories in the upper and lower part of the Danube. Twinned laboratories have both a scientific and a cooperative meaning. Such projects can help to stop the so-called “brain drain” in the region around the lower part of the Danube as highly specialised academic jobs are created in research facilities monitoring the environment of the Danube Region.
Including Danube Region specifics’ in curricula of university programmes: University of Natural Resources and Applied Life Sciences (Universität für Bodenkultur Wien, BOKU) is planning a special master’s programme on the Danube Region. Need for such curricula exists, especially in Austria. Many Austrian companies have big investments in the Danube Regions and need highly qualified people with regional knowledge. This master programmes shall include an exchange semester where students will obtain cultural knowledge about the region and its countries.

3.4.3. Supporting the Competitiveness of enterprises

The Danube Region has a strong potential for economic growth, but is divided in regions with a strong developed economy with “well established innovation support systems” and regions that lag behind. The potential for modernisation, especially in technological and organisational matters is big, but these modernisations are needed urgently. Many enterprises based in agriculture, are rural and traditional. Possibilities to achieve more coherent and improved frameworks in order to support the competitiveness of the Region and to draw benefits from the growth potential are for example long term transnational cooperation networks between research facilities and the economy. Clusters and centres of excellence are meant to be fostered and links to education and research policy should be established. The EUSDR focuses on Small and Medium Entrepreneurs (SMEs) and tries to build support agencies for SMEs. The Single Market is not yet established in the Region, as some of the more recent EU members lag behind on the implementation. The service industry suffers most under these implementation gaps, while competition on taxes and migration flows still exist. A big problem area is connected to the transport bottlenecks in the region, which disturb regional and international mobility and trade opportunities.
The biggest potential for economic growth, however, lies in the sectors where the Danube Region has existing strengths and these sectors are meant to be prioritised by the EUSDR (European Commission 2010c).

Many of the actions of PA 8 are connected with PA7, as there are strong links between higher education and economic growth. As Năstase and Hodoroabă state: “It has been proved beyond doubt that companies that have invested in education have reformed the economies in a modern way, recorded high growth rates and have redefined the foundations of sustainable competitiveness” (Năstase and Hodoroabă 2010, 60).

Developing SMEs

In June 2008 the “Small business act for Europe” was decided by the European Commission. 10 principles were set, which should lead to better implementation on SME issues on national and EU level (European Commission 2010g).

Within the EUSDR the “Small business act for Europe” should also find its way to the Danube Region. Starting a business must be easier. SMEs need access to secure financing. Existing EU funding possibilities should be used more efficiently. To push trade in the Danube Region existing structures and “business support centres like SEECEL should be used (European Commission 2010a).

SEECEL – South East European Centre for Entrepreneurial Learning

The idea of SEECEL is to force better developed learning economies.

Initiated by the republic of Croatia, SEECEL was founded in October 2008 with 8 participating member states, which are Albania, Bosnia and Herzegovina, Croatia, Kosovo, Macedonia, Montenegro, Serbia and Turkey. There are four main issues (SEECEL 2011):

- Development of the entrepreneurship key competence
- Promotion of entrepreneurship at the third level education within non-business disciplines;
- Enterprise-driven training needs analysis;
- Dissemination and promotion of good policy and good practice

The major part of funding is provided by the European Commission. Additional Croatia, as the host country, is financing SEECEL (SEECEL 2011).

3.4.4. Marginalised communities

One of the main issues of Pillar C is marginalised communities, which suffer from social and economic exclusion and are at risk of poverty or even live in poverty. 80% of the Roma communities in Europe, which suffer most from the above effects, live in the Danube Region. One goal of the EUSDR is to address these issues, also to prevent EU-wide events of Roma trying to escape this situation (European Commission 2010b).

“Roma” serves as umbrella term for the ethnic groups of people who have their origin in India and spread around the world during the last centuries. During that process, they developed their own culture and language. South-East European chronicles about travelling people from the 14th century, could mark the beginning of first immigrations of Roma in Europe. Although there cannot be set a fixed date when the settlement of Roma in Europe really began (Samer 2003a). Estimations about the number of Roma in Europe are varying between 8 and 15 million, yet

there can be said that the majority has settled in Eastern Europe, especially in Romania, Bulgaria, Hungary and Slovakia (Süddeutsche 2011). Roma are the largest ethnic minority in Europe without an own state territory. Since their settlement in Europe began, racism, discrimination and segregation accompanies Roma communities. During the time of National Socialism between 250 000 and half a million Roma died in concentration camps, labour camps and mass shootings (Samer 2003b).

Today many Roma in the Danube Region are living under third world standards with no drinking water, no sewage system, no energy supply and they are vulnerable for risks like floods, ground instability and dangerous waste (European Commission 2010a). The need for direct action is unquestionable.

According to the Action Plan, two examples of projects, concerning the situation of Roma in the Danube Region are „to improve the living conditions of Roma communities“ and „to implement the Roma dialogue with non-Roma“ (European Commission 2010a, 73). As to see, there's a split-up into facing acute problems and a long-term commitment. Additional to their basic needs, Roma have to be integrated in European society to open them up opportunities and strengthen their skills. These two main focuses also describe the link between poverty and segregation. The Action Plan also proposes to implement on-going initiatives like the Decade of Roma and the EU Roma Platform. During the last decade, several institutions and projects about Roma issues have been started in Europe. Either they were initiated by the EU itself, or are in close cooperation with the EU, or established independently. Three important initiatives of the last years are presented below.

The Roma Decade and the Roma Education Fund

The *Decade of Roma Inclusion* was founded in 2005 and is planned to end in 2015. Two main drivers in the initiating process have been the World Bank and the Open Society Foundations. It focuses on four main areas, which are education, employment, health and housing of Roma. The 12 participating countries are Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, Macedonia, Montenegro, Romania, Serbia and Spain, which brings out the focus on Central and Eastern Europe. Every member state had to work out action plans implementing the four main areas. The Roma Decade does not provide any extra funding. Participation of Roma plays a big role in the Roma Decade. They are involved in every stage of the Decade (Roma Decade 2011).

Out of the Decade of Roma the Roma Education Fund (REF) was founded and holds a leading part in the Decade of Roma. Its goal is “to close the gap between in educational outcomes of Roma and non-Roma” (Roma Education Fund 2011, no page). REF's running programmes are including project support, scholarships in secondary and tertiary education, reimbursable grants, cross country learning, early childhood education, policy development and capacity development, after school support, adult education and desegregation programmes. Since the REF started its work, the numbers of applications received have increased every year (Roma Education Fund 2011).

After 5 years since founding the Roma Decade, the Open Society Foundations evaluated proceedings. In their report “No Data - No Progress: Country Findings” (2010) the institution declared the information deficit about Roma communities in the majority of the participating countries as the main problem in initiating and adapting projects to their particular situations (Open Society Foundations 2010).

EURoma

EURoma acts as a networking platform and was founded in 2007 as a result of an working seminar organised by Fundación Internacional y para Iberoamérica de Administración y políticas Públicas (FIIAP). FIIAP presents itself as a European institution, which operates from Spain and has its focus on democratic governance (Poyato 2011). Although it is no EU institution, the platform also cooperates with the European Commission. At EURoma 12 EU member states are participating. Within the platform three working groups set their focuses on education, employment and social inclusion (EURoma 2011). According to the EURoma Report (2010), the platform is not able to present proceedings because of “lack of data and evaluation of projects” (EURoma 2010, 90).

The EU Roma Summits and their achievements

Organised by the European Commission institutions of the EU, national governments and other organisations who are concerned about Roma issues have the chance to meet each other. It's an opportunity to discuss issues about Roma on highest EU level. The Summits are organised every two years (European Commission 2011f). On the First Roma Summit in 2008 the idea of an EU Roma Platform came up. The platform should bring together all relevant stakeholders for exchanging knowledge and reflect on proceedings about Roma inclusion. Together with the

European Commission, the EU presidency organises the meetings. Since then there have been five meetings (European Commission 2011g).
On the Second Roma Summit in 2010 the European Commission forces “social and economic integration of the Roma in Europe” (European Commission 2011g s.p.) and published their Roma Report, which declared, that positive proceedings in the years 2008 and 2009 have not changed concrete situations of Roma and there is an stagnating situation since then (European Commission 2010h). In April 2011 the European Commission presents “An EU Framework for National Roma Integration Strategies up to 2020” (European Commission 2011h, 1).

Hungary

In Hungary, 55% of Roma households do not have one member employed and almost 30% of the Roma aged between 16 and 64 reported themselves as not working. One third of the Roma households in Hungary only have one income. Only 10% of the households consist of one single person. Hungary set up plans to change this situation trough education. At least 5 000 young Roma should attain higher education, while other 20 000 Roma should be obtain a “marketable profession” and 80 000 adult Roma with only primary education shall be given an “additional skill programme” with for example IT-Courses. However, a decision, how these aims can be achieved and funded is yet to be made (Rindt 2011).

3.5. Pillar D - Strengthening the Danube Region

At the behest of Austria and Germany among other countries, Pillar D was incorporated in the EUSDR (BMEIA, 2010). The main topic is structured in two PAs (European Commission 2010a):

- PA 10: TO STEP UP INSTITUTIONAL CAPACITY AND COOPERATION
- PA 11: TO WORK TOGETHER TO PROMOTE SECURITY AND TACKLE ORGANISED AND SERIOUS CRIME

Pillar D focuses on the improvement of coordination, cooperation and procedures by democratic institutions, public administration and law enforcement authorities at local and national level and, most of all, within the Danube region. Its main aim is to strengthen efficiency and integrity in public administration, encourage participation of civil society and fight corruption, organized and serious crime to build confidence amongst all stakeholders, stimulate integration of candidate and potential candidate countries and ensure political, civil and administrative structures and security for smart, sustainable and inclusive growth (European Commission, 2010a).

Potential funding can be received from the Structural Funds[2], contributing some 3.4 Billion Euros to “Technical Assistance”, which splits up in “Preparation, implementation” and “Studies and communications”, providing 2.5 and 0.9 Billion Euros respectively (European Commission 2010a).

3.5.1. Institutional Capacity and Cooperation

As was already mentioned before, the Danube Region is characterised by diverging levels in the state of economic, social and ecological development. Different levels of economic growth, varying political backgrounds and stability, diverse standards concerning legislation (in general

[2] Details of funds and instruments included are given in chapter 3.1. Funding of the EUSDR.

as well as in particular for environmental issues) necessitate a gradual rapprochement and a stronger sense of cooperation. This section of the report focuses on the basic question of what sustainable development means in the framework of public administration and institutional capacity on the one side and how this sustainable development could possibly be measured and be enhanced by the EUSDR on the other side. PA 10 is coordinated by Austria in cooperation with Slovenia.

3.5.1.1. Sustainable Public Administration

“Sustainability” has been adopted as part of management strategies in the private sector since the early 1990ies. Trends like New Public Management and the development towards a small government have been identified as important measures to be put in action. But in general, sustainability as an integrated approach has only become a topic in public administration about 10 years ago. The EU Sustainable Development Strategy was first launched in 2001, revised in 2006 and reviewed in 2009 (European Commission 2011). National Sustainability Strategies were adopted in 2002 in Austria and Germany or 2004 in the Czech Republic, to name a few examples. (Achener Stiftung Kathy Beys 2011). Still, these efforts seemed to neglect the field of sustainable public administration as an independent subject focus (Institut für den öffentlichen Sektor e.V. 2011).

The aforementioned strategies have been enacted on national levels to be implemented down to community level. Communities themselves have taken the initiative, mainly by realising “local agenda 21” projects and initiatives (Institut für den öffentlichen Sektor e.V. 2011).

Nevertheless, in the wake of the ongoing financial and economic crisis shortcomings in the public sector can no longer be covered up. The public finance management in many EU countries shows extensive potential for improvement. One doesn’t have to look all the way to Greece, countries like Austria and Germany have piled up public debts, too. The level of gross debt in both countries exceeded 70% of the respective GDP in 2009 (OECD 2011). Trying to get a grip on their public finances – restrained economic growth, rising levels of public debts, etc. – governments are confronted with ever declining public confidence.

Sustainable Public Administration in the Danube Strategy

Against the background of increasing pressure towards the public sector in many European countries sustainable development is steadily gaining importance, not only as being initiated by but rather within the public administration itself. Especially fiscal sustainability is a matter of concern to all countries in the Danube Region, regardless of their relation to the EU.

Consequently, one of the proposed aims in PA 10 is "To increase knowledge of public finance management" (within the Action "To combat institutional capacity and public service related problems in the Danube region") (European Commission 2010a, 78). Education and training, improvement of skills and exchange of experience shall be provided and promoted by specialised educational institutions like the Centre of Excellence in Finance (Ljubljana, Slovenia) or the Regional School for Public Administration for the Western Balkans (Danilovgrad, Montenegro) (European Commission 2010a).

3.5.1.2. Danube Civil Society Forum

Participation of the civil society is considered an important approach in the EUDSR. As a macro-regional strategy of a scale hard to imagine the success of the EUDSR depends largely on its acceptance among the public at the end. Honouring this fact the Action Plan includes the Action "To establish a Danube Civil Society Forum" (European Commission 2010a, 79).

The Danube Civil Society Forum (DSCF) was founded in Eisenstadt on June 30th/July 1st 2011, counting 112 members as of 1st August 2011. It presents itself as a platform enhancing the networking initiatives and civil society cooperation in the Danube Region in the framework of the EUSDR. One of its main functions is seen in the support of interactions between the civil society and both public and private entities across all levels of government. In addition connections to organisations in international and intergovernmental frameworks based in the region are favoured, with the DSCF defining itself as a hub for all the aforementioned stakeholders (DSCF 2011a).

The organisational chart of the DCSF is presented in Figure 13. The General Assembly consists of all regular (paying) members and non-voting members (so called observers) and is set up to

meet every two years. It is the main decision making body in the DCSF. Besides the General Assembly, the Executive Committee and the Secretariat are vested with powers, basically implementing the decisions made by the General Assembly (DSCF 2011b). The four Working Groups were established to deal with networking and project related topics in accordance with four pillars of the EUSDR. In order to guarantee sufficient coverage of important subjects the Working Groups are further divided into specialised Sub-Working Groups, concentrating on aspects of regions or urgent issues (DSCF 2011a).

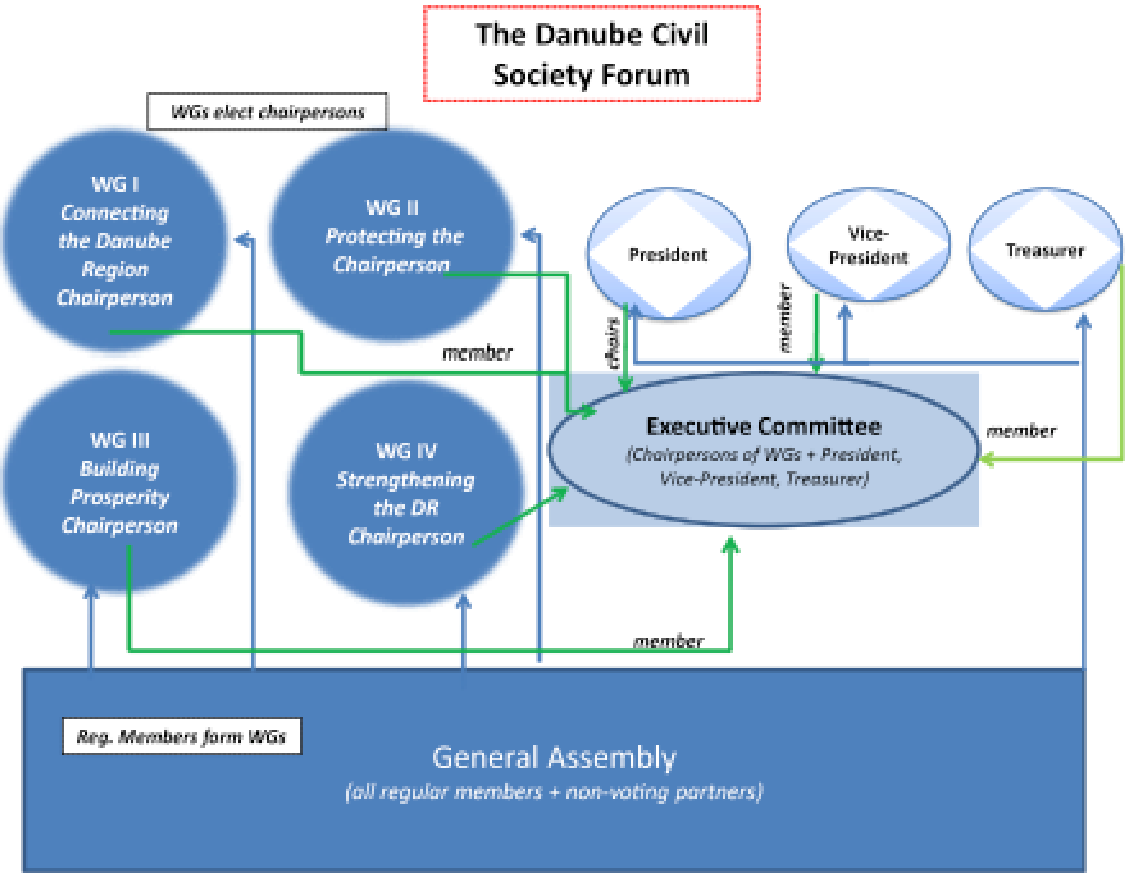


Figure 13: Organisational chart of the Danube Civil Society Forum
(Danube Civil Society Forum 2011)

The main objectives of the DCSF as stated in their 2011 Statues are:

- To support and promote the Danube Strategy following the principles of respect for democracy and human rights, the rule of law, good governance, principles of market economy and social and environmental sustainable development.

- To support the existing non-governmental, non-profit organizations and their networks, the creation of independent and autonomous non-governmental organizations, to strengthen the capacity of civil society and to support, assist and coordinate the efforts of its members.
- To promote a culture of dialogue and cooperation between civil society organizations and between civil society and public and private actors in the Danube Basin.
- To promote dialogue and solidarity between peoples and cultures.

The DCSF collects membership fees amounting to 100 Euros from both regular and observer members but still needs secure and continuous funding possibilities, at least for the period of 2011 to 2014 (DCSF 2011b).

3.5.1.3. Cooperation in border regions

As Soedjati Djiwandono once put it geographic proximity is no guarantee for frictions free relations but quite the contrary it is exactly what hinders good and friendly relations between neighbouring countries. To improve the situation in border areas special initiatives have been started.

State of the art in Cross-border Cooperation

Cross-border Cooperation (CBC) is one of the three dimensions of the European Territorial Cooperation 2007-2013 and is focused on the support and promotion of regions in the proximity of both internal and external borders of the European Union. Transnational Cooperation on the other side assists cooperation among greater regions such as the Mediterranean Area or the Baltic Sea Region, whereas Interregional Cooperation improves interaction between stakeholders on local and regional levels (INTERact 2011b). This chapter gives information about available funding by the EU and current harmonising efforts in the field of Cross-border Cooperation.

Territorial cooperation presents a major field of interest, both in terms of financial means and number of programmes. Within the EU borders roughly 7,8 billion Euros are available with another 9,4 billion Euros for IPA-CBC and ENPI-CBC funding going beyond EU borders. As of 2011 territorial cooperation was carried out in 75 cross-border and 13 transnational

programmes. Additionally three networking programmes (URBAN, ESPON and INTERACT) as well as one interregional programme (INTERREG IV C – facilitating cooperation between national, regional and local authorities) are included (INTERact 2011b).

The aforementioned 75 CBC programmes are spread across the whole EU territory of which roughly 20 programmes are located within the Danube Region. Due to the fact that the EUSDR comprehends both EU Members and non-EU Members different types of funding possibilities have to be applied, depending on the nature of the cooperating states. If CBC takes place within the borders of the EU the programmes and funding rules of the EU apply. In cases where external borders are included two special financing instruments are applicable, namely the IPA-CBC and the ENPI-CBC. The EU currently finances 10 IPA-CBC and 13 ENPI-CBC programmes (INTERact 2011b).

CBC programmes across Europe are illustrated in Figure 14. Cross-border areas benefiting from the programmes are marked in green. Red squares identify cooperation between EU-member countries, whereas programmes reaching beyond the EU borders are labelled with blue squares.

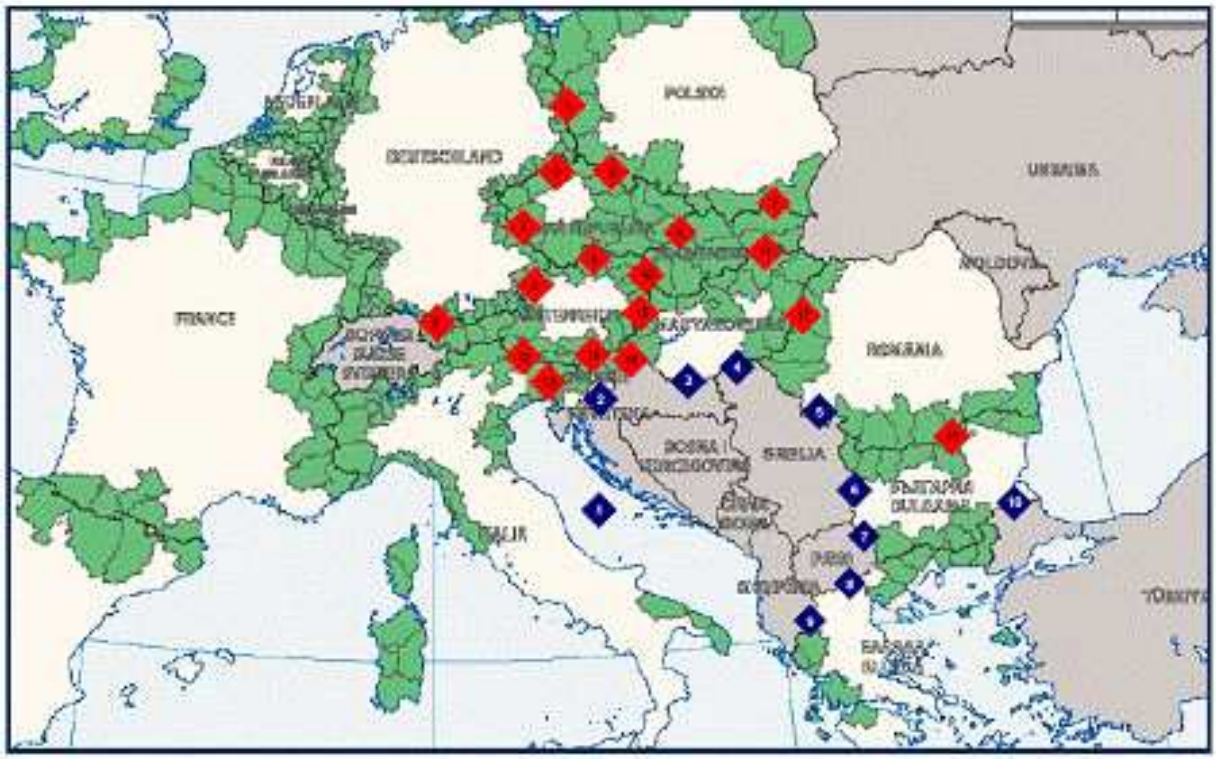


Figure 14: CBC programmes across Europe
(EU Förderagentur Stadt Wien no date)

Each (IPA-/ENPI-) CBC Programme is described on its own dedicated website, providing information about i.a. programme objectives, partners, financing and the eligible area. CBC programmes in the Danube Region are implemented between Austria and Hungary, Hungary and Slovakia or Austria and the Czech Republic for instance. All CBC programmes pursue the goals of improved cooperation and sustainable development in the respective cross-border area.

IPA-CBC programmes

The Instrument of Pre-Accession Assistance (IPA) is a special funding instrument, designed to give Candidate and Potential Candidate States targeted support in the process of Pre-Accession.

IPA covers the following 5 categories:

1. Transition Assistance and Institution Building
2. Cross-Border Cooperation
3. Regional Development
4. Human Resources Development
5. Rural Development (INTERact 2011c).

IPA-CBC programmes are realised between Slovenia and Croatia, Hungary and Croatia or Romania and Serbia. All areas implementing IPA-CBC programmes are shown in Figure 15. Within the Danube Region IPA-CBC is mainly a topic on the EU external borders to the Western Balkan countries.

Figure 15: Overview IPA-CBC areas
(Stockhammer 2011)

ENPI-CBC programmes

CBC is said to be a priority within the European Neighbourhood and Partnership Instrument (ENPI). In the according CBC strategy four key objectives have been identified. The first target is set in order to promote the economic and social development in border areas. The second is more vaguely formulated and addresses common challenges. The third objective aims at the establishment of efficient and secure borders. The fourth goal concentrates on people-to-people cooperation (European Commission 2011e).

In total 15 CBC programmes have been created under ENPI with a sum total of 1 118 434 million Euros in the current programming period 2007-2013, with additional funding provided by the ERDF (European Commission 2011e).

Examples for ENPI-CBC programmes are found between Romania, the Ukraine and the Republic of Moldova or Hungary, Slovakia, Romania and the Ukraine. One programme deserves particular notice – the Black Sea CBC – as it comprises as many as eight countries (Bulgaria, Greece, Romania, Turkey, the Ukraine, Armenia, Georgia and the Republic of Moldova), four of which are taking part in the EUSDR.

CBC in the Danube Strategy

The promotion of CBC is described in the Action "To facilitate the administrative cooperation of communities living in border regions" (European Commission 2010a, 80). Especially hindering conditions in the fields of administration and legislature shall be reduced. A commonly known specific of border areas is the (potential) conflict between different sections of the population, most notably ethnic minorities. Despite the differences and disputes minorities are also interested in the improvement of cross-border relations and expressed their respective proposals repeatedly (European Commission 2010a).

The reduction of administrative and legal obstacles could lead to benefits on both sides, e.g. easier crossings, better cooperation of local authorities, and an improved business climate. The Danube Region has seen a long history of conflicts, which are not yet fully resolved. The first step in some regions is thus to bring together representatives in the process of solving issue-related problems rather than to hurry an emotionally loaded reconciliation as Dr. Busek put it (Busek 2011).

The monitoring of results by actions set in the framework of institutional capacity and cooperation can be measured by specific data for each country, e.g. the level of gross debt in relation to the GDP, number of public employees, amount of EU funds received in a certain period of time. But the question, if a certain improvement/development is solely affected by the EUSDR and its actions remains to be answered. The establishment of the DCSF was one of the first actions realised under the EUSDR - many more are to come in the next few months and years.

Interview with Dr. Johannes Eigner

Function:
i.a. National Coordinator Austria, BMEIA

Date: 22nd December 2011

Main points:
- The EUSDR marks the beginning of a new culture of cooperation in the Danube Region and the EU.

- Special funds for the EUSDR or other macro-regional strategies are not to be expected.

- The lessons learned by the EU Strategy for the Baltic Sea Region (EUSBSR: endorsed 2009) are hard to be transferred to the EUSDR as the Danube Region shows more complex interrelations than the Baltic Sea Region and its riparian states. One major finding from the EUSBSR implemented in the EUSDR is the inclusion of countries beyond the borders of the EU.

- Latest development in PA10: A financing forum is currently in the phase of establishment with the major goal to transfer know-how about funding possibilities and how to gain access to the various financial means provided by the EU. Target groups include SMEs and local authorities.

- A final evaluation of the EUSDR is not yet possible. It remains to be seen if the enthusiasm seen in the preparation stage continues in the implementation phase in the next few years. The success of both the EUSDR and the EUSBSR plays a pivotal role for the development of future macro-regional strategies.

Interview with Dr. Erhard Busek

Function:
i.a. Chairman of the Institute for the Danube Region and Central Europe

Date: 23rd December 2011

Main points:
- The central idea of the EUSDR is to bring together different stakeholders in the process of solving issue-related matters. Considering the long history of conflicts with many of these not yet fully resolved it is a dynamic process of learning from and about each other.

- Although it is still too early to evaluate the EUSDR and its benefits for the participating countries some of the priority areas included show more progress than is widely perceived, e.g. cultural cooperation's like the EXIT Festival.

- Investing in young people and their skills is an important and powerful instrument, especially educational institutions have to be improved and research cooperation has to be supported.

- The common interpretation of still available budgets (100 billion Euros in sum, roughly 50% not used) is misleading – the truth is that a substantial part of the budget has already been earmarked for a specific purpose.

- Commissioner Hahn and the DG Regio should become an authority for the EUSDR that is able to exert pressure, for instance on countries, more precisely on their representatives regularly not attending meetings under the EUSDR.

3.5.2. Security and Organised and Serious Crime

Cross border criminality is increasing. The main causes are the improving mobility, no border controls within the EU and the European Union´s visa policy concerning the Western Balkan states, whose citizens are exempt of the requirement of visa for short stays up to three months (European Council 2010d). Also organised crime is changing. Different group structures with diverse methods and impact on society developed in the last years. In addition, a trend towards multi-commodity and poly-criminal activities occurred. According to INTERPOL, the global economic crisis had and still as its impact on organised crime, since lower incomes and the threat of unemployment made specialists in the transport, financial, real estate, legal and pharmaceutical sectors more vulnerable to corruptive influence. Caused by their lower prices, illicit commodities, especially counterfeit goods, are better accepted by society.
In the last years, internet technology has become a key facilitator not only for high tech crimes, like cyber crime, payment card fraud or distribution of child abuse material, but also for offline organised crime as it is used for secure communication, marketing and recruitment of victims of trafficking in Human Beings and the supply of counterfeit goods and drugs (Europol 2011b).

3.5.2.1. Organised and Serious Crime in the Danube Region

The following overview of fields of Organised and Serious Crime within the Danube region is based on the recent crime reports provided by EUROPOL, including the Organised Crime Threat Assessment 2011. Its intention is to point out the main areas of organised crime with relation to the Danube region and their main actors. Since the only available material was provided by EUROPOL, it was impossible to compare or cross check the containing information. So all statements concerning criminal groups and their national or ethnical background are based on EUROPOL´s official reports and do not represent the personal opinions of the authors.

Drug related Crime

The distribution and trafficking of drugs is commonly controlled by criminal groups dealing with more than one drug to maximise profits. These groups also diversify their criminal activities and

enter or contact other crime fields and use their infrastructure, like trafficking in Human Beings (THB). They also cooperate with one another to spread risk and costs, by sharing loads. While most of these criminal groups consist of members sharing the same national or ethnical background, there is also a multi-national trend, due the requirement of operation – management on extended routes concerning different continents. Mostly container shipments are used in the trafficking of cocaine, heroin, cannabis and synthetic drug precursors destined for the EU.

Strong affected areas of drug related crime

- The Western Balkan region is a hub for drug trafficking. Heroin and cocaine are stockpiled here before being transported to the EU and cannabis for EU consumption is cultivated in the region. Synthetic drugs from the EU travel in the opposite direction by the same route.
- Hungary is emerging as a repacking and transit zone for both heroin and cocaine, since the Black Sea Route and the Balkan Routes have create a bottleneck to the North and West. An increasing use of these routes for drug trafficking will lead to a greater concentration of criminal logistics in Hungary.
- The most prominent poly – drug groups in the Danube region are related to Albanian speaking organised crime. They are active in trafficking heroin, cocaine, synthetic drugs and cannabis. Their financial resources have enabled them to interact with criminal organisations in source areas for drugs as well as to access other criminal fields. Some of their profit is used for support organisations for the former Kosovo Liberation Force.

Illicit drugs trafficked in the Danube region and their origin

- Heroin: The majority of illicit heroin entering the EU is sourced from Afghanistan. Its transport takes course either via the Black Sea Route or the Balkan Routes. Most criminal groups dealing in trafficking heroin to and within the EU, have Turkish or Albanian origins. They have established heroin stockpiles in the Western Balkans, from which further distribution is organised by local groups.
- Cocaine: The majority of illicit cocaine entering the EU is sourced from Colombia. It´s transported either by plane or container shipment to Western Africa, from where it's transported in the EU. Principle entry – points are Portugal and Spain, but the amount of

cocaine transported directly to Southern Europe via the Balkan Routes is increasing heavily. The trafficking of cocaine (designated for distribution in the EU) is also used by radical and terrorist groups like the Revolutionary Armed Forces of Colombia, Al Qaida in the Islamic Maghreb and Hezbollah to finance their operations.

- Synthetic drugs: can be produced closer to customers than heroin and cocaine, but need special know-how, especially in organic chemistry and pharmacy. Ecstasy is mainly produced in the Netherlands and Belgium and, since the demand in the Middle East increases, continues to be exchanged with heroin in the Western Balkans and cocaine supplied by Latin American groups. Amphetamine is produced increasingly by Bulgarian criminal groups for the Middle East and often exchanged with heroin. Methamphetamine, including Crystal Methamphetamine, is produced in the Czech Republic and the Slovak Republic and reports say it soon will be produced in Poland as well.
- Cannabis: domestic cultivation of cannabis continues to increase in the EU. Indoor cultivation is mostly apparent in Northern and East Europe. In the north part of the Danube Region, Vietnamese groups, often illegal immigrants working off their transportation fees, are prominent in the indoor cultivation of cannabis in the Czech Republic, the Slovak republic and Poland. In South East Europe and the Western Balkans both indoor and outdoor cultivation appear. Cannabis grown in Albania and the Kosovo region is distributed in Greece, Italy, Slovenia, Hungary, and also trafficked to Turkey, where Albanian speaking criminal groups exchange it for heroin. There is also a trend for outdoor cultivation by elderly citizens, who sell their harvest to criminal groups (Europol 2011b).

Trafficking in Human Beings

According to the crime report on trafficking in human beings in the European Union 2011 by Europol, most frequently reported criminal groups involved in THB in the EU with origin in the Danube Region are, ethnic Roma, Romanian, Albanian speaking, Hungarian and Bulgarian organised crime groups. Bulgarian and Romanian (mostly of Roma ethnicity) criminal groups are reported as probably the most threatening to society (Europol, 2011a).

Main areas of THB on basis of the way profit is made of the victims are:

- Sexual Exploitation
- Labour Exploitation
- Child Exploitation.

According to Europol´s assessment of current state and future, it is unlikely that there will be any immediate reduction in the levels of THB in Europe. Although the level of awareness amongst law enforcement and the judiciary has been raised and many countries took steps to prevent and combat THB, this crime will continue to have a major impact upon the EU.

Relevant legislation concerning the prevention and combating of THB:

- Palermo Protocol: The Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children, supplementing the UN Convention against Transnational Organized Crime of 2000. It was signed by all Danube region countries and ratified by all Danube region countries except Czech Republic (UNODC, 2008).
- The Council of Europe Convention on Action against the Trafficking in Human Beings It was signed by all Danube Region countries except Czech Republic and ratified by all Danube Region countries except Germany and Hungary (European Council, 2005).
- Directive 2011/36/EU of the European Parliament and of the Council of 5 April 2011 on preventing and combating trafficking in human beings and protecting its victims and replacing Council Framework Decision 2002/629/JHA (European Council, European Parliament, 2011).

Cigarette Smuggling

Lower penalties and still large profits in comparison to drug trafficking, cigarette smuggling is of increasing interest to criminal groups in the Danube Region. As a result of the global economic crisis, demand for smuggled cigarettes is increasing. The economic impact is significant, since the substantial losses to national and EU budgets are estimated about 10 Billion Euros per year.
Types of cigarettes being smuggled:

- Genuine cigarettes
- `Cheap whites´
- Counterfeits.

Within the Danube Region genuine cigarettes and `cheap whites´ are produced in Ukraine and Moldova. Big price differences are the main drive for smuggling cigarettes from these countries to countries with high taxes on tobacco like Germany, the UK and the Scandinavian countries. The most prominent `cheap white´ - brand is Jin Ling, which accounts for more than 20% of the illicit market in Germany. Another source area for “cheap whites” are the United Arab Emirates, from where cigarettes are smuggled to the EU, crossing the Danube region via the Balkan Routes.

While China is the main source of counterfeit cigarettes, which are smuggled to the EU per container shipments also via the Balkan Routes, illegal factories in Poland and Ukraine are also significant sources for the German illicit market. Cooperation between Ukrainian and Polish criminal groups has been a key feature in this case: companies in Ukraine delivered the tobacco, other ingredients passed through the Lithuanian port of Klaipeda, while production took place in Poland (Europol 2011b).

Counterfeiting

Due to the global economic crisis, social tolerance for counterfeits, already relatively high, has increased. Lower penalties, lower risk and high profits draw criminal groups involved in drug trafficking to the counterfeit sector. In addition to traditional textile brand counterfeiting and money forgery, the diversity of counterfeiting increases. Products like counterfeit toys, shoes, pharmaceutical products, medicine deodorants, toothpaste, and condoms, washing products, electrical items, food and beverages are distributed. Beside the distribution of counterfeits on street sales and unlicensed markets, the bargain of counterfeit commodities on the Internet has extremely increased, especially lifestyle drugs like Viagra, luxury goods and medicine. China continues to be the main source country for counterfeit commodities destined for the EU. Transported to Europe by container shipment through the transit free zones in the United Arab Emirates to conceal their origin and to decorate unbranded products with appropriate logos, via the Black Sea, Adriatic or Ionic ports, they are stored in certain Western Balkan areas, from where they are distributed. Beside Italian mafia organisations like Camorra or ‘Ndrangheta, Bulgarian organized crime groups continue to be involved in counterfeit euro production. While Bulgarian notes are of a high quality, the distribution network is not particularly extensive. Bulgarian producers cooperate mainly with Bulgarian, Romanian and Albanian criminal groups to circulate banknotes. Same channels as for other illicit commodities are used for the

distribution. Although Italy appears to be the key distribution point of both counterfeit money and commodities, increasing activities concerning counterfeit distribution in the Western Balkan area and Bulgaria have an impact on the Danube region (Europol 2011b).

Weapons Trafficking

The Western Balkans are expected to remain a key source of heavy firearms trafficked into the EU, since large amounts of weapons from the Yugoslav wars remain beyond the authorities control in Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, the Kosovo region, Montenegro and Serbia. Organised Crime groups active in weapon trafficking are Albanian-speaking groups, Crime groups, comprising individuals from the former Yugoslavia and recently Outlaw Motorcycle Gangs with Scandinavian background. Weapon trafficking is strongly linked to THB and drug trafficking, using the same routes. Although the number of incidents within the EU involving heavy firearms, like assault rifles, machine guns and rocket launchers, has increased, criminals at all levels still tend to prefer smaller firearms.

The use of heavy firearms is part of the wider threat of access to firearms in general, whereby criminals are able to vary the type of firearm they use, including converted and lawfully held firearms (Europol 2011b).

Organised Property Crime

The continuing economic disparity between the Member States of the Danube Region, the enabling of mobility within the region, due the open visa policy of the EU and the affinity of criminal groups engaged in property offences to high level violence are all facilitating factors for organised property crime. Most criminal groups engaged in this criminal field have origins in the Western Balkans and Eastern Europe. Offences committed range from organised vehicle theft and burglaries to armed robberies (Europol 2011b).

Georgian criminal groups are highly organised and hierarchically structured. In the Danube region, they operate mainly in Austria, the Czech Republic and Germany (Europol 2011b).

Albanian speaking criminals are known for their use of extreme violence, including against burglary victims. Many group members have a secret service, police or paramilitary background (Europol 2011b).

Polish and Romanian organised crime groups commit increasing numbers of ‘hit and run’ property offences. The high level of mobility of these and other groups is a significant challenge for authorities (Europol 2011b).

3.5.2.2 Actions of the EUSDR Action Plan of PA 11

Since EUROPOL is the law enforcement agency of the EU, it’s concerned to nearly all actions of PA 11 of the Action Plan of the EUSDR. It cooperates with all Danube Region Member States and provides information, expertise and organisation of cross – border operations on request.
Its mission is to support its Member States in preventing and combating all forms of serious international crime and terrorism (European Council 2009). In November 2010 EUROPOL has signed a strategic cooperation agreement with all non–EU Member States of the Danube region. It also cooperates with the EU agencies FRONTEX, OLAF, CEPOL and the European Monitoring Centre for Drugs and Drug Addiction.

All EUROPOL partners deploy Liaison Officers at EUROPOL Headquarters in The Hague as contact points to their national law enforcement authorities. EUROPOL’s main task to support is to provide information, analysis and expertise that are provided by the support centre for law enforcement operations, the criminal information hub and the Centre for Law Enforcement Expertise.

EUROPOL Liaison Officers have access to the Secure Information Network Application – SIENA. It is used for the management of exchange of operational and strategic crime related information between the Member States, non – EU partners and EUROPOL.
Analysis is at the core of EUROPOL´s activities. The delivery of this work takes place within the framework of an analysis work file (AWF). In the AWF, analysts work together with organised crime and terrorism specialists to gather criminal intelligence. Each AWF is dedicated to a specific crime field and within, Joint Operation Teams, can be set up for specific operations. Every year EUROPOL publishes an Organised Crime Threat Assessment, based on the analysed data (EUROPOL 2001c).

Due to the mission and method of EUROPOL and the signed agreements with the non–EU Member States of the Danube region following Actions of the Action Plan of the EUSDR could be started soon or are already in progress.

One central action within PA11 is “To support the Danube states in the administrative cooperation and improvement of qualifications of law enforcement, judicial authorities and other services” (European Commission 2010a, 82)

Since the missions of EUROPOL and EUROJUST include initiating the exchange of information and knowhow, this action is already in progress. Especially the development of the EU centre for Law Enforcement Expertise and the EUROPOL Platform for Experts on different topics is a good example (Europol 2011c).

Another action is “To improve target collection and share key criminal information; to draw a picture of the most significant threats in the countries involved; to produce a Serious and Organised Crime Threat Assessment (OCTA) for the Danube Area” (European Commission 2010a, 84)

In the chapter “Conclusions and Future Strategic Considerations of EUROPOL OCTA 2011” it is written: “The systematic mapping and profiling of criminal networks on a regional basis would enable EU law enforcement to target and disrupt the activities of the largest and most threatening groups. Meanwhile, the concentration of criminal logistics in hubs in and on the border of the EU and a proliferation of trafficking routes suggest that an operational focus custom made for regions, supported by a common EU architecture and information systems, would be the most effective way of tackling transnational organised crime” (Europol 2011b).

This indicates the tendency to develop regional AWFs and OCTAs, including the Danube region.

The EUSDR includes the action “To strengthen the cooperation of Europol with Southeast European Co-operative Initiative – Regional Centre for Combating Trans-border Crime (hereinafter: SECI/SELEC)” (European Commission 2010a, 84)

In the OCTA 2011, EUROPOL points out, that in light of the continued prominence throughout the EU of Albanian speaking criminal groups, strategic and operational partnerships with authorities in the Western Balkans will be increasingly important (Europol 2011b).

According to a press release on 7th June 2011 by the Austrian BKA concerning a meeting of Austrian minister of interior Johanna Mikl – Leitner with Europol Director Rob Wainwright, EUROPOL supports the PEP project, led by Austria. Its aim is to improve the professionalism and efficiency of police work of Western Balkan law enforcement authorities and adjust it to a European level. Also the cooperation between EUROPOL and SECI shall increase, using Synergies in analysis to reduce double work. A EUROPOL Liaison Officer was send to SECI as a consultant in analysis work (BKA 2011).

In the field of virtual criminality the Action Plan states the action “To intensify the prosecution of Internet crime (cybercrime)” (European Commission 2010a, 85)

Due Internet criminality is a global issue, this action is pursued in a bigger frame. Concerning this topic the action plan of the internal strategy of the EU says:

By 2013, the EU will establish a cybercrime centre, through which Member States and EU institutions will be able to build operational and analytical capacity for investigations. The centre will improve evaluation and monitoring of existing preventive and investigative measures, support the development of training and awareness-raising for law enforcement and judiciary, establish cooperation with the European Network and Information Security Agency (ENISA) and interface with a network of national/governmental Computer Emergency Response Teams (CERTs). In liaison with Eurojust, CEPOL and Europol, Member States are encouraged by 2013 to develop their national cybercrime awareness and training capabilities, and set up centres of excellence at national level or in partnership with other Member States. These centres should work closely with academia and industry (European Commission 2010e).

As written above, since there is cooperation between EU agencies, Member States and non – EU Member States of the Danube region in several projects and strategic agreements, the cybercrime centre will be available for all Danube region countries.

The last action considered in this report but surely not the last to be implemented is “To develop further well-functioning border-management systems” (European Commission 2010a, 85)
As of February 2011, Frontex had concluded working arrangements with the competent authorities of all non-EU Member States of the Danube Region (Frontex 2011).

In February 2008, the Commission offered Member States a roadmap for gradually developing a European Border Surveillance System (EUROSUR), with the main purpose of preventing unauthorised crossings at the EU’s external borders, reducing the number of illegal immigrants losing their life at sea and increasing the internal security of the EU as a whole by helping to prevent cross-border crime. EUROSUR should provide a common technical framework for streamlining day-to-day cooperation and communication between Member States’ authorities and facilitate use of state-of-the-art technology for border surveillance. One key operational objective should be to share information between existing national and European reporting and surveillance systems (European Commission 2008).

Started in 2008 the development of EUROSUR is still in progress. In December 2009 national coordination centres of Finland, France, Italy, Poland, Slovakia and Spain connected with FRONTEX coordination centre started a pilot project, testing the network in a daily basis.

In 2010 FRONTEX started the technical implementation on EUROSUR. Next steps are building up border surveillance infrastructure, cooperation with third countries, especially on the Western Balkan and research and development for improvement of surveillance tools.

Long-term aims are (European Commission 2011a):

- EUROSUR shall be operational by 2013,
- The exchange of information of interest in customs and defence available by 2015.

4. Discussion

As an international river many parties want to benefit from it. Because of the different kinds of usage entitlements and demands on the river the Danube is a multifunctional system. Developments in this system should therefore be planned with a holistic view on its consequences. In most cases the EUSDR represents such a policy. Nevertheless, there are of course conflicts between the interests of the pillars, or even within the pillars. Because of this, coexistence and cooperation are the key words for a sustainable development in the Danube Region.

The following section outlines the potentials found within the four pillars of the EUSDR for a sustainable development. The chapter closes with the description of potential synergies and conflicts between the pillars, with conflicts mainly resulting from different definitions of the term „sustainable“.

4.1. Potentials within the pillars of the EUSDR

Potentials for connecting the Danube Region

As an international river many parties want to benefit from it. Because of the different kinds of usage entitlements and demands on the river the Danube is a multifunctional system. Developments in this system should therefore be planned with a holistic view on its consequences. In most cases the EUSDR represents such a policy. Nevertheless, there are of course conflicts between the interests of the pillars, or even within the pillars. Because of this, coexistence and cooperation are key the words for a sustainable development in the Danube Region.

The first priority area, Mobility and Multimodality, has integrated principles of sustainability. Particularly the waterways show high potential for sustainable development. The modernisation of the Danube fleet, a more efficient energy use (e.g. modern engines, RISS) and multimodality (e.g. optimised conjunction of vessels and trains in ports) help to decrease the ecological impact

of waterway transport. On the other hand, an intensification of navigation on the Danube may have negative effects on the river's ecosystem. Therefore, the dialogue and cooperation between Via Donau (coordinators of the waterway projects) and environmental experts and NGOs is essential for the realisation of the EUSDR. According to Simoner (Via Donau) and Baumgartner (Naturfreunde) the NGOs are involved in the further development of waterway transport on the Danube River.

Further, the Danube Strategy has great potentials to promote sustainable tourism and cultural understanding. There were many projects in this field prior to the adoption of the strategy, yet there are more transnational progresses since the strategy was endorsed and it can be noticed that people from different political or commercial areas discuss and think about conclusions that are sustainable and positive for all sides. Tourism depends on the wealth and the stability of the region. Therefore the financial crisis in Europe might affect the development of tourism negatively. Right now there is a lack of monitoring of the current actions, but there are already plans being made to compensate this shortcoming. For example, Naturfreunde plans to monitor the tourist development in the Danube Delta with special regard to sustainability. Transnational hike- and bike trails support the common identity of the Danube states and strengthen peripheral regions without big impact on the landscape.

As the cultural diversity is one of the main strong points for tourism in the Danube Region, the tourism should be aware to protect and not destroy this heterogeneity. Tourism often has negative impacts on the environment.

Especially in the energy sector one can find big potentials for the Danube Region. Renewable energies are able to reduce the dependency on energy imports and to lead Europe towards more energy sovereignty. Focusing on individual regions and own resources will secure additional jobs. Further potentials can be reached by creating more competitive markets for energy supplies, by supporting networks for storage and electricity production and by increasing the regional added value.

As a shortcoming, the EUSDR has no perspectives for the decoupling of economic growth and energy consumption. Moreover, the development of the energy sector in the Danube Region needs more legally binding targets. Although the directive 2009/28/EG and Energy 2020 defined

a legal framework, still these legal conditions are not sufficient to reach a sustainable handling of energy. The variety of interests of the Danube states delays the development of a united sustainable energy policy (e.g. gas supply Russia/Serbia). Another criticism is that the nuclear road map prescribes too long transition periods. The Danube Region should take care that the transition does not become a permanent condition. All in all the EUDR has the potential to make a positive change in the energy policy of the Danube Region, but faces a lot of challenges. As the EUDR is in a very early stage, it is hard to evaluate it objectively.

Potentials concerning environmental issues

The EUSDR aims to avoid conflicts between different priorities, and for this reason to generate win-win situations; in this context it may support cooperation agreements, e.g. the “Joint Statement for the Development of Inland Navigation and Environmental Protection in the Danube River Basin”.

Concerning environmental risks like floods or accidental risk spots, top priority for decision makers has to be an adequate spatial planning. The EUSDR can be the framework for a cooperative spatial planning within the DRB.

The inventory of potential accidental risk spots (ARS) does not result in a definitive statement of the actual danger level, because no investigation has been made of the safety measures on site.

From the environmental point of view the Danube Region could be described by the interaction of three different sectors. The upper part is flowing through well-developed European countries that seem to have adopted a good chemical status towards the water quality. But nevertheless the entire upper and middle parts as their tributaries are massively affected by the negative effects of hydropower use. The upper part is also heavily used for transportation. Downstream countries have questionably behaviour with regard to chemicals and waste released in the river. All these chemicals accumulate in the lower part, and especially in the Danube Delta, where one of the most unique natural reserves is situated.

By having this picture in mind, one could think about how to restore healthy conditions without radical changes. The EUSDR actions are a concrete step in the right direction by supporting green projects. But compared to pure environmental concerns, the situation is deteriorating continuously in the view of known repercussions even in protected areas. Biological diversity is sensible to any changes in their surrounding ambient and in addition of day-to-day pollution,

individual accidents could have dramatic impacts. Prevention plans and rapid response plans are mandatory for each industry related to chemicals. To restore water quality and to develop water treatments, multinational and multi-sectorial policies would help to prevent the environmental decay. But even in protected areas, it is not possible to completely avoid illegal and over-exploitation of resources and wrong use of chemicals.

Potentials of university cooperation in the Danube Region

Mobility for students, teachers and researchers has big potential for the Danube Region, its education system and research facilities.

The Bologna Process, while not fully implemented in many countries of the region, can get a boost with the implementation of the EUSDR. The CEEPUS program certainly has potentials for a sustainable development of Eastern and Central Europe if one or more networks teaching and researching the specifics of the Danube region are established. As there seems to be a focus on environmental fields, so CEEPUS is an ideal candidate to take actions within the Priority Area 7 and to connect with Pillars A and B of the EUSDR. The intensification of research in the Danube Region is possible, with biomass being a field of research with much potential. The transfer of knowledge and securing of highly qualified work places could be established through twinned laboratories in both the upper and lesser Danube regions. This could stop the brain drain from the region, but it is questionable if these singular actions will have a big impact on the economy and on the research industry.

University networks have the potential to become a good working lobby for the region, but at the moment they seem to concentrate on small actions such as conferences and summer schools. If they intensify their efforts of lobbying, the Danube Region could become a research region. However, this would need a unified strategy. All these efforts if done right should increase the social and economic sustainability of the region.

E-projects have potentials for a more sustainable region, if the need for electrical power is not big and the implementation begins with ecological computing in mind.

As many structural funds seem not to be fully used, the question about the commitment of institutions and countries raises. The region could become divided by the more active and less active countries, which could become a problem for the regional identity.

Potentials for economic growth and people and skills

Economic growth and increased competitiveness are targets of the EUSDR. These are surely good for economic sustainability, but the ecological and social factors have to be kept in mind. There could be great conflicts with the other pillars and ecological risks if the target of economic success is raised above all else.

As to marginalised communities, the targets seem to be very bold, but the implementation does not take care of many Roma institutions. With rising antiziganism in the region, it remains questionable that the integration of the Roma can succeed at all. Furthermore, the declared goal of stopping Roma migration could be interpreted as antiziganism of Western EU-countries not wanting Roma immigration.

Potentials for strengthening the region

Sustainable development within the public sector is a major topic itself, at the same time representing the basis for sustainable development in many other fields such as health care, education, pension etc. Governments all across the Danube Region are facing a mounting pressure to realise cuts in public spending, thus minimise gross debt and improve public services. And the EUSDR has the potential to “kill two birds with one stone” by promoting the transfer of know-how and enhance institutional cooperation. Especially new EU members often lack the know-how of how to design projects and projects proposals in order to gain the maximum available amount of financial resources by the EU. Romania for example only had roughly 10% of the earmarked funds used as of 2010, mostly because of inappropriate project proposals or financial problems in the implementation stage (Eigner 2011).

Optimised cross-border cooperation as another example has the potential to promote i.a. mobility, which in turn favours tourism and commerce i.e. entrepreneurs. Participation of civil society groups ensures greater public acceptance, involving NGOs and/or citizens in the decision-making process otherwise solely carried out by politicians.

Nearly all actions concerning PA 11 in the EUSDR were implemented in other strategies or action plans of the European Union and its agencies before the EUSDR was developed or at the same time. So the main tracks are laid to fulfil them. Now it is upon the Danube Region Member States to participate in the programmes. In particular the participation of the non–EU

Member States taking part in the EUSDR is crucial, since they gained access to important tools, like SIENA, lately.
Actions concerning internet criminality are a global issue and rarely of regional character, thus it is upon EUROPOL, in cooperation with neighbour states and other agencies like INTERPOL, to combat it, and not a special topic or phenomenon of the Danube Region as itself.

4.2. Synergies and conflicts

The EUSDR is designed as a macro-regional strategy comprising diverse countries as well as diverse priority areas. The overall objective is to stimulate development in the region, facing several challenges due to the partly conflicting sub-objectives set by countries and within priority areas at the same time. Being the second macro-regional strategy implemented the EUSDR benefits from key lessons learned already gained from the EU Strategy for the Baltic Sea, which started two years prior to the EUSDR, for instance to include the external dimension i.e. non-EU Member States.

Synergy effects occur between PA 11 and PA 7, 8 and 9. The development of knowledge society, the support of competitiveness of enterprises and the investment in people and their skills will help stabilise countries with economic problems, since it will reduce people getting driven into criminality by poverty and lack of education.

Since container shipments on waterways and different routes on land ways mainly arrange trafficking of drugs, weapons, counterfeits, and cigarettes, there is a conflict of PA 1 with the aim to improve mobility and multi-modality. If the Danube was made accessible to container ships, the possibility of trafficking illicit commodities into core distribution areas in big amounts would rise enormously. A tight surveillance network with up to date technical infrastructure will be needed. Also strengthening the railway and road infrastructure especially across borders will complicate the fight against organised crime.

The use of renewable forms of energy has often been praised as THE solution for any energy related issues. But there are some trade-offs, for example between the use of biomass and other crops in terms of land use conflicts.

Conflicting land use has been mentioned in 3.2.2, but there are also some synergies with the fields of feed production and agricultural issues, as processing residues can be used as feeding stuff or organic fertiliser to some extent. The loss in biodiversity through monoculture cultivation could be reduced through agro-technical solutions (like installing ecological structures e.g. hedges within the monocultures). Of course these structures get in conflict with the economic cultivation. Therefore it will be necessary to accept a trade-off like in many other issues of sustainability.

Renewables and mobility are connected through the Directive 2009/28/EG in which the framework for the increased use of bio-fuels is established. But more (even if more effective) mobility will certainly cause more environmental impacts and leads to an increasing energy demand.

To support the use of renewables, technical but also social education is essential (PA7). A broad knowledge about why the use of renewables is necessary and useful will help to encourage them. It is important to create awareness about common, future problems and create sense of responsibility of everyone. Education can help fighting poverty, which is often in conflict with sustainable behaviour, because of a lack of knowledge or even a lack of alternatives.

In general fossil fuels are not deemed as a sustainable source of energy. But within the term of secure supply and as a bridge to the future use of renewables, gas is necessary for the transition time. Therefore the EUSDR has a focus on the improvement of gas storages and networks. The question is how long we will use this bridge. It is important not to miss the point in time, when the use of gas is obstructive for the energy reversal. There are very different initial positions between the countries involved in the EUSDR. Therefore it is an improvement e.g. for Bulgaria or Romania to change from combustion of coal to the use of gas but it would be a regress for Austria to increase the use of gas.

Nuclear energy production is not by any means compatible with the idea of a sustainable development. The two main arguments are still the high risks in the case of an accident and the insolvable problem of a proper disposal – especially a problem for the future generations. Therefore nuclear energies should not be included in the planning for future energy supply. But

the Action plan of the EUSDR includes one not too prominently placed sentence in the description of the energy issue:

„Regarding nuclear energy, there must be respect for the high levels of safety established, especially where the river is an important source of cooling water“ (European Commission 2010a, 20).

This is in a serious conflict to the Title of the PA2: „To encourage more sustainable energy“ and of course in many ways in conflict with environmental issues as named above the waste problem and regarding to the statement in the action plan the heat emissions into rivers.

Expectations and hopes are high considering the enthusiasm shown in the preparation of the EUSDR.

The EUSDR covers a huge variety of priorities, all steered by different interest groups. The wide range of positive effects found during the extensive research raise expectations for sustainable changes in the Danube Region. At the same time the apparent conflicts and tight financial conditions call for prudence and patience. As the EUSDR was endorsed more or less in the middle of the current programming period concrete results that are directly attributable and provide measurable developments are not to be expected before the beginning of the next programming period in 2014. On the other hand exactly this choice of timing gives project-executing organisations just enough time to prepare in an efficient way for the upcoming calls for proposals. It remains to be seen if the countries participating in the EUSDR can fully realise the potentials within this strategy. The pivotal element will be if the stakeholders in question are able to find a balance between the partly conflicting definitions of a sustainable development for the whole region, depending on which Pillar of the EUSDR is going to be prioritised or if there will be an equilibrium established.

Being the second macro-regional strategy passed by the European Commission all stakeholders involved, both private and public, are able to learn from challenges and success stories gained by the first macro-regional strategy in the Baltic Sea Region to a certain extend. The success or failure of both the Danube Region Strategy and the Baltic Sea Region Strategy are crucial for the subsequent development and implementation of further macro-regional strategies as a new instrument of the EU.

List of References

Achener Stiftung Kathey Beys, 2011. Lexikon der Nachhaltigkeit. Available from: http://www.nachhaltigkeit.info/artikel/eu_staaten_1367.htm [Accessed date: 16.12.2011].

Alps-Adriatic Universities Rectors' Conference, 2011. Project proposals to the Danube Rectors' Conference for cooperation within the Danube Strategy. Vienna.

Austrian Energy Agency, 2011. Energy Country Profiles. Available from: http://www.enercee.net/ [Accessed date: 14.12.2011].

Baumgartner C., 2011. Personal Interview, led by the author. Vienna, on 19th December 2011.

BKA, 2011. Internationale Zusammenarbeit im Kampf gegen Bankomatdiebstähle – press release on 07.06.2011. Available from: http://www.bmi.gv.at/cms/BK/presse/start.aspx [Accessed date: 03.02.2012].

BMEIA, 2010. Die Donauraumstrategie der Europäischen Union - Keynote Speech von Bundesminister Dr. Michael Spindelegger 21.09.2010. Available from: http://www.bmeia.gv.at/aussenministerium/pressenews/reden-und-interviews/2010/die-donauraumstrategie-der-europaeischen-union.html [Accessed date: 16.12.2011].

BMVFJ, 2011. Danube travel – Optimierung des erdverbundenen, öffentlichen Verkehrs für den Tourismus im Donauraum. Available from: http://www.bmwfj.gv.at/Tourismus/TourismusstudienUndPublikationen/Documents/Danube%20Travel.pdf [Accessed date: 17.12.2011].

Bologna Follow-Up Group Secretariat, 2010. History of EHEA. Available from: http://www.ehea.info/article-details.aspx?ArticleId=3 [Accessed date: 06.12.2011].

Breeze, D. J. and Jilek, S., 2009. Frontiers of the Roman Empire. Available from: http://www.danube-limes.eu/world_heritage [Accessed date: 17.12.2011].

Busek, E., 2011a. EU Strategy for the Danube Region - Contributing to a Prosperous Danube Region. Available from: www.vienna-economic-forum.com/uploads/media/Busek.pdf [Accessed date: 18.12.2011].

Busek, E., 2011b. Personal Interview, led by the author. Vienna, on 23rd December 2011.

CASEE, 2011. CASEE - The ICA Regional Network for Central and South Eastern Europe. Available from: http://www.ica-europe.info/casee/ [Accessed date: 14.12.2011].

Central CEEPUS Office, 2010a. CEEPUS at a glance. Available from: http://dl.dropbox.com/u/15113946/ceepus_at_a_glance_12-10-2011.pdf [Accessed date: 08.12.2011].

Central CEEPUS Office, 2010b. Network list. Available from: http://www.ceepus.info/public/network/network_info.aspx [Accessed date: 08.12.2011].

Council of Europe, 2005. Convention on the conservation of European wildlife and natural habitats - Action Plan for the Conservation of the Sturgeons. Available from: https://wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=1304173&SecMode=1&DocId=1440994&Usage=2 [Accessed date: 26.11.2011].

Cramer, M., 2009. Iron Curtain Trail. Available from: http://www2.ironcurtaintrail.eu/uploads/brochure_iron_curtain_trail.pdf [Accessed date: 17.12.2011].

Cramer, M., 2011. Europäische Einheit im wahrsten Sine des Wortes Erfahren - Der „Europa-Radweg Eiserner Vorhang". In: Stratenschulte E.D. and Setzen F.H., Der euröpäische Fluss - Die Donau und ihre Regionen als Strategieraum. Berlin: BWF, 227-248.

Danube Civil Society Forum, 2011a. Danube Civil Society Forum. Available from: http://www.danubestrategy.eu/ [Accessed date: 03.12.2011].

Danube Civil Society Forum, 2011b. Statues of the Danube Civil Society Forum. Available from: http://www.danubestrategy.eu/uploads/media/Statutes_Danube_Civil_Society_Forum.pdf [Accessed date: 18.12.2011].

Danube Civil Society Forum, 2011c. Position- and Non-Papers related to the Danube strategy. Available from: http://www.danubestrategy.eu/papers/papers/ [Accessed date: 06.02.2012].

Danube Commission, 2010. Background to the legal framework. Available from: http://icpdr.org/icpdr-files/14198 [Accessed date: 16.12.2011].

Danube Competence Centre, 2011. Danube Delta. Available from: http://www.danubecc.org/index.php?pg=danube-delta# [Accessed date: 18.12.2011].

DanubeParks, 2011. Netzwerk der Donau – Schutzgebiete. Available from: http://www.danubeparks.org/?area=network [Accessed date: 11.11.2011].

Danube Press Services, 2010. The Danube – A River´s Lure HIKING along the DANUBE. Available from: http://www.danube-river.org/uploads/media_files/document/12716683242970d215d2c9a964b766fb2a4cf8eddb16c141771d.pdf [Accessed date: 18.12.2011].

Danube Rectors Conference, s.a. History of the Danube rectors' conference. Available from: http://www.d-r-c.org/main.asp?Opt=about&tab=H [Accessed date: 11.12.2011].

Danube Region Strategy, 2011. One Strategy – 11 Priorities. Available from: http://www.danube-region.eu/pages/priorities [Accessed date: 18. 12.2011].

Danube Tourist Commission and Zolles & Edinger GmbH, 2011. Danube Travel – Optimierung des erdverbundenen, öffentlichen Verkehrs für den Tourismus im Donauraum. Vienna: Bundesministerium für Wirtschaft, Familie und Jugend. Available from:

http://www.bmwfj.gv.at/Tourismus/TourismusstudienUndPublikationen/Documents/Danube%20Travel.pdf [Accessed date: 17.12.2011].

Decade of Roma Inclusion 2005-2015, no date. About decade of Roma. Available from: http://www.romadecade.org/about [Accessed date: 17.12. 2011].

Die Donau, 2011. Der Donauradweg. Available from: http://www.donau-info.org/donau.php?pg=3&lg=ge&mn=3 [Accessed date: 17.12.2011].

Dörrenbächer, H. and Bochmann, P.-A., 2011. Die Donaustrategie der Europäischen Union - Die Sichtweisen Kiews und Chisinaus. Available from: http://edoc.vifapol.de/opus/volltexte/2011/3143/pdf/N_3_Die_Donaustrategie_der_Europaeischen_Union.pdf [Accessed date: 08.12.2011].

Eigner, J., 2011. Personal Interview, led by the author. Vienna, on 22nd December 2011.

Energy Community, 2011. Energy Community. Available from: http://www.energy-community.org/portal/page/portal/ENC_HOME [Accessed date: 10.12.2011].

European Commission, s.a. EU Strategy for the Danube Region – Funding. Regional Policy - Inforegio. Available from: http://ec.europa.eu/regional_policy/cooperate/danube/funding_en.cfm [Accessed date: 14.11.2011].

European Commission, 1997. White Paper for a Community Strategy and Action Plan -Energy for the future - Renewable sources of energy. Available from: http://ec.europa.eu/energy/library/599fi_en.pdf [Accessed date: 29.11.2011].

European Commission, 2006. Green Paper - A European Strategy for Sustainable - Competitive and Secure Energy. Available from: http://europa.eu/documents/comm/green_papers/pdf/com2006_105_en.pdf [Accessed date: 14.11.2011].

European Commission, 2007. Renewable Energy Road Map - Renewable energies in the 21st century - building a more sustainable future. Available from: http://ec.europa.eu/energy/energy_policy/doc/03_renewable_energy_roadmap_en.pdf [Accessed date: 03.12.2011].

European Commission, 2008a. JRC Support to Energy Policy for Europe. Available from: http://ec.europa.eu/dgs/jrc/downloads/jrc_20080526_infoday_ljubljana_workshop2_desanti.pdf [Accessed date: 15.12.2011].

European Commission, 2008b. Examining the creation of a European Border Surveillance System. EUROSUR. Available from: http://eur-lex.europa.eu/Notice.do?mode=dbl&lang=de&ihmlang=de&lng1=de,en&lng2=bg,cs,da,de,el,en,es,et,fi,fr,hu,it,lt,lv,mt,nl,pl,pt,ro,sk,sl,sv,&val=464861:cs&page [Accessed date: 20.12.2011].

European Commission, 2010a. Action Plan. Available from: http://www.danubestrategy.eu/fileadmin/danube/media/EUSDR_action_plan_danube.pdf [Accessed date: 07.12.2011].

European Commission, 2010b. Communication Plan. Available from: http://ec.europa.eu/regional_policy/sources/docoffic/official/communic/danube/com2010_715_danube_en.pdf [Accessed date: 12.11.2011].

European Commission, 2010c. Energy 2020 - A strategy for competitive, sustainable and secure energy. Available from: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do ?uri=COM:2010:0639:FIN:EN:PDF [Accessed date: 08.12.2011].

European Commission 2010d. The EU Internal Security Strategy in Action - Five steps towards a more secure Europe. Available from: http://eur-lex.europa.eu/Notice.do?mode=dbl&lng1=en,de&lang=&lng2=bg,cs,da,de,el,en,es,et,fi,fr,hu,it,lt,lv,mt,nl,pl,pt,ro,sk,sl,sv,&val=534356:cs&page=&hwords=null [Accessed date: 20.12.2011].

European Commission, 2010e. Magazine of the Directorate-General for the Environment: Environment for Europeans protecting Europe's biodiversity. Available from: http://ec.europa.eu/environment/news/efe/pdf/efe38/DE-EFE-100518.pdf [Accessed date: 25.10.2011].

European Commission, 2010f. TEN-T Transport Infrastructure. Available from: http://ec.europa.eu/transport/infrastructure/index_en.htm [Accessed date: 15.12.2011].

European Commission., 2010g. Small Business Act for Europe. Available from: http://ec.europa.eu/enterprise/policies/sme/small-business-act/index_en.htm [Accessed date: 19.12.2011].

European Commission 2010h. Communication on Roma in Europe and Progress Report on Roma inclusion 2008-2010 . Available from: http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/10/121&format=PDF&aged=1&language=EN&guiLanguage=de [Accessed date: 15.12.2011].

European Commission, 2011a. Determining the technical and operational framework of the European Border Surveillance System [EUROSUR] and the actions to be taken for its establishment. Available from: http://ec.europa.eu/home-affairs/doc_centre/borders/borders_rights_en.htm [Accessed date: 20.12.2011].

European Commission, 2011b. Environment - Sustainable Development. Available from: http://ec.europa.eu/environment/eussd/ [Accessed date: 17.12.2011].

European Commission, 2011c. The Danube-A river of innovation. Research*eu FOCUS 11, 17-18. Available from: ftp://ftp.cordis.europa.eu/pub/news/research-eu/docs/focus11_en.pdf [Accessed date: 02.02.2012].

European Commission, 2011d. Trans-European energy networks TEN-E. Available from: http://ec.europa.eu/energy/infrastructure/tent_e/ten_e_en.htm [Accessed date: 02.02.2012].

European Commission, 2011e. Cross-Border Cooperation within the European Neighbourhood and Partnership Instrument (ENPI). Available from: http://ec.europa.eu/europeaid/where/neighbourhood/regional-cooperation/enpi-cross-border/index_en.htm [Accessed date: 14.12.2011].

European Commission, 2011f. Roma Summits. Available from: http://ec.europa.eu/justice/discrimination/roma/roma-summits/index_en.htm. [Accessed date: 17.12.2011].

European Commission, 2011g. Roma platform. Available from: http://ec.europa.eu/justice/discrimination/roma/roma-platform/index_en.htm. [Accessed date: 17.12.2011].

European Commission 2011h. An EU Framework for National Roma Integration Strategies up to 2020 . Available from: ec.europa.eu/justice/policies/discrimination/docs/com_2011_173_en.pdf [Accessed date: 14.12.2011].

European Commission, 2011i. Development and Cooperation EuropAid - ENPI Cross Border. Available from: http://ec.europa.eu/europeaid/where/neighbourhood/regional-cooperation/enpi-cross-border/index_en.htm [Accessed date: 19.12.2011].

European Commission, 2012. Regional Policy. Cohesion Policy 2007-2013: Financial Allocations per Year. Available from: http://ec.europa.eu/regional_policy/archive/policy/fonds/pdf/annexe-verso.pdf [Accessed date: 14.01.2012].

EU Strategy for the Danube region, s.a. Contribution of the Czech Republic. Available from: http://ec.europa.eu/regional_policy/archive/consultation/danube/doc/countries/cz_contribution.pdf [Accessed date: 14.12.2011].

EU Strategy for the Danube Region, 2010. Austrian thematic contributions. Available from: http://ec.europa.eu/regional_policy/archive/consultation/danube/doc/countries/at_thematic.pdf [Accessed date: 15.12.2011].

EurActive, 2007. EU renewable energy policy. Available from: http://www.euractiv.com/energy/eu-renewable-energy-policy-linksdossier-188269 [Accessed date: 01.12.2011].

EURoma 2010. EURoma Report – Roma and the Structural Funds. Available from: ec.europa.eu/employment_social/esf/docs/euroma_report_en.pdf [Accessed date: 12.12.2011].

EURoma, 2011. What is EU Roma. Available from: http://www.euromanet.eu/about/index.html [Accessed date: 16.12.2011].

Europa, 2010. Promotion of the use of energy from renewable sources. Available from: http://europa.eu/legislation_summaries/energy/renewable_energy/en0009_en.htm [Accessed date: 01.12.2011].

Europa press releases RAPID, 2008. EU - Kommissarin Hübner fordert Europäische Donaustrategie. Available from: http://europa.eu/rapid/pressReleasesAction.doreference=IP/08/1461&format=HTML&aged=0&language=DE&guiLanguage=en [Accessed date: 18.12.2011].

European Council, 2005. Convention on Action against Trafficking in Human Beings CETS No.: 197. Available from: http://www.conventions.coe.int/Treaty/Commun/ChercheSig.asp?NT=197&CM=1&DF=&CL=ENG [Accessed date: 19.12.2011].

European Council, 2009a. Council Decision of 6 April 2009 establishing the European Police Office [Europol] [2009/371/JHA]. Available from: https://www.europol.europa.eu/content/page/legal-texts-125 [Accessed date: 14.12.2011].

European Council, 2009b. COUNCIL DECISION 2009/935/JHA of 30 November 2009 - determining the list of third States and organisations with which Europol shall conclude agreements. Available from: https://www.europol.europa.eu/content/page/legal-texts-125 [Accessed date: 14.12.2011].

European Council, 2010. COUNCIL REGULATION [EC]. Available from: http://eur-lex.europa.eu/Notice.do?mode=dbl&lang=de&ihmlang=de&lng1=de,en&lng2=bg,cs,da,de,el,en,es,et,fi,fr,ga,hu,it,lt,lv,mt,nl,pl,pt,ro,sk,sl,sv,&val=519117:cs&page [Accessed date: 17.12.2011].

European Council, 2011. DIRECTIVE 2011/36/EU on preventing and combating trafficking in human beings and protecting its victims. Available from: http://eur-lex.europa.eu/Notice.do?mode=dbl&lang=de&lng1=de,en&lng2=bg,cs,da,de,el,en,es,et,fi,fr,hu,it,lt,lv,mt,nl,pl,pt,ro,sk,sl,sv,&val=570623:cs&page=1&hwords=2011%2F36%2FEU~ [Accessed date: 19.12.2011].

Europol, 2011a. Knowledge Product - Trafficking in Human Beings in the European Union. Available from: https://www.europol.europa.eu/sites/default/files/publications/trafficking_in_human_beings_in_the_european_union_2011.pdf [Accessed date: 12.12.2011].

Europol, 2011b. EU Organised Crime Threat Assessment – OCTA 2011, File no. 2530-274. Available from: https://www.europol.europa.eu/latest_publications/3 [Accessed date: 12.12.2011].

Europol, 2011c. Europol review – general Report on Europol activities in 2010, European Police Office. Available from: https://www.europol.europa.eu/latest_publications/2 [Accessed date: 12.12.2011].

Eurostat, 2011. EU 2020 Targets. Available from: http://epp.eurostat.ec.europa.eu/portal/page/portal/europe_2020_indicators/headline_indicators [Accessed date: 20.11.2011].

EuroVelo, 2011a. New routes EuroVelo. Available from: http://www.eurovelo.org/routes/newroutes/ [Accessed date: 17.12.2011].

EuroVelo, 2011b. Routes EuroVelo. Available from: http://www.eurovelo.org/routes/ [Accessed date: 18.12.2011].

Federal Ministry of Economics and Technology Germany, 2011. Energy efficiency made in Germany. Available from: http://www.efficiency-from-germany.info/EIE/Navigation/EN/root.html [Accessed date: 10.12.2011].

Frontex, 2011. External Relations - Working arrangements and cooperation in place. Available from: http://www.frontex.europa.eu/ [Accessed date: 20.12.2011].

Glössel, J., 2011. BOKU - Presseinformation. Available from: http://www.boku.ac.at/fileadmin/_/H13/Veranstaltungen__div._infos/21.10.2011.pdf [Accessed date: 14.12.2011].

Glüe, J., 2011. Randnotizen. Available from: http://miradorberlin.wordpress.com/2011/04/30/brigach-und-breg/ [Accessed date: 10.01.2012].

Goulet, R., 2011. The EU Strategy for the Danube Region. Panorama, 37, 11.

Grubb, M., 1995. Renewable Energy Strategies for Europe Volume1. London: The Royal Institute of international affairs.

Habersack, H., 2011. The Christian-Doppler-Laboratory for Advanced Methods in River Monitoring, Modelling and Engineering and related ideas for the common implementation of the Danube Strategy. Available from: http://www.boku.ac.at/fileadmin//H12/Images/ download/drc2011/Habersack.pdf [Accessed date: 08.12.2011].

Hasenbichler, H.-P;. Simoner, M. and Hartl, T., 2011. Die Entwicklung der Donauschiffahrt als Handlungsfeld der Donauraumstrategie. In: Stratenschulte, E.; Setzen, F. Hrsg. Der europäische Fluss: Die Donau und ihre Regionen als Strategieraum. Bd. 2. Berlin: Bwv - Berliner-Wissenschafts-Verlag, 153-174.

Hartl, T., 2010. Wiener Wasser Almanach - Beitrag Wasser, Schiffe, Güter, Donau. Vienna: Via Donau. Available from: http://www.donauschifffahrt.info/news_publikationen/fachartikel/ [Accessed date: 12.12.2011].

Hennicke P. and Fischedick M., 2007. Erneuerbare Energien. Mit Energieeffizienz zur Energiewende. München: C.H.Beck Verlag.

ICPDR, s.a.. Assessment of Flood Monitoring and Forecasting in the Danube River Basin. Available from: http://www.icpdr.org/icpdr-pages/item20101205174825.htm [Accessed date: 08.12.2011].

ICPDR, 2005. Accidental Pollution. Available from: http://www.icpdr.org/icpdr-pages/accidental_pollution.htm [Accessed date: 03.12.2011].

ICPDR, 2007. Accident Emergency Warning System. Available from: http://www.icpdr.org/icpdr-pages/aews.htm [Accessed date: 11.12.2011].

ICPDR, 2009. Danube River Basin Management Plan. Available from: http://www.icpdr.org/icpdr-pages/danube_rbm_plan_ready.htm [Accessed date: 10.12.2011].

ICPDR, 2010. Report on Achievements in Flood Protection in the Danube River Basin. Available from: http://www.icpdr.org/icpdr-pages/item20101205174825.htm [Accessed date: 13.12.2011].

Institut für den öffentlichen Sektor e.V., 2011. Public Governance. Zeitschrift für öffentliches Management. Available from: http://www.publicgovernance.de/docs/PG_II_2011.pdf [Accessed date: 10.12.2011].

Institute for Tourism, 2000. What is sustainable tourism. Available from: http://www.iztzg.hr/en/odrzivi_razvoj/sustainable_tourism/#definitions [Accessed date: 17.12.2011].

INTERact, 2011a. IPA - CBC. Available from: http://www.interact-eu.net/ipa/ipa_general/29/14 [Accessed date: 17.12.2011].

INTERact, 2011b. Territorial Cooperation. Available from: http://www.interact-eu.net/etc/etc_2007_13/4/2 [Accessed date: 17.12.2011].

INTERact, 2011c. Danube Limes. Available from: http://www.interact-eu.net/projects_and_initiatives/danube_limes/327/7540 [Accessed date: 18.12.2011].

INTERact, 2012. EU Strategy for the Danube Region. Available from: http://www.interact-eu.net/danube_strategy/danube_strategy/285/3928 [Accessed date: 18.12.2011].

IRIS, 2011. IRIS Europe II – Introduction. Available from: http://www.iris-europe.net/project-overview/description/ [Accessed date: 11.12.2011].

IUCN, 2003. The IUCN Red List of Threatened Species. Available from: http://www.carpates.org/docs/publications/list.indd.pdf [Accessed date: 05.12.2011].

Jungwirth, M., 2010. Hydrobiologie 1. Vienna: University of Natural Resources and Applied Life Sciences. Available from: http://www.boku.ac.at/hfa/lehre/Hydro_I_KT_LAP/VO_Hydrobiologie_I_f._KT_&_LAP_Skriptum.pdf [Accessed date: 03.12.2011].

Konze, M., 2011. Discover the Danube. Belgrad: Danube Competence Center. Available from: http://www.danube-info.org/DOWNLOADS/DCC_Broshure_23jan2011-DiscoverTheDanube-EntedckeDieDonau-English-Deutsch.pdf [Accessed date: 17.12.2011].

Kramer, M., 2000a. Die Donau: ein römischer Grenzfluss. Deutschland und Europa, 41, 9-10. Ditzingen: Reclam Graphischer Betrieb GmbH.

Kramer, M., 2000b. Großreiche an der Donau. Deutschland und Europa, 41, 17-19. Ditzingen: Reclam Graphischer Betrieb GmbH.

Kvarda, W., 2011. The energETHIC Imperative – 100% renewable energies NOW. Subotica: Sixth scientific-professional Symposium - Planned and normative Protection of Space and Environment.

LisbonTreaty, 2007. Article 194. Available from: http://www.lisbon-treaty.org/wcm/the-lisbon-treaty/treaty-on-the-functioning-of-the-european-union-and-comments/part-3-union-policies-and-internal-actions/title-xxi-energy/485-article-194.html [Accessed date: 12.12.2011].

Liska, I., 2007. Danger heading downstream - the Accident Emergency Warning System in action. Danube Watch, 2/2007, 18.

Liska, I., 2008a. Joint Danube Survey 2 – Final Scientific Report. Vienna: ICPDR. Available from: http://www.icpdr.org/jds/files/ICPDR_Technical_Report_for_web_low_corrected.pdf [Accessed date: 23.10.2011].

Liska, I., 2008b. Joint Danube Survey 2 – Research Expedition and Conclusion. Vienna: ICPDR. Available from: http://www.icpdr.org/jds/files/JDS2 [Accessed date: 15.11.2011].

Marhl, M., 2010. DANUBE RECTORS' CONFERENCE and the EU strategy for the Danube region. Available from: http://www.d-r-c.org/upload/Marhl_Presentation_Budapest_Final.pdf [Accessed date: 14.12.2011].

Marhl, M.; Rebolj, D. and Kraljić, M., 2011. Universities in process of regional integration and globalisation in the higher education area. In: Miklavič, K., [Ed.]. Higher education policies, trends and strategies in Europe and Slovenia. Ljubljana: CMEPIUS, Centre of the Republic of Slovenia for Mobility and European Educational and Training Programmes, 121 - 143.

Ministry of Foreign Affairs and European Integration of Republic of Moldova, 2010. Meeting with the Rector of the University of Natural Resources and Applied Life Sciences of Vienna - Dr. Martin H. GERZABEK. Available from: http://www.austria.mfa.md/embassy-news-en/485964/ [Accessed date: 11.12.2011].

Ministry of Regional Development and Tourism Romania, 2011. Cross Border Cooperation Romania – Serbia. Available from: http://www.romania-serbia.net/ [Accessed date: 17.12.2011].

Minsch, J. et al., 1998. Institutionelle Reformen für eine Politik der Nachhaltigkeit. Berlin Heidelberg: Springer Verlag.

NAIADES, 2011. Fuel Consumption - How much fuel does an inland vessel consume. Available from: http://www.naiades.info/faq [Accessed date: 15.12.2011].

Năstase, C. and Hodorobă, A., 2010. Education – an economic growth factor. In: The Annals of The "Ştefan cel Mare" University of Suceava. Suceava: Faculty of Economics and Public Administration „Ştefan cel Mare", 53-60.

NELI, 2011. Information and Training Centres. Available from: http://www.neliproject.eu/neli/ [Accessed date: 11.12.2011].

Neumayer, I., 2011. Jugoslawienkriege. Planet Wissen. Available from: http://www.planet-wissen.de/politik_geschichte/menschenrechte/jugoslawien_kriege/index.jsp [Accessed date: 30.01.2012].

Ocker, I., 2002. Indikatoren für die Qualität von Oberflächengewässer. Kiel: Geographisches Institut der Universität Kiel. Available from: http://www2008.io-warnemuende.de/homepages/schernewski/MSGewaesser/texte/indikatoren.pdf#search=%22Trophiesystem%20uni%20-%22mit%20dem%20Trophiesystem%22%22 [Accessed date: 28.11.2011].

OECD, 2011. Restoring Public Finances. Available from: http://www.oecd.org/dataoecd/51/58/47558957.pdf [Accessed date: 17.12.2011].

OEROK, 2010. EUSDR – Koordinierung der Säulen & Prioritätsfelder. Available from: http://www.oerok.gv.at/raum-region/europaeische-raumentwicklung/makroregionale-strategien/eu-strategie-fuer-den-donauraum.html. [Accessed date: 18.12.2011].

OÖ Presseclub, 2011. Presseunterlage für die Pressekonferenz am 04.03.2011, 10:00 Uhr. Linz. Available from: http://www.oberoesterreich-tourismus.at/sixcms/media.php/1271/PK_Donau_04.pdf [Accessed date: 17.12.2011].

Open Society Foundations 2010. No Data - No Progress: Country Findings. Available from: http://www.soros.org/initiatives/roma/articles_publications/publications/no-data-no-progress-20100628/no-data-no-progress-country-reports-20100628.pdf [Accessed date: 15.12.2011].

Popovici, V., 2011. The Danube Region – a future European Energy Corridor. Europa Energy Review. Available from: http://www.europeanenergyreview.eu/site/pagina.php?id=2675&zoek=energy%20for%20danube [Accessed date: 10.12.2011].

Poyato, A. F., 2011. About the FIIAPP. Available from: http://www.fiiapp.org/index.php/acerca_de_fiiapp?menu=4 [Accessed date: 16.12.2011].

Rindt, Z., 2011. Employability measures for Roma population. European Working Conditions Observatory. Available from: http://www.eurofound.europa.eu/ewco/2011/07/HU1107011I.htm [Accessed date: 13.12.2011].

Rolbetzky, D., 2000. Unter dem Banner des Propheten ins Innere Europas. Deutschland und Europa, 41, 20-22. Ditzingen: Reclam Graphischer Betrieb GmbH.

Roma Decade, 2011. About. Available from: http://www.romadecade.org/about [Accessed date: 17.12.2011].

Roma Education Fund, 2011. Closing the gap in educational outcomes between Roma and non-Roma Available from: http://www.romaeducationfund.hu/ [Accessed date: 17.12.2011].

Romanian Ministry of Environment, 2009. About Danube Floodrisk. Bucharest: Romanian Ministry of Environment. Available from: http://www.danube-floodrisk.eu [Accessed date: 14.12.2011].

Röder, S., 2009. Danube Delta - Landscape of the year - Final Report. Vienna: Naturfriends International.

Samer, H., 2003a. Arrival in Europe. Oberwart: Rombase. Available from: http://romani.uni-graz.at/rombase/cgi-bin/artframe.pl?src=data/hist/origin/arrival.en.xml [Accessed date: 17.12.2011].

Samer, H., 2003b. The Final Solution. Oberwart: Rombase. Available from: http://romani.uni-graz.at/rombase/cgi-bin/artframe.pl?src=data/hist/holo/final.en.xml. [Accessed date: 17.12.2011].

Schiele, S., 2000. Vorwort des Herausgebers. Deutschland und Europa, 41, 2. Ditzingen: Reclam Graphischer Betrieb GmbH.

SEECEL., 2011. Who we are. Available from: http://www.seecel.hr/default.aspx?id=14 [Accessed date: 19.12.2011].

Simoner, M., 2011. Personal Interview, led by the author. Vienna, on 15th December 2011.

Statistik Austria, 2011a. Verkehrsstatistiken - Binnenschifffahrt. Available from: http://www.statistik.at/web_de/statistiken/verkehr/binnenschifffahrt/index.html [Accessed date: 11.12.2011].

Statistik Austria, 2011b. Tourismusstatistik - Ankünfte und Übernachtungen seit 1973. Available from: http://sdb.statistik.at/statistik.at/ext/superweb/loadDatabase.do?db=detourannae [Accessed date: 16.12.2011].

Süddeutsche, 2011. Roma in Europa - Ein Volk mit vielen Facetten. Süddeutsche Zeitung. Available from: http://www.sueddeutsche.de/politik/roma-in-europa-ein-volk-mit-vielen-facetten-1.993896-2 [Accessed date: 17.12.2011].

UNECE, s.a. Transport. Poole: United Nations Economic Commission for Europe. Available from: http://www.unece.org/leginstr/trans.html [Accessed date: 19.12.2011].

UNODC, 2008. Signatories to the CTOC Trafficking Protocoll. Available from: http://www.unodc.org/unodc/en/treaties/CTOC/countrylist-traffickingprotocol.html [Accessed date: 19.12.2011].

Vassilev M., 2004. Lower Danube - The Last Refuge For Surviving Of Sturgeon Fishes In The Black Sea Region. Available from: http://balwois.com/balwois/administration/full_paper/ffp-858.pdf [Accessed date: 22.11.2011].

Via Donau, 2010a. Eckdaten der Wasserstrasse Donau. Available from: http://www.donauschifffahrt.info/daten_fakten/verkehrsweg_donau/eckdaten/ [Accessed date: 10.12.2011].

Via Donau, 2010b. Unternehmen - Leistungen. Available from: http://www.via-donau.org/unternehmen/leistungen/ [Accessed date: 10.12.2011].

Wachter, K., 2003. Drei Jahre nach Baia Mare – Eine Nachbetrachtung der größten Gewässerverunreinigung Europas. St. Pölten: unpublished document. Available from: www.iad.gs/docs/BaiaMare2003.pdf [Accessed date: 07.11.2011].

Wachter, K., 2008. The Analysis of the Danube Floods 2006. Available from: http://www.icpdr.org/icpdr-pages/floods.htm [Accessed date: 14.12.2011].

Weller, P.; Lutschinger, G.; Dister, E. and Haraszyrhy, L., 2002. Waterway Transport on Europe's Lifeline - the Danube. Available from: http://wwww.wwf.hu/media/file/1180873628_danubereport_4.pdf [Accessed date: 07.12.2011].

Weltatlas.info, 2011. Geschichte von Europa. Available from: http://www.weltatlas.info/europa/geschichte/ [Accessed date: 01.02.2012].

Wieselberg, L., 2002. Das Donauwasser ist besser als sein Ruf. ORF- Science News. Available from: http://sciencev1.orf.at/science/news/58407 [Accessed date: 13.11.2011].

Winckler, G., 2011. University Development in the Danube Region. Vienna: unpublished document. Available from: http://www.boku.ac.at/fileadmin/_/H12/Images/download/drc2011/Winckler.pdf [Accessed date: 15.12.2011].

Winkelmann-Oei, G.; Varduca, A.; Geisbacher, D.; Pinter G. and Liska, I., 2001. Inventory of Potential Accidental Risk Spots in the Danube River Basin. Available from: http://www.icpdr.org/icpdr-pages/accidental_pollution.htm [Accessed date: 08.12.2011].

Zolles & Edinger GmbH; Die Donau, 2010. Der Donauradweg - Eine touristische Bestandsaufahme. Danube Competence Center.