UNECE Convention on the Transboundary Effects of Industrial Accidents

Project on hazard and crisis management in the Danube Delta, involving the Republic of Moldova, Romania and Ukraine

Hazard and Crisis Management Legislation and Policy in the Danube Delta

Comparative Analysis for the Republic of Moldova, Romania and Ukraine

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18 September 2014

Table of content

List of Acronyms

AEWS	Accident Emergency Warning System of Danube River
APC EG	Accident, Prevention and Control Expert group of the ICPDR
AQC	Analytical Quality Control
ARS	Accidental Risk Spots
ANAR	National Administration “Apele Romane”
AWB	Artificial Water Body
BAP	Best Agricultural Practice
BAT	Best Available Techniques
BEP	Best Environmental Practice
BLS	Baseline Scenario
BR	Danube Delta Biosphere Reserve
BREF	Best Available Techniques Reference Documents (under the IPPC)
BSC	The Commission on the Protection of the Black Sea Against Pollution (the Black Sea Commission)
CEE	Central and Eastern Europe
CIS	Common Implementation Strategy
CNSD	Council of National Safety and Defence of Ukraine
CP	Contracting Party
CS	Contracting State
CSI	Contaminated Sites Inventory
DBA	Danube Basin Analysis 2004
DDNI	Danube Delta National Institute for Research and Development Romania
DRB	Danube River Basin
DRBD	Danube River Basin District
DRBMP	Danube River Basin Management Plan
DRP	Danube Regional Project
DRPC	Danube River Protection Convention
EC	European Commission
EG	Expert Group
EIA	Environmental Impact Assessment
ELV	Emission Limit Value (EU Industrial Emissions Directive)
EPER	European Pollutant Emission Register
E-PRTR	European Pollutant Release and Transfer Register
EQS	Environmental Quality Standard
EU	European Union
EU WISE	European Union Information System on Water
GEP	Good Ecological Potential
GES	Good Ecological Status
GFP	Good Farming Practices
GEF	Global Environment Facility
GES	Good Ecological Status
GIS	Geographical Information System

GW	Groundwater
GWB	Groundwater Body
ICPDR	International Commission for the Protection of the Danube River
IED	Industrial Emissions Directive
IPPC	Integrated Pollution Prevention and Control Directive
IRCM	Romanian Institute for Marine Research, Constanta
IGSU	General Inspectorate for Emergency Situation in Romania
JDS	Joint Danube Survey
JPM	Joint Programme of Measures
MAI	Ministry of Administration and Interior of Romania
ME	Ministry of Emergences Ukraine
MMCC	Ministry of Environment and Climate Changes, Romania
MoU	Memorandum of Understanding
MS	Member State of European Union
MSI	Mining Sites Inventory
Non EU MS	Non European Union Member State
PIAC	Principal International Alert Centres of AEWS
PRTR	Pollutant Release and Transfer Register
QA/QC	Quality Assurance/Quality Control
RCES	Republican Commission for Emergency Situation, Republic of Moldova
RBM	River Basin Management
RBMP	River Basin Management Plan
REACH	EU regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals
RCS	Red Cross Society Republic of Moldova
SEA	Strategic Environmental Assessment
SHS	State Hydrometeorological Service Republic of Moldova
SDES	State Department of Emergency Republic of Moldova
SA	State Agency “Apele Moldovei”
SWMI	Significant Water Management Issue
SCWM	State Committee for Water management, Ukraine
TNMN	Transnational Monitoring Network
ToR	Terms of Reference
UN/ECE	United Nations Economic Commission for Europe
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WFD	Water Framework Directive
WRI	Water risk index

Glossary of terms and definitions

Active measures: e.g. enhance the availability of well-equipped fire brigades rescuing people in the event of fire, floods or accidental pollution;

Affected Party means any Party or Parties affected or capable of being affected by transboundary effects of an industrial accident;

Best available techniques: The latest stage of development (state of the art) of processes, facilities or methods of operation which indicate the practical suitability of a particular measure for limiting discharges, emissions and waste;

Catchment area of the Danube River means the hydrological river basin as far as it is shared by the Contracting Parties;

Contamination Risk represents (probability of contamination) x (significance of toxic impacts);

Damage means: (a) loss of life or personal injury; (b) loss of or damage to property other than to the installation itself or property held under the control of the operator, at the site of the dangerous activity; (c) loss or damage by impairment of the environment in so far as this is not considered to be damage within the meaning of sub-paragraphs (a) or (b) above provided that compensation for impairment of the environment, other than for loss of profit from such impairment, shall be limited to the costs of measures of reinstatement actually undertaken or to be undertaken; (d) the costs of preventive measures and any loss or damage caused by preventive measures, to the extent that the loss or damage referred to in sub-paragraphs (a) to (c) of this paragraph arises out of or results from the hazardous properties of the dangerous substances, genetically modified organisms or micro-organisms or arises or results from waste;

Danube States: sovereign States sharing a considerable part of the hydrological catchment area of the Danube River. As considerable part there is assumed a share exceeding 2.000 km^2 of the total hydrological catchment area;

Effects: any direct or indirect, immediate or delayed adverse consequences caused by an industrial accident on, inter alia: (i) Human beings, flora and fauna; (ii) Soil, water, air and landscape; (iii) The interaction between the factors in (i) and (ii); (iv) Material assets and cultural heritage, including historical monuments;

Emission: the direct or indirect release of substances, vibrations, heat or noise from individual or diffuse sources in the installation into the air, water or land;

Emission limit values (ELV): the mass, expressed in terms of certain specific parameters, concentration and/or level of an emission, which may not be exceeded during one or more periods of time; ELV may also be laid down for certain groups, families or categories of substances, in particular for those listed in Annex III. The ELV for substances normally apply at the point where the emissions leave the installation, any dilution being disregarded when determining them; with regard to indirect releases into water, the effect of a water treatment plant may be taken into account when determining the ELV of the installation involved, provided that an equivalent level is guaranteed for the protection of the environment as a whole and provided this does not lead to

higher levels of pollution in the environment, without prejudice to Directive 2006/11/EC or the Directives implementing it;

Emergency: a situation that causes, or poses an imminent threat of causing, serious harm to watercourse States or other States and that results suddenly from natural causes, such as floods, landslides or earthquakes or from human conduct, such as industrial accidents;

Emergency plans: in case of emergency events: any measure suitable to control, to counteract and to relieve a serious incident, which endangers the human or natural environment; Serious incidents may result from earthquakes, fire, floods, ice, storms, avalanches, and landslides and from releases of toxic substances into the environment;

*Estimating and quantifying Risk: t*he precise estimation and quantification of risk is a major goal of risk assessment and receives the lion's share of attention in the literature. Judgments on risk require reliable estimates and quantitative measures are the hallmark of science. Yet such estimates rely largely on extrapolation-extrapolation from past experience, from experiments (usually with animals), or from simulations (often with computer models). The particular applications of such methods all entail scientific uncertainty, the magnitude of which is variable, the handling of which is crucial, and the explicit expression of which often separates better from weaker studies. In general, the degree of uncertainty bears an inverse relationship to the scientific understanding of the causal structure of a given hazard. For direct consequences of frequent, repetitive events with well-established causal relationships, it is possible to estimate with considerable accuracy individual or societal (or both) risks of mortality;

External measures: any measures outside of a certain plant, installation and public or private property, suitable to counteract, mitigate or minimise the consequences of a certain incident. The external measures might be of active and passive nature;

Hazard: a threat to people and to what they value (property, environment, future generations, etc.) and a risk is a measure of hazard; 'hazard` means the intrinsic property of a dangerous substance or physical situation, with a potential for creating damage to human health and/or the environment;

Hazardous activity: any activity in which one or more hazardous substances are present or may be present in quantities at or in excess of the threshold quantities listed in Annex I Convention on Industrial Accidents, and which is capable of causing transboundary effects;

Hazard Identification: the identification of hazards occurs through the monitoring of outbreaks or by routine screening. The design and implementation of sensitive, low-cost, and acceptable monitoring and screening networks is a continuing scientific task, but it is an administrative and political one as well;

Hazardous substances: substances which have toxic, carcinogenic, mutagenic, teratogenic with bio-accumulative effects, in particular those being persistent and having significant adverse impact on living organisms;

Industrial accident: an event resulting from an uncontrolled development in the course of any activity involving hazardous substances either: (i) in an installation, for example during manufacture, use, storage, handling, or disposal; (ii) during transportation

Internal measures: any measure inside of a certain plant, installation and public or private property, suitable to minimise the occurrence of a certain risk or in case that the incident occurred, to control and protect the normal course of the operation involved (e.g. of a WWTP or at least, to

minimise the water pollution impacts, resulting from the incident. Internal measures might be of active and passive nature.

Impact: any effect caused by a proposed activity on the environment including human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments or other physical structures or the interaction among these factors; it also includes effects on cultural heritage or socio-economic conditions resulting from alterations to those factors;

Installation: a technical unit within an establishment in which dangerous substances are produced, used, handled or stored. It shall include all the equipment, structures, pipework, machinery, tools, private railway sidings, docks, unloading quays serving the installation, jetties, warehouses or similar structures, floating or otherwise, necessary for the operation of the installation;

KIEV PROTOCOL: 2003 UNECE Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context

Major accident shall mean an occurrence such as a major emission, fire, or explosion resulting from uncontrolled developments in the course of the operation of any establishment covered by this Directive, and leading to serious danger to human health and/or the environment, immediate or delayed, inside or outside the establishment, and involving one or more dangerous substances;

Operator: any individual or corporate body who operates or holds an establishment or installation or, if provided for by national legislation, has been given decisive economic power in the technical operation thereof;

Party: unless the text otherwise indicates, a Contracting Party to a Convention;

Parties concerned: any Party of origin and any affected Party;

Party of origin: any Party or Parties under whose jurisdiction an industrial accident occurs or is capable of occurring;

Passive measures: may include communication, awareness and responsiveness;

*Point and non-point source*s *of water pollution:* the sources of pollutants and nutrient (i) "International Commission" means the organisation established by Article 18 of this Convention s the input of which to waters is caused either by locally determined discharges (point source) or by diffuse effects being widespread over the catchment areas (non-point sources);

Pollution: the direct or indirect introduction, as a result of human activity, of toxic or dangerous substances, vibrations, heat or noise into the surrounding environment including: air, water or land soil which may be harmful to human health or the quality of the environment, result in damage to material property, or impair or interfere with amenities and other legitimate uses of the environment;

Pollution of an international watercourse: any detrimental alteration in the composition or quality of the waters of an international watercourse which results directly or indirectly from human conduct;

Pollutant: any substance present in ambient air and likely to have harmful effects on human health and/or the environment as a whole;

Priority substances: substances identified in accordance with Article 16 (2) and listed in Annex X. Among these substances there are *priority hazardous substances* which means substances identified in accordance with Article 16 (3) and (6) for which measures have to be taken in accordance with Article 16 (1) and (8).

Preventive measures: any measures taken in response to an event, act or omission that has created an imminent threat of environmental damage, with a view to preventing or minimising that damage;

Public: one or more natural or legal persons;

Remedial measures: any action, or combination of actions, including mitigating or interim measures to restore, rehabilitate or replace damaged natural resources and/or impaired services, or to provide an equivalent alternative to those resources or services as foreseen in Annex II;

Risk: by definition, is the product of the probability of a harmful event and its consequence: Risk= (probability of harmful event) x (consequence);

Risk assessment: defined in its broadest sense, deals with the probability of any adverse effects. Risk assessment (RA) is a decision support tool, like impact assessment, hazard assessment, and life cycle assessment;

Risk Acceptability or Tolerability: A key motivation for developing quantitative measures of risk is their use in answering the frequent, and somewhat misleading, question how safe is safe enough? The stabilization of a level of risk over a period of time implies that society, through operation of the market, has accepted that degree of risk from a certain product or activity. Others have pointed out, however, that accepted is not the same as acceptable, that acceptability connotes a degree of consent that rarely accompanies impositions of risk. In this sense, tolerability perhaps better captures most actual risk situations;

Risk assessment procedure: comprises three distinct steps: (i) the identification of hazards likely to produce hazardous events, (ii) estimation of the risks of such events and their contingent consequences, the social evaluation or weighting of the risk so derived and (iii) identification and implementation of the measures to reduce or eliminate the risks;

Release: any introduction of pollutants into the environment as a result of any human activity, whether deliberate or accidental, routine or non-routine, including spilling, emitting, discharging, injecting, disposing or dumping, or through sewer systems without final waste-water treatment *Substances hazardous* to water means substances the hazard potential of which to water resources is extraordinarily high so that their handling requires special preventive and protective measures;

Transboundary impact: any significant pollution and adverse effect on the riverine environment resulting from a change in the conditions of waters caused by human activity and stretching out beyond an area under the jurisdiction of a Contracting Party. Such changes may affect life and property, safety of facilities and the aquatic ecosystems concerned;

Transboundary effects: serious effects within the jurisdiction of a Party as a result of an industrial accident occurring within the jurisdiction of another Party;

Transboundary waters: any surface or ground waters which mark, cross or are located on boundaries between two or more States; wherever transboundary waters flow directly into a lake or the sea, these transboundary waters end at a straight line across their respective mouths between points on the low-water line of their banks.

1 Introduction

1.1 The UNECE project on hazard and crisis management in the Danube Delta

The UNECE project on hazard and crisis management in the Danube Delta aims at improving the cooperation between the three countries in the Danube Delta region – the Republic of Moldova, Romania and Ukraine – through enhancing and, where possible, harmonizing the mechanisms and approaches for efficient and effective hazard and crisis management.

The project is carried out within the Assistance Programme of the UNECE Convention on the Transboundary Effects of Industrial Accidents (Industrial Accidents Convention). The Assistance Programme, launched in 2004, aims at supporting Parties and UNECE countries with economies in transition to improve industrial safety through the implementation of the Convention.

The Republic of Moldova, Romania and Ukraine cooperate within the project on hazard and crisis management in the Danube Delta, led by the Secretariat to the UNECE Industrial Accidents Convention. The project is mainly funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (for the hazard management part of the project) and it is supported by other donors, such as the Netherlands and Finland, for the crisis management part.

The project aims to enhance the legislative framework for hazard and crisis management by harmonizing safety standards at major hazardous facilities located in the Danube Delta, especially at oil terminals; enhancing cooperation between competent authorities and operators of major industrial facilities, also in the transboundary context; and drafting safety guidelines for oil terminals and training inspectors to enforce safety.

In addition, the project countries will draft action plans to improve hazard and crisis management, exercise through a table-top and field-exercise to test their joint response to an oil spill in the Danube Delta, establish bilateral or trilateral sectoral agreements related to hazard and crisis management, and raise public awareness about the importance of hazard management through contact with the media.

1.2 Purpose of the report

Interest in joint disaster operations during accidents has grown steadily over the past decade. In part, this is due to major international initiatives, agreements, policies and directives that have raised awareness of the widespread problems of hazard and crisis management. More importantly however, this is due to greater political openness and support among citizens, governments and the private sector for recognizing the importance of improving the practice of hazard and crisis management.

The growing demand for improvements of the hazard and crisis management practices has led to new national legislation and international commitments for the implementation of the UNECE Industrial Accidents Convention.

Despite this growing interest, there has been very little detailed analysis of the growing body of the hazard and crisis management legislation, practices and cross-border cooperation on industrial safety. And there has not yet been an analytical framework or tool to compare legislation, monitor implementation, or assess whether national legislation and procedures are consistent with the emerging set of international commitments.

Therefore, this report responds to one of the tasks of the UNECE project on hazard and crisis management in the Danube Delta, specifically to the elaboration of a comparative analysis of the existing national legal frameworks for hazard and crisis management in the three project countries. The report also contains safety standards for implementation by the project countries and a draft trilateral agreement on hazard and crisis management in the Danube Delta to be adopted by the project countries.

1.3 Methodology

The importance of understanding the national legal frameworks for hazard and crisis management, in the Lower part of Danube River, in the Republic of Moldova, Romania and Ukraine, from a comparative perspective is due to several rationales.

Firstly, considering the outstanding environmental value and sensitivity of the Danube Delta, this requires joint efforts for its protection. In addition to the existence of the Danube Delta, the investigated region includes the Scientific Reserve "Lower Prut" and Ramsar site "Lower Prut Lakes" in the Lower Prut area (Republic of Moldova), and of the "Regional Landscape Park "Izmail Islands" and Local Landscape Reserve "Lung" (Ukraine) and UNESCO Biospfere Reserve in Romania.

Secondly, a cross national analysis may improve hazard and crisis management, through:

(i) Improved understanding of the shortcomings and challenges,
(ii) Enhanced acceptance of transboundary dimension and consequently of the international cooperation to provide solutions when dealing with accidental pollution with transboundary impacts,
(iii) Exchange of concepts and attitude towards responding to industrial accidents,
(iv) learning from successes and failures to improve the practice of hazard and crisis management, and
(v) Enhanced national contribution towards meeting the international commitments.

The present comparative analysis of the existing national legal frameworks for hazard and crisis management is based on the existing national legal frameworks for hazard and crisis management in the three project countries, which were reviewed and analysed in the context of the most relevant international frameworks, such as the UNECE Industrial Accidents Convention, the Danube River Basin Convention, the EU Water Framework Directive, and other relevant material like the benchmarks (criteria and indicators[1] for self-assessment of the progress achieved towards the implementation of the Convention).

[1] Indicators and criteria are mandatory instruments, adopted by the 6th meeting of the Conference of the Parties (The Hague, 8-10 November 2010), to identify and address the implementation challenges and subsequently to measure the progress achieved under the Industrial Accidents Convention (ECE/CP.TEIA/2010/6); (http://www.unece.org/env/teia.html)

The report is mainly based on data and information officially provided by the secretariat to the UNECE Industrial Accidents Convention. Wherever possible, the following hierarchy of information has been used:

1. Data and information officially provided by the project countries and the UNECE secretariat
2. Data and information that has previously been collected in the context of the project and the activities of UNECE Industrial Accidents Convention, in particular national implementation and self-assessments reports prepared by the three project countries and workshops reports
3. Other published data and information.

The methodology for drafting the comparative analysis, including the safety standards, consisted of the following two steps:

1. Assessment of interlinkages and synergies between the UNECE Industrial Accidents,Convention, the Danube River Basin Convention (DRPC), and the EU Water Framework Directive (WFD) to understand how the efforts for implementing the respective Conventions facilitate meeting the WFD objectives for a good water status.

2. Analysis of the national legal frameworks in the three countries through:

- Presentation of the national legal frameworks in place in each of the countries in the Danube Delta Region, following the outline of the mechanism proposed and accepted ìn the Strategic Approach[2], specifically following the six main working areas of the Convention.

  (1) Identification of hazardous activities;

  (2) Notification of hazardous activities;

  (3) Prevention;

  (4) Preparedness;

  (5) Response and mutual assistance;

  (6) Information to the public and public participation.

- Identification of similarities and differences in the existing national legislation with due regard to industrial accidents prevention, preparedness and response within the project countries.
- Highlighting gaps and, if any, contradictions in the legal provisions of the project countries regarding international legal frameworks, particularly the UNECE Industrial Accidents Convention and the DRPC.

[2] At its fifth meeting (Geneva, 25–27 November 2008), the Conference of the Parties to the Industrial Accidents Convention adopted the Strategic Approach for the implementation phase of the Assistance Programme (ECE/CP.TEIA/2008/5); (http://www.unece.org/env/teia.html)

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The report is structured in seven chapters that follow gradually (and from different perspectives) the first task of the ToR - the preparation of the Comparative Analysis on the Hazard and Crisis Management Legislation and Policy in the Danube Delta for the Republic of Moldova, Romania and Ukraine, based on the methodology proposed at chapter 1.3, and in accordance with the obligations imposed by the relevant legislation, mainly the UNECE Industrial accidents Convention, the Water Framework Directive (WFD), and the provisions of the Danube River Protection Convention (DRPC).

After Chapter 1 Introduction, Chapter 2 of the report presents the legal reference framework relevant to the investigations of this report, followed by the analysis of synergies between the Conventions and the WFD of the Chapter 3. The fourth chapter highlights the characteristics of the investigated area, specifically Danube Delta Region, while Chapter 5 focuses on the presentation of the results of the comparative analysis of national legal frameworks per specific working areas of the hazards and crisis management in the Danube Delta.

The proposed prioritized actions in hazard management in the Danube Delta Region are presented in the Chapter 6. Finally, Chapter 7 is intended to offer conclusions and recommendations, synthesizing the essential elements of the analysis undertaken and making connection with the next reports and the whole project context.

The report includes two annexes: the draft Trilateral Agreement on cooperation related to industrial pollution crises and hazard management in the Danube Delta Region, and the Safety Standards.

2 The legal reference frame

2.1 Global policy context

When asked to list the five main environmental issues ”that Europeans are worried about, averaged results for the EU25 show that nearly half of the respondents are worried about “water pollution” (47%), with figures for individual countries going up as far as 71%[3].

The increasing numbers of cases with severe hazards of transboundary environmental impacts of human activities have imposed States to conclude mechanisms of cooperation, bilateral and/or multilateral legal instruments.

The adoption at the beginning of the 1990s of several legal instruments and comprehensive programmes lead to an improved cooperation on environmental issues and concrete actions to cope with environmental hazards.

The cooperation at regional and global scales on hazard management was facilities by a number of UNECE initiatives and by the EU legally binding instruments for the Member States which have address various topics of transboundary pollution.

[3] http://ec.europa.eu/environment/water/water-framework/info/intro_en.htm

From the legal perspective, the Rio Declaration on Environment and Development[4] adopted by the Earth Summit in 1992 represented the substantial guidance for the subsequent European and UNECE initiatives. The Rio Declaration proclaimed several principles[5] which were guiding national environmental legislation. Moreover, so called the "Helsinki process[6]" offered a good basis for new legal regional instruments, such as the Danube River Protection Convention, but also for the dialogue on environmental pollution issues in a transboundary context.

Therefore, the understanding of the terms and definitions, of the corresponding provisions from different relevant instruments should be taken into account jointly and from the transboundary perspective.

For the purpose of this present analysis, the UNECE Industrial Accidents Convention, the Danube River Protection Convention and the EU WFD have been considered as the most significant international legal frameworks, which are analyzed with a view to review synergies and to match the principal provisions and commitments in relation to topics connected to the hazard and risk management, such as: the precaution and prevention of the accidents, emergency preparedness and response, notification and public information or mutual assistance.

The analysis also includes the international legal frameworks' approach to transboundary waters and its relevance for the future development of the relevant legislation on water pollution, hazard and risk management, emergency preparedness and mutual assistance.

2.1.1 Introduction to the UNECE Industrial Accidents Convention

The aim of the Convention on the Transboundary Effects of Industrial Accidents[7] is to protect the population and the environment against transboundary industrial accidents through prevention,

[4] The Rio Declaration on Environment and Development was adopted by the Earth Summit in 1992 with the goal of establishing a new and equitable global partnership through the creation of new levels of cooperation among States, key sectors of societies and people and by recognizing the integral and interdependent nature of the Earth.

[5] The Rio Declaration proclaimed inter alia principles which have a direct relevance for the subject of our study: "Precaution" - Principle 15, "Notification in case of emergencies - Principle 18, "Prior information and early consultation - Principle 19. The same principles were guiding national legislation on environmental matters – in accordance with Principle 11 "States shall enact effective environmental legislation. ...", which can also be considered as a clear reference to the "domestic" duties of all states in a broad sense so that they should have all necessary legal provisions, in particular, for prevention and adequate management of the environmental hazards.

[6] At the same time in Europe, the "Helsinki process" namely the extensive cooperation under the aegis of the Conference for European Security and Cooperation (CSCE) offered a good basis for the dialogue on environmental issues. This was reflected by several initiatives particularly in the field of protecting waters from pollution such as, the "Declaration on the cooperation of the Danube countries on water management and especially water pollution control issues of the river Danube" in 1985 (Bucharest Declaration), the Convention on the Protection and Use of Transboundary Watercourses and International Lakes adopted in 1992, and the Convention on the Transboundary Effects of Industrial Accidents 1992, Helsinki.

[7] The United Nations Economic Commission for Europe Convention on the Transboundary Effects of Industrial Accidents, adopted on 17 March 1992, was signed by 26 UNECE member countries and the European Union and entered into force on 19 April 2000.

reduction of their frequency and severity and by mitigating their effects, and through active international cooperation between the contracting Parties, before, during and after an industrial accident.

The Industrial Accidents Convention also encourages its Parties to help each other in the event of such an industrial accident, to share information and technology, and to cooperate on research and development.

The UNECE Industrial Accidents Convention is part of a pan-European legal framework to protect the environment and encourage sustainable development that has been negotiated by governments within the UNECE in response to regional challenges[8].

According to its provisions, Parties[9] shall take appropriate measures to protect human beings and the environment against industrial accidents by preventing such accidents as far as possible, by reducing their frequency and severity and by mitigating their effects. Further, the Convention stipulates the necessity to apply preventive, preparedness and response measures, including restoration measures (The United Nations Economic Commission for Europe carries out the secretariat functions for the Convention).

2.1.2 Benchmarks for the implementation of the UNECE Industrial Accidents Convention

The Strategic Approach for the implementation phase of the Assistance Programme (ECE/CP.TEIA/2008/5) within the frame of the decision of the Conference of the Parties to the Convention on the Transboundary Effects of Industrial Accidents provides a step-wise/cyclic mechanism for the periodical collection of data, criteria and indicators for self-evaluation of the progress achieved.

Several working areas of the Strategic Approach have been identified, of which the following six are the priorities:

(1) Identification of hazardous activities;

(2) Notification of hazardous activities;

(3) Prevention;

(4) Preparedness;

(5) Response and mutual assistance;

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8 The implementation framework of the UNECE Industrial Accidents Convention also consists four other multilateral agreements: Convention on Long-range Transboundary Air Pollution and its eight Protocols; Convention on the Protection and Use of Transboundary Watercourses and International Lakes and its Protocol on Water and Health; Convention on Environmental Impact Assessment in a Transboundary Context; and Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.

9 To date there are 41 Parties to the UNECE Industrial Accidents Convention, which include, besides the European Union (EU) and 25 of the EU member States (excluding Ireland and Malta), Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Kazakhstan, Monaco, Montenegro, Norway, the Republic of Moldova, the Russian Federation, Serbia, Switzerland and the former Yugoslav Republic of Macedonia.

(6) Information to the public and public participation.

The ongoing cyclic mechanism facilitates not only an updated assessment of the implementation status but equally important requires that countries participating in the Assistance Programme to identify challenges and deficiencies to implement the Convention, and the related actions to address other challenges.

In support of the participating countries, a Check list form for monitoring, analysing, planning and evaluation has been prepared, and a list of indicators and criteria to be used as benchmarks for self-assessment of the progress achieved.

The whole assessment process benefits of a logical distribution of the indicators per working area, and of criteria for progress stages, which are summarized for reporting obligations within the national assessments.

2.2 Danube River Protection Convention (DRPC)

The Convention on Co-operation for the Protection and Sustainable Use of the Danube River (Danube River Protection Convention, or DRPC), signed on 29 June 1994 in Sofia, forms the overall legal instrument for co-operation on transboundary water management in the Danube River Basin. The Convention is based on the former Bucharest Declaration for the Protection of the Danube River and on the UNECE Convention on the Protection and Use of Transboundary Water Courses and International Lakes (Helsinki, 1992)[10]. Romania acts as the Depositary of this Convention.

The International Commission for the Protection of Danube River (ICPDR) was created to implement the Danube River Protection Convention. It is both a forum to allow its contracting parties[11] to coordinate the implementation of the DRPC and a platform to review the progress they make. The key objectives of the ICPDR include the following:

- Ensure sustainable water management
- Ensure conservation, improvement and rational use of surface waters and ground water
- Control pollution and reduce inputs of nutrients and hazardous substances
- Control floods and ice hazards.

When the WFD, formally Directive 2000/60/EC, was adopted in October 2000, all countries cooperating under the DRPC (which includes at present 8 EU and 6 non EU member states) decided to make all efforts to implement the Directive throughout the whole basin.

The Danube Delta Region countries Republic of Moldova, Romania, and Ukraine, as the other Contracting Parties to the DRPC, make all efforts to achieve the sustainable and equitable water management in the Danube basin, including the reduction of the pollution loads of the Black Sea from sources in the catchment area.

[10] The Convention was approved by the European Communities in a Council Decision (97/825/EC) on 24. November 1997 as published in OJ L 342/18.

[11] Contracting Parties are: Germany, Czech Republic, Austria, Slovakia, Hungary, Slovenia, Croatia, Serbia, Montenegro, Bosnia-Herzegovina, Bulgaria, Romania, Moldova, Ukraine, and the European Union.

2.3 Water Framework Directive (WFD)

The WFD is establishing the framework for Community action in the field of water policy for the protection of inland surface waters, groundwater, transitional waters and coastal waters.

This WFD has a number of objectives, such as preventing and reducing pollution, promoting sustainable water usage, environmental protection, improving aquatic ecosystems and mitigating the effects of floods and droughts, aiming to achieve “good ecological and chemical status” for all Community waters by 2015.

Several successive amendments and corrections (2001, 2008 and 2009), have been incorporated to the WFD.

The river basin management established under the WFD (entered into force December 2009) begins with an analysis of the characteristics of the river basin district, a review of the impact of human activity on water status, and an economic analysis of water use. Programmes to monitor water status must be established, along with programmes of measures for each river basin district in order to achieve the specified environmental objectives. Then, for each river basin district, a river basin management plan must be produced with the active involvement of all interested parties.

Finally, the specific programmes of measures must be implemented so as to achieve the objective of good status for all waters within each river basin. The first RBM plans cover the period 2009-2015. They shall be revised in 2015 and then every six years thereafter.

The WFD has been transposed in the national legislation in all three countries in the Danube Delta Region. In addition, the involved countries have elaborated their own river basin management plans, contributed to the development of the International District Management Plan of the Danube River Basin, and are currently completing the development of the Danube Delta Region Management Plan, to be finalized in 2014.

To achieve environmental objectives by 2015, the River Basin Management Plan provides the implementation of the "Programme of Measures" that has become operational by December 22, 2012.

The programs of measures include basic measures that provide implementation of the EU requirements in the field of water, and where the basic measures are not sufficient, supplementary measures are applied to achieve the status / good ecological potential and good chemical status.

3 Synergies between the UNECE Industrial Accidents Convention, the ICPDR Danube River Protection Convention and the EU Water Framework Directive

3.1 Overview of synergies between the three instruments

As everywhere else in the river basins, the natural and human geographical contexts are very diverse, and thus the interlinkages between anthropogenic pressures coming from human activities (industry, agriculture, urbanisation, and ecological status may vary according to the sensitivity of river ecosystems and combinations of pressures. It is essential to properly identify the strength of the pressures and impacts relationships.

This diversity has been reflected as well in the scope of work and the provisions of different international and regional legal instruments approaching issues connected with industrial pollution, hazard and crisis management and the relevant measures, and the EU Water Policy, more specifically the Water Framework Directive (WFD).

This chapter aims at providing an overview of the synergies between the two Conventions and the WFD. The overview is presented in the tables 1 – 7 which compare the UNECE Convention's articles with the DRPC and the WFD and which are structured according to the six main working areas of the industrial Accidents Convention (see 2.1.2). This approach was chosen because the overview of the legislation on issues linked with hazard and crisis management in the countries in Danube Delta Region is facilitated by the understanding of the interlinkages between international conventions and European policy in transboundary context, through an improved awareness about the objectives, provisions, instruments of implementation and actual operation, in relation to industrial accidental pollution. It can also reveal the weaknesses of these instruments and identify those elements which should be further developed.

3.2 Conclusions

There are several topics of relevance resulted from this comparative analysis of the selected international legislation:

- In each of the selected legislation there are concrete provisions and commitments in terms of risk reduction and control of accidental transboundary impacts imposing preventive and control measures of the risk of accidental pollution;

- The WFD provides a regional approach to the protection and management of transboundary waters in the European Community;

- The WFD is a legal instrument of the EC providing coherent concepts, harmonized strategies and compatible terminology for water legislation, including issues related to accidental pollution;

- The WFD creates an adequate legal response through policy integration at different levels: regional, national and international water (Fig. 1).

- Transboundary pollution is seen as the most critical issue covered by all three legal documents;

- Discharges of pollutants represent a direct threat to human health and ecosystems reflected by all three legal documents;

- Consideration of interests of the potentially affected countries due to transboundary environmental impacts, reflected by the UNECE Industrial Accidents Convention and the DRPC;

- The WFD imposes legally binding instruments and objectives to deal with transboundary pollution;

- The UNECE Industrial Accidents Convention main concern: prevention, control and reduction of any industrial accident with "transboundary impact", including issues related to hazard and crisis management in situation of accidental pollution;

- The UNECE Industrial Accidents Convention is a regional framework which encourages bilateral and multilateral agreements, in order to develop harmonized policies, strategies and programmes covering the relevant transboundary catchment areas.

- The UNECE Industrial Accidents Convention and the DRPC are clearly based on polluter pay principle and prevention principle.

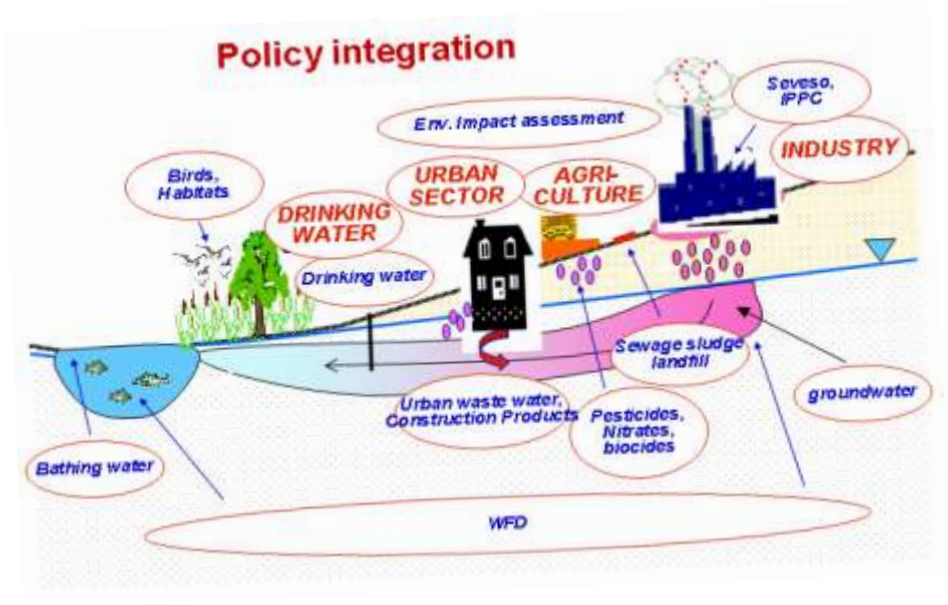

Figure 1. Policy integration

1. Transboundary cooperation			
UNECE Industrial Accidents Convention	**ICPDR DRPC**	**EU WFD**	**Remarks / Synergies**
The Parties shall, by means of exchange of information, consultation and other cooperative measures and without undue delay, develop and implement policies and strategies for reducing the risks of industrial accidents and improving preventive, preparedness and response measures, including restoration measures, taking into account, in order to avoid unnecessary duplication, efforts already made at national and international levels.	Art. 2 The Contracting Parties pursuant to the provisions of this Convention shall cooperate on fundamental water management issues and take all appropriate legal, administrative and technical measures, to at least maintain and improve the current environmental and water quality conditions of the Danube River and of the waters in its catchment area and to prevent and reduce as far as possible adverse impacts and changes occurring or likely to be caused.	(14) The success of this Directive relies on close cooperation and coherent action at Community, Member State and local level as well as on information, consultation and involvement of the public, including users.	The concept of transboundary pollution and impacts is at the heart of the DRPC as the scope itself is defined in reference to transboundary impacts (*'Subject to this Convention in particular shall be the following planned activities and ongoing measures as far as they cause or are likely to cause transboundary impacts'*). Besides, a specific provision covers the prevention, control and reduction of transboundary impact.
	Part II Multilateral cooperation	(23) Common principles are needed in order to coordinate Member States' efforts to improve the protection of Community waters in terms of quantity and quality, to promote sustainable water use, to contribute to the control of transboundary water problems, to protect aquatic ecosystems, and terrestrial ecosystems and wetlands directly depending on them, and to safeguard and develop the potential uses of Community waters.	
		(35) Within a river basin where use of water may have transboundary effects, the requirements for the achievement of the environmental objectives established under this Directive, and in particular all	

		programmes of measures, should be coordinated for the whole of the river basin district. For river basins extending beyond the boundaries of the Community, Member States should endeavour to ensure the appropriate coordination with the relevant non-member States. This Directive is to contribute to the implementation of Community obligations under international conventions on water protection and management, notably the United Nations Convention on the protection and use of transboundary water courses and international lakes, approved by Council Decision 95/308/EC(15) and any succeeding agreements on its application.	

Table 1. Transboundary cooperation

2. Accidental pollution			
UNECE Convention	**DRPC**	**WFD**	**Remarks**
Conscious of the role played in this respect by the UNECE and recalling, inter alia, the UNECE Code of Conduct on Accidental Pollution of Transboundary Inland Waters and the Convention on Environmental Impact Assessment in a Transboundary Context,	Art. 6 Specific water resources protection measures The Contracting Parties shall take appropriate measures aiming at the prevention or reduction of transboundary impacts and at a sustainable and equitable use of water resources as well as at the conservation of ecological resources (c) minimise by preventive and control measures the risks of	Given that three main sources of water pollution (industry, municipalities, agriculture) could not be seen in isolation, the EC water legislation had to focus disproportionately on industrial point sources. (39) There is a need to prevent or reduce the impact of incidents in which water is accidentally polluted. Measures with the aim of doing so should be included in the programme	

	accidental pollution	of measures.	
	Art. 16 Communication, warning and alarm systems, emergency plans (2) The Contracting Parties shall in the framework of the International Commission inform each other about competent authorities or points of contact designated for this purpose in case of emergency events such as accidental pollution, other critical water conditions, floods and ice-hazards. Accordingly the competent authorities shall cooperate to establish joint emergency plans, where necessary, supplementary to existing plans on the bilateral level.	(40) With regard to pollution prevention and control, Community water policy should be based on a combined approach using control of pollution at source through the setting of emission limit values and of environmental quality standards.	
		Annex VII. A summary of the programme or programmes of measures adopted under Article 11, including the ways in which the objectives established under Article 4 are thereby to be achieved; 7.8 A summary of the measures taken to prevent or reduce the impact of accidental pollution incidents;	
		(l) any measures required to prevent significant losses of pollutants from technical installations, and to prevent and/or to reduce the impact of accidental pollution incidents for example as a result of floods, including through systems to detect or give warning of such events including, in the case of accidents	

		which could not reasonably have been foreseen, all appropriate measures to reduce the risk to aquatic ecosystems.	
		1.3.3. Design of investigative monitoring - shall inform the establishment of a programme of measures for the achievement of the environmental objectives and specific measures necessary to remedy the effects of accidental pollution.	

Table 2. Accidental pollution

3. Industrial accident notification systems			
UNECE Convention	**DRPC**	**WFD**	**Remarks**
1. The Parties shall, with the aim of obtaining and transmitting industrial accident notifications containing information needed to counteract transboundary effects, provide for the establishment and operation of compatible and efficient industrial accident notification systems at appropriate levels.	Art. 16 Communication, warning and alarm systems, emergency plans (1) The Contracting Parties shall provide for coordinated or joint communication, warning and alarm systems in the basin-wide context to the extent this is necessary to supplement the systems established and operated at a bilateral level. They shall consult on ways and means of harmonising domestic communication, warning and alarm systems and emergency plans. (2) The Contracting Parties shall in the framework of the International		

	Commission inform each other about competent authorities or points of contact designated for this purpose in case of emergency events such as accidental pollution, other critical water conditions, floods and ice-hazards. Accordingly the competent authorities shall cooperate to establish joint emergency plans, where necessary, supplementary to existing plans on the bilateral level. (3) If a competent authority identifies a sudden increase of hazardous substances in the Danube River or in waters within its catchment area or receives note of a disaster or of an accident likely to cause serious impact on the water quality of the Danube River and to affect downstream Danubian States this authority shall immediately inform the contact points designated and the International Commission according to the way of procedure introduced by the Commission.		
2. In the event of an industrial accident, or imminent threat thereof, which causes or is capable of causing transboundary effects, the Party of origin shall ensure that affected Parties are, without delay, notified at appropriate levels through the industrial accident notification systems. Such notification shall include the elements contained in Annex IX hereto.			
3. The Parties concerned shall ensure that, in the event of an industrial accident or imminent threat thereof, the contingency plans prepared in accordance with Article 8 are activated as soon as possible and to the extent appropriate to the			

circumstances.			

Table 3. Industrial accident notification systems

4. Prevention			
UNECE Convention	**DRPC**	**WFD**	**Remarks**
1. The Parties shall, taking into account efforts already made at national and international levels, take appropriate measures and cooperate within the framework of this Convention, to protect human beings and the environment against industrial accidents by preventing such accidents as far as possible, by reducing their frequency and severity and by mitigating their effects. To this end, preventive, preparedness and response measures, including restoration measures, shall be applied.	Art. 2 The Polluter pays principle and the Precautionary principle constitute a basis for all measures aiming at the protection of the Danube River and of the waters within its catchment area. (5) Water management cooperation shall be oriented on sustainable water management, that means on the criteria of a stable, environmentally sound development, which are at the same time directed to: – maintain the overall quality of life; – maintain continuing access to natural resources; – avoid lasting environmental damage and protect ecosystems; – exercise preventive approach.	As set out in Article 174 of the Treaty, the Community policy on the environment is to contribute to pursuit of the objectives of preserving, protecting and improving the quality of the environment, in prudent and rational utilisation of natural resources, and to be based on the precautionary principle and on the principles that preventive action should be taken, environmental damage should, as a priority, be rectified at source and that the polluter should pay. Art. 1 (a) prevents further deterioration and protects and enhances the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems; Art. 1 Achieving the objectives of relevant international agreements, including those which aim to prevent and eliminate pollution of the marine environment, by Community action under Article 16(3) to cease or phase out discharges, emissions and losses of priority hazardous substances, with the ultimate aim of achieving	The UNECE Convention spells out what its Parties have to do to reduce the risk and prevent industrial accidents to the extent possible. First, they should identify the hazardous operations that take place within their borders but could have an effect abroad if an accident was to occur.

		concentrations in the marine environment near background values for naturally occurring substances and close to zero for man-made synthetic substances. Article 2 includes the objectives and principles of cooperation, and refers to the polluter pays principle and precautionary principle There is a need to prevent or reduce the impact of incidents in which water is accidentally polluted. Measures with the aim of doing so should be included in the programme of measures. (40) With regard to pollution prevention and control, Community water policy should be based on a combined approach using control of pollution at source through the setting of emission limit values and of environmental quality standards.	
2. The Parties shall ensure that the operator is obliged to take all measures necessary for the safe performance of the hazardous activity and for the prevention of industrial accidents.	Art. 3. Subject to this Convention in particular shall be the following planned activities and ongoing measures as far as they cause or are likely to cause transboundary impacts; e) the handling of substances hazardous to water and the precautionary prevention of accidents.	Art. 4. 1 (a) and (b) (i) Member States shall implement the necessary measures to prevent deterioration of the status of all bodies of surface water, subject to the application of paragraphs 6 and 7 and without prejudice to paragraph 8.	
To implement the provisions of this Convention, the Parties shall take appropriate legislative, regulatory, administrative and financial measures for the	Art. 5 Prevention, control and reduction of transboundary impact	Art. 4. 7. Failure to achieve good groundwater status, good ecological status or, where relevant, good	

prevention of, preparedness for and response to industrial accidents.	(1) The Contracting Parties shall develop, adopt and implement relevant legal, administrative and technical measures as well as provide for the domestic preconditions and basis required in order to ensure efficient water quality protection and sustainable water use and thereby also to prevent, control and reduce transboundary impact.	ecological potential or to prevent deterioration in the status of a body of surface water or groundwater is the result of new modifications to the physical characteristics of a surface water body or alterations to the level of bodies of groundwater.	
3. The Parties shall take appropriate measures for the prevention of industrial accidents, including measures to induce action by operators to reduce the risk of industrial accidents. Such measures may include, but are not limited to those referred to in Annex IV	Art. 6 Specific water resources protection measures The Contracting Parties shall take appropriate measures aiming at the prevention or reduction of transboundary impacts and at a sustainable and equitable use of water resources as well as at the conservation of ecological resources (c) minimise by preventive and control measures the risks of accidental pollution	Art. 9. 3. Nothing in this Article shall prevent the funding of particular preventive or remedial measures in order to achieve the objectives of this Directive.	
4. With regard to any hazardous activity, the Party of origin shall require the operator to demonstrate the safe performance of the hazardous activity by the provision of information such as basic details of the process, including but not limited to, analysis and evaluation as detailed in Annex V hereto.	Art. 7 Emission limitation: water quality objectives and criteria (2) Supplementary provisions for preventing or reducing the release of hazardous substances and nutrients shall be developed by the Contracting Parties for non-point sources, in particular where the main sources are originating from agriculture, taking into account the best environmental practice. (4) The Contracting Parties in addition shall, where appropriate, define water quality objectives and	Art. 11 3. (h) for diffuse sources liable to cause pollution, measures to prevent or control the input of pollutants. Controls may take the form of a requirement for prior regulation, such as a prohibition on the entry of pollutants into water, prior authorisation or registration based on general binding rules where such a requirement is not otherwise provided for under Community legislation. These controls shall be periodically reviewed and, where necessary, updated;	

	apply water quality criteria for the purpose of preventing, controlling and reducing transboundary impact. General guidance for this is given in Annex III, which shall be applied and specified by the Contracting Parties both, at the domestic level and jointly, where appropriate. Aiming at an efficient limitation of the emissions in areas under their jurisdiction the Contracting Parties shall ensure necessary preconditions and implementation. They shall ensure that: (a) the domestic regulations for emission limitation and their level of standards imposed are harmonised step by step with the emission limitation pursuant to this Convention; (b) waste water discharges without exception are based on a permit imposed by the competent authorities in advance and for a limited period of validity; (c) regulations and permits for prevention and control measures in case of new or modernised industrial facilities, in particular where hazardous substances are involved, are oriented on the best available techniques and are implemented with high priority (g) when planning, licensing and implementing activities and measures as referred to in Article 3, paragraph 2 and in Article 16,		

	paragraph 2 the competent authorities take into account risks of accidents involving substances hazardous to water by imposing preventive measures and by ordering rules of conduct for post accident response measures.		
	Art. 8 Emission inventories, action programmes and progress reviews (2) Based on that the Contracting Parties shall in stages establish a list of further prevention and abatement measures to be taken step by step as far as this is necessary for reaching the objectives of this Convention. (3) These action programmes in particular shall be aimed at the reduction of pollution loads and concentrations both from industrial and municipal point sources as well as from non-point sources. They shall inter alia contain the prevention and abatement measures including the timing and cost estimates.	Art. 11. 3. l. Any measures required to prevent significant losses of pollutants from technical installations, and to prevent and/or to reduce the impact of accidental pollution incidents for example as a result of floods, including through systems to detect or give warning of such events including, in the case of accidents which could not reasonably have been foreseen, all appropriate measures to reduce the risk to aquatic ecosystems.	
	Art. 9 Monitoring programmes (4) They shall periodically assess the quality conditions of the Danube River and the progress made by their measures taken aiming at the prevention, control and reduction of transboundary impacts. The results will be presented to the public by appropriate publications.	Art. 17. Strategies to prevent and control pollution of groundwater	
		ANNEX VII	

		A. River basin management plans shall cover the following elements: 7.8. a summary of the measures taken to prevent or reduce the impact of accidental pollution incidents; (11) As set out in Article 174 of the Treaty, the Community policy on the environment is to contribute to pursuit of the objectives of preserving, protecting and improving the quality of the environment, in prudent and rational utilisation of natural resources, and to be based on the precautionary principle and on the principles that preventive action should be taken, environmental damage should, as a priority, be rectified at source and that the polluter should pay.	

Table 4. Prevention

5. Emergency Preparedness			
UNECE Convention	**DRPC**	**WFD**	**Remarks**
1. The Parties shall take appropriate measures to establish and maintain adequate emergency preparedness to respond to industrial accidents. The Parties shall ensure that preparedness measures are taken to mitigate transboundary effects of such accidents, on-site duties being undertaken by operators. These measures may include, but are not limited to those referred to in Annex VII hereto. In particular, the Parties concerned shall inform each other of their contingency plans.	Art. 16 Communication, warning and alarm systems, emergency plans (1) The Contracting Parties shall provide for coordinated or joint communication, warning and alarm systems in the basin-wide context to the extent this is necessary to supplement the systems established and operated at a bilateral level. They shall consult on ways and means of harmonising domestic communication, warning and alarm systems and		

	emergency plans. (2) The Contracting Parties shall in the framework of the International Commission inform each other about competent authorities or points of contact designated for this purpose in case of emergency events such as accidental pollution, other critical water conditions, floods and ice-hazards. Accordingly the competent authorities shall cooperate to establish joint emergency plans, where necessary, supplementary to existing plans on the bilateral level. (3) If a competent authority identifies a sudden increase of hazardous substances in the Danube River or in waters within its catchment area or receives note of a disaster or of an accident likely to cause serious impact on the water quality of the Danube River and to affect downstream Danubian States this authority shall immediately inform the contact points designated and the International Commission according to the way of procedure introduced by the Commission.		
2. The Party of origin shall ensure for hazardous activities the preparation and implementation of on-site contingency plans, including suitable measures for response and other measures to prevent and minimize transboundary effects. The Party of origin shall provide to the other Parties concerned the elements it has for the elaboration of contingency plans.			

3. Each Party shall ensure for hazardous activities the preparation and implementation of off-site contingency plans covering measures to be taken within its territory to prevent and minimize transboundary effects. In preparing these plans, account shall be taken of the conclusions of analysis and evaluation, in particular the matters set out in Annex V, paragraph 2, subparagraphs (1) to (5). Parties concerned shall endeavour to make such plans compatible. Where appropriate, joint off-site contingency plans shall be drawn up in order to facilitate the adoption of adequate response measures.			
4. Contingency plans should be reviewed regularly, or when circumstances so require, taking into account the experience gained in dealing with actual emergencies.			

Table 5. Emergency Preparedness

6. Response			
UNECE Convention	**DRPC**	**WFD**	**Remarks**
1. The Parties shall ensure that, in the event of an industrial accident, or imminent threat thereof, adequate response measures are taken, as soon as possible and using the most efficient practices, to contain and minimize effects.	Art. 7 Emission limitation: water quality objectives and criteria (g) when planning, licensing and implementing activities and measures as referred to in Article 3, paragraph 2 and in Article 16, paragraph 2 the competent authorities take into account risks of accidents involving substances hazardous to water by imposing preventive measures and by ordering rules of conduct for post	Annex VI Lists of measures to be included within the programmes of measures PART A Measures required under the following Directives: (iv) The Major Accidents (Seveso) Directive (96/82/EC)(2);	This is an issue as it is critical to clearly identify what are the risks at the regional, sub-regional and national level and what are the response capacities and the corresponding gaps. Sharing of responsibilities must be clearly defined and routine procedures in place e.g. how to notify, cooperate, move materials across borders, reimbursement costs, etc. Regular practice exercises are also key.

	accident response measures.	(v) The Environmental Impact Assessment Directive (85/337/EEC)(3); (xi) The Integrated Pollution Prevention Control Directive (96/61/EC).	
2. In the event of an industrial accident, or imminent threat thereof, which causes or is capable of causing transboundary effects, the Parties concerned shall ensure that the effects are assessed—where appropriate, jointly for the purpose of taking adequate response measures. The Parties concerned shall endeavour to coordinate their response measures.			

Table 6. Response

7. Mutual assistance			
UNECE Convention	**DRPC**	**WFD**	**Remarks**
1. If a Party needs assistance in the event of an industrial accident, it may ask for assistance from other Parties, indicating the scope and type of assistance required. A Party to whom a request for assistance is directed shall promptly decide and inform the requesting Party whether it is in a position to render the assistance required and indicate the scope and terms of the assistance that might be rendered.	Art. 17 Mutual assistance (1) In the interest of enhanced cooperation and to facilitate compliance with obligations of this Convention, in particular where a critical situation of riverine conditions should arise, Contracting Parties shall provide mutual assistance upon the request of other Contracting Parties. (2) The International Commission shall elaborate procedures for mutual assistance addressing, inter alia, the following issues: (a) The direction, control, coordination and supervision of assistance; (b) Local facilities and services to be rendered by the Contracting Party requesting assistance, including, where necessary, the facilitation of border-crossing formalities; (c) Arrangements for compensating the assisting Contracting Party and/or its personnel, as well as for transit through territories of third Contracting Parties, where necessary; (d) Methods of reimbursing assistance services.		
2. The Parties concerned shall cooperate to facilitate the prompt provision of assistance agreed to under	Art. 17 Mutual assistance (1) In the interest of enhanced		

paragraph l of this Article, including, where appropriate, action to minimize the consequences and effects of the industrial accident, and to provide general assistance. Where Parties do not have bilateral or multilateral agreements which cover their arrangements for providing mutual assistance, the assistance shall be rendered in accordance with Annex X hereto, unless the Parties agree otherwise.	cooperation and to facilitate compliance with obligations of this Convention, in particular where a critical situation of riverine conditions should arise, Contracting Parties shall provide mutual assistance upon the request of other Contracting Parties.		

Table 7. Mutual assistance

4 Introduction to the studied area

4.1 Description of Danube Delta Region

4.1.1 Location

The investigated area belongs to the Danube Delta Region.

During its 2,800km (1,780 mile) course, the Danube River runs through cities, valleys, and deep, wide gorges. Just before the Danube pours into the Black Sea, it splits into three branches, the Chilia, Sulina, and Sfântu Gheorghe. The Danube Delta was formed for more than 6,500 years ago. It is a unique area, the second largest deltas in Europe, shared between Romania and Ukraine, which merges important natural heritage[12] characteristics of an ecosystem with a rich diversity of wetland habitats, and with its vitally important buffer function between the Danube River Basin and the Black Sea. It provides a unique habitat of canals, reed beds (the largest single area on Earth, covered by reed), lakes, and ponds, but also a critical refuge for several globally threatened species (the largest colony from Europe of Pelicans).

Pollution, damming, industrialisation, agriculture, livestock, and urban settlements disrupt the fragile ecology of the delta.

4.1.2 Vulnerability characteristics of the Danube Delta Region

The Danube River is influenced, from its source to its outlet into the Black Sea (via the Danube Delta in Romania and Ukraine), by the water quality status of its tributaries.

The Danube Delta is the best preserved European deltas due to the low-intensity use of the natural resources, a reduced farming practised only at the subsistence level, and even more important due to a low population density (Romania[13] has the lowest density of 4 inhabitants/km^2), which evidently exercises a limited anthropogenic influence on the ecosystem.

The existence of several large oil terminals and harbours in the region, such as Tulcea, Galati (RO), Reni, Vilcovo, Cilia, Izmail (UA), and Giurgiulesti (Republic of Moldova) also justifies the need for effective cross-border cooperation on hazardous industrial safety (Fig. 2).

[12] The Danube Delta is the largest wetland in Europe, protected under three international conventions: 1990 – UNESCO "Man and Biosphere Program", 1990 - the List of the World Cultural and Natural Heritage, 1991 - RAMSAR Convention and Natura 2000.

13 Source: Romanian National Institute of Statistics, statistics May 2010

Figure 2 - The Danube Delta Region

4.1.3 Significant water management issues (SWMIs) of Danube Delta Region

The first step of the WFD process was completed in 2004 by finalizing the 'Danube River Basin Analysis'(WFD Article 5), or Roof Report, which was the first comprehensive study of the basin's transboundary surface and groundwaters, where the three Danube Delta Region countries have contributed.

The Roof Report helped identify four significant water management issues in the Danube Basin District for surface waters: pollution by organic substances, nutrients and hazardous substances, and alterations to hydromorphology (such as the structural characteristics of the shape, natural morphology and boundaries of rivers, lakes, transitional and coastal waters); and two transboundary groundwater issues including alterations to quality and quantity. For each SWMI, visions and operational management objectives have been developed based on shared values and for the DRBD with a long-term perspective.

Overall, the visions and management objectives reflect the joint approach among all Danube countries and support the achievement of the WFD objectives in a very large, unique and heterogeneous European river basin.

5 Comparative analysis of national legal frameworks per working area in the countries of Danube Delta Region

5.1 Identification of hazardous activities (HA)

The assessment of the level of implementation in the area of identification of hazardous activities (HA) highlights great efforts of all three countries to establish and implement an efficient and complete system capable to identify the HA.

There are several similarities in the current identification system among the three countries, such as:

- Commitment for implementing the international legislation, relevant to the hazard and risk management, such as UNECE Convention, DRPC;

- The concept of identification of the HA, which corresponds with the UNECE Convention provisions, including the terminology and the criteria;

- Obligations of the operator for licensing of HA;

- Joint participation within the frame of the ICPDR in the data collection process for inventories of Accident Risk Sites (ARS), following the methodologies and templates harmonized at Danube River Basin level.

The Danube countries are also contributing to the elaboration of Contaminated Sites Inventories (CSI) for waste disposal and contaminated sites and Mining Sites Inventories (MSI), also based on agreed methodologies and templates.

However, there is still room for improvement, especially in Republic of Moldova and Ukraine.

The main gaps and deficiencies are related to:

- Insufficient harmonisation and coherence in the application of an agreed procedure for notification (MD, RO, UA)
- Absence of a provision to ensure continuity over time independently from staff changes within the responsible authority/ies (MD, UA).
- Specific approved regulations are needed for identification and notification for installation having a major risk (MD)

Country	System/mechanism for ensuring Identification of hazardous activities			Reference to the relevant international policy/agreements	Main deficiency
	Collection of data	**Analysis and validation of data**	**Revision of data**		
MD	The Ministry of Economy – the Directorate of Technical surveillance and Industrial Safety elaborated "Norms and Safety Rules for the identification of dangerous industrial installations" in a special Register of such installations. (NRS 35-01-26/2012). Each installation receives a number and the request is standardised based on template. Operators are obliged to notify about their activities, during licensing process. Participation in the data collection process for inventories of ARS within the frame of the ICPDR	The correctness of the identification data is done by the Control unit of the Technical surveillance and Industrial Safety. The collected data are processing by National Working Group on Implementation, using the criteria from Annexes of Convention and location criteria. Submitted data are verified and validated by the ICPDR Secretariat in close cooperation with the reps of the APC EG	The register of installations is updated each 5-year, or when there are changes.	UNECE Convention DRPC	The system is in place but not yet legally approved. The "Norms and Safety Rules for the identification of dangerous industrial installations" are under approval by the Government. There is a need of including criteria for those installations having a major risk, not only generally for the dangerous ones. Missing provision to ensure continuity over time independently from staff changes.

Country	System/mechanism for ensuring Identification of hazardous activities			Reference to the relevant international policy/agreements	Main deficiency
	Collection of data	Analysis and validation of data	Revision of data		
		of the ICPDR	Each third year, ARS inventories are updated.		
RO	All operators under the provisions of European Commission Directive 96/82/EC[14] on the Control of Major Accident Hazards involving dangerous substances are obliged to notify in order to obtain functioning permits. Participation in the data collection process for inventories of ARS within the frame of the ICPDR	Based on operator notification the competent authorities establish if the site is upper or lower tier. For the upper tier establishments are applied the provisions of Decision 2004/2 amending the Guidelines to facilitate the identification of hazardous activities.	According to the art. 19 of Directive 96/82/EC as amended by directive2003/105/EC and to the Directive 91/692/EC on standardization reporting obligations, RO submits a 3 – year report for the installations having a ”major risk” based on a questionnaire. Each third year, ARS inventories are updated.	EU Directive DRPC	No information

[14] SEVESO II Directive. According to the Council Directive 91/692/EEC of 23 December 1991 standardizing and rationalizing reports on the implementation of certain Directives relating to the environment need to be submitted.

Country	System/mechanism for ensuring Identification of hazardous activities			Reference to the relevant international policy/agreements	Main deficiency
	Collection of data	Analysis and validation of data	Revision of data		
UA	There is a system in place for the identification which includes the analysis of the structure of the HA, the hazard level, the internal and external factors of the hazards. The competent executive authorities that are responsible for the safe operation of the potentially hazardous objects of the economic activities, territorial and local authorities of the state supervision (control) in the sphere of the civil protection in accordance to their powers establish the dates and duration of identification process and undertake necessary measures to ensure the timely and complete identification. Participation in the data collection process for inventories of ARS within the frame of the ICPDR	The competent authorities of the hazardous objects of the economic activities that carry out the identification agree the results of the identification with local authorities of state supervision in the sphere of the civil protection. Submitted data are verified and validated by the ICPDR Secretariat in close cooperation with the reps of the APC EG.	Each third year, ARS inventories are updated.	DRPC	Missing provision to ensure continuity over time independently from staff changes.

5.2 Notification of hazardous activities

In each of the investigated country the notification systems for the hazardous substances exist and are functional.

The main deficiencies are related to:

- The insufficient and unstable funds for equipment and personnel training.
- The absence of regular communication between point of contacts in the countries in the Danube Delta Region.

Country	System/mechanism for ensuring Notification of hazardous activities		Reference to the relevant international policy/agreements	Main deficiency
	Transboundary consultation on hazardous activities	Notification of hazardous activities		
MD	The mechanism of the identification of HA in transboundary context is under the responsibility of the Focal Point of the Convention and national WGI. Consultations take place as well during workshops, conferences, joint exercises and trainings.	According to the "Guidelines to facilitate the identification of hazardous activities for the purposes of the Convention", PARAGRAPH 5 "Location criteria", two location criteria[15] shall apply for the purpose of identifying hazardous activities which could cause trans-boundary effects under the Convention. This info is communicated to the neighboring countries.	UNECE Convention	For the countries participating in the project there is no single (unified) system of sending and receiving information in case of an emergency. Need of training of specialized staff.
RO	According to the Ministerial Order of the MECC 1084/2003 there is	GD 804 / 2007 of the MECC revised by GD 1033/2013 contains the obligation for the competent	UNECE Convention DRPC	Lack of regular basis communication between point of contacts form RO with MD and UA.

[15] The following two location criteria shall apply for the purpose of identifying hazardous activities capable of causing transboundary effects under the UNECE Industrial Accidents Convention: (a) Within 15 kilometers from the border, for activities involving substances that may cause a fire or explosion or involving toxic substances that may be released into the air in the event of an accident; (b) Along or within catchment areas of transboundary and border rivers, transboundary or international lakes, or within the catchment areas of transboundary groundwaters, for activities involving substances that fall under category 3, 4, 5 or 8 of part I of annex I to the Convention and that may be released into watercourses in the event of an accident. Whether or not such an activity is capable of causing a transboundary effect in such an event should be decided by the competent authority of the Party of origin, preferably in consultation with joint bodies. The decision should depend, among other things, on the existence of river warning and alarm systems and the distance between the location of the hazardous activity and the border (ECE/CP.TEIA/12 Page 21, Annex II).

Country	System/mechanism for ensuring Notification of hazardous activities		Reference to the relevant international policy/agreements	Main deficiency
	Transboundary consultation on hazardous activities	**Notification of hazardous activities**		
	a notification procedure of HA. The system is well developed. Staff checks notification and central authorities provide technical support.	authorities to inform the potential affected neighbour countries about the HA.	ESPOO Convention AARHUS Convention Bilateral agreements	
UA	The legislative basis for a procedure of data collection about the hazardous activities is developed, approved and implemented. The economic objects of HA are registered in a special register.	The notification about the results of the identification of the potential hazard is submitted to the local authorities of the state supervision in the sphere of the civil protection for general analysis of the results of the identification. Based on the analyzed identification data the local authorities of the state supervision in the sphere the civil protection prepare and every year update the lists of the potentially hazardous objects of the economic activities at the supervised territory	No information	The comparison with the good available practices and European legislation is required for their improvement and refinement. The stakeholders involved in the data collection needs the additional training.

5.3 Prevention

The assessment of the level of implementation in the area of the application of preventive measures provides positive experiences of all three countries to define and implement appropriate preventive measures.

There are several similarities in the current prevention system among the three countries, such as:

- The responsibility belongs to the operators of a hazardous activity
- The application of good practices to select and implement preventive measures
- Monitoring and controlling procedures.

The main deficiencies (MD, UA) are connected with:

- The existing gaps related to the integrated system of regime control and the safety reports
- Need to improve the cooperation between competent authorities at all levels and between competent authorities and operators of hazardous activities (MD, UA).
- Training needs
- Absence of the appropriate methodologies and procedures for analysis of consequences, risk assessment and preventive measures
- The overlapping of the responsibilities of some agencies
- Complicated procedures
- The need of using the good appropriate practices.

Country	System/mechanism for ensuring appropriate preventive measures		Reference to the relevant international policy/agreements	Main deficiency
	Responsibility for industrial safety to hazardous activity operators	**Control regime of the competent authorities**		
MD	Mechanism of giving responsibilities to operators is in place and within the indicators and criteria Republic of Moldova defined the progress level 5.	The mechanism on introducing control regime of the competent authorities is on progress level 4.	UNECE Convention	There are gaps related to the integrated system of regime control, safety reports, international cooperation. Need to improve the cooperation between competent authorities at all levels and between competent authorities and operators of hazardous activities. Need of training for the authority on how to develop guidelines for operators and how to verify the safety declarations, methodologies models, procedures and methods for hazard identification, analysis of consequences, risk assessment and preventive measures.
RO	There is a Safety Management System in place for sites under the UNECE Convention. The application of the most appropriate technology in order to prevent industrial accidents and protect human beings and the environment is achieved by applying good practices in each industrial domain based on a cost benefit analysis and as a result of safety report (risk analyzes) and through the environmental studies.	All activities including hazardous activities are subject to licensing process. Safety measures, of preventive role, periodically checked, implemented at the sites.	UNECE Convention	No information

Country	System/mechanism for ensuring appropriate preventive measures		Reference to the relevant international policy/agreements	Main deficiency
	Responsibility for industrial safety to hazardous activity operators	**Control regime of the competent authorities**		
	The appropriate education and training of all persons engaged in hazardous activities on-site under both normal and abnormal conditions is established and implemented through the Safety Management System developed by each HA operator. There are procedures for monitoring the performance and the corrective actions taken in case of non-compliance. There is in place a system for reporting major accidents or near misses, particularly those involving failure of protective measures, and their investigation and follow-up on the basis of lessons learnt (the operator notifies latest in two hours).			
UA	The Law of Ukraine «About the Objects of the Excessive Hazard (2001) regulates the responsibilities of the subjects of the economic activities in the part of safety of the objects of the excessive hazard. The corresponding territorial bodies of the central competent authority	In case of the threat of an accident with the transboundary effects the plan of localization and liquidation of the accidents must foresee the immediate notification of the corresponding bodies of the	UNECE Convention DRPC Black Sea Convention	The overlapping of the responsibilities of some agencies is still in place and complicated by the political instability that creates some problems for operators. Simplification of the procedures is needed. The comparison with the best available practices and European legislation is required for their improvement and refinement.

Country	System/mechanism for ensuring appropriate preventive measures		Reference to the relevant international policy/agreements	Main deficiency
	Responsibility for industrial safety to hazardous activity operators	**Control regime of the competent authorities**		
	responsible for protection of population and territories from the extraordinary situations of the technogenic or natural origins approve the plan of localization and liquidation of the accidents. The plan of localization and liquidation of the accidents is revised every 5 years, but also in specific situation.	states territories of which could be affected by this accident.		

5.4 Preparedness

The system for ensuring adequate emergency preparedness exists in each of the involved countries.

The main common elemente of the preparedness for interventions for industrial accidents in all three project countries are the on-site emergency plans, prepared by the operator, and implemented under the supervision of the authorities and the external emergency plans, prepared by the competent authority

These plans are revised, tested, updated periodically and harmonized in the transboundary context.

It is assessed as the most advanced existing mechanism capable to respond to the accidents and satisfy international requirements.

Still, there are issues which need further attention, which include:

- the lack of qualified experts in the field of prevention and emergency response;

- need to improve the involvement of the local authorities in the following activities:

- The process of informing and preparing the population from the emergency planning zones.
- Ensuring the necessary materials and means of intervention forces which are specific for each site.
- Need of ensuring continuing training the personal and testing at sites.
- Need to conclude agreements on crisis management in transboundary context with neighbouring countries.
- Need to harmonise the external emergency planning between neighbouring countries.

Country	System/mechanism for ensuring adequate emergency preparedness for industrial accidents			Reference to the relevant international policy/agreements	Main deficiency
	Responsibility for emergency preparedness to hazardous activity operators	**Responsibility for emergency preparedness to the competent authorities**	**Ensuring transboundary compatible emergency plans**		
MD	The operator prepare on site contingency plan which is supervised by the authorities. The offsite emergency plan is elaborated by the county inspectorate for emergency situations based on safety report and on site contingency plan. These plans are revised, tested and updated periodically. The internal emergency plans are tested, reviewed and updated, the responsible authority	The Civil protection and accident reduction plans are reviewed once every 5 years, and it is coordinated with all local competent authorities.	It is expected to get support from the results of the current project. Currently, a strategy is prepared.	UNECE Convention	The lack of specialized units in Republic of Moldova, 100% ready to act on emergency spill containment and mitigation; Lack of qualified experts in the field of prevention and emergency response Need of a 3 country joint emergency plan for operators.

Country	System/mechanism for ensuring adequate emergency preparedness for industrial accidents			Reference to the relevant international policy/agreements	Main deficiency
	Responsibility for emergency preparedness to hazardous activity operators	**Responsibility for emergency preparedness to the competent authorities**	**Ensuring transboundary compatible emergency plans**		
	is Civil Protection and Emergency Situations Service in cooperation with the operator.				
RO	Operators prepare the internal emergency plans based on risk analysis contained in the safety reports and provide the necessary data for the elaboration of external emergency plans to the competent authorities (inspectorates for emergency situations). The internal plans are reviewed, tested, and where necessary revised and updated by the operators and	The contingency plans are usually tested by competent authorities together with operators. The Internal Emergency Plans are checked by the County Inspectorates for Emergency Situations. The external emergency plan is drowned up by the County Inspectorates for Emergency Situations in collaboration with the local public authorities. After the plans are approved, parts of it are distributed to the all the responsible authorities	The external contingency plans do contain relevant information in the transboundary context, such as thresholds concentrations, accident scenarios, available capacities, intervention procedures, communication features, mutual assistance demand/supply	UNECE Convention DRPC	Need of an improved involvement of the local authorities in the process of informing and preparing the population from the emergency planning zones. Also, there are deficiencies in the endowment with materials and means of intervention forces which are specific for each site. Need of ensuring continuing training the personal and testing at sites. Need to conclude agreements on crisis management in transboundary context with neighbouring countries. Need to harmonise the external emergency planning between neighbouring countries.

Country	System/mechanism for ensuring adequate emergency preparedness for industrial accidents			Reference to the relevant international policy/agreements	Main deficiency
	Responsibility for emergency preparedness to hazardous activity operators	**Responsibility for emergency preparedness to the competent authorities**	**Ensuring transboundary compatible emergency plans**		
	County Inspectorates for Emergency Situations no longer than three years.	involved in their application.	The external emergency plans are disseminated all authorities involved in the emergency response. Through various projects specific provisions are prepared and implemented.		
UA	Planned and scheduled measures shall be implemented according to annual or quarterly plans that shall be approved by a body of state supervision (oversight) before December 1 of the	The corresponding territorial bodies of the central competent authority responsible for protection of population and territories from the extraordinary situations of the technogenic or natural origins approve the plan of localization	In case of the threat of an accident with the transboundary effects the plan of localization and liquidation of the accidents must foresee the immediate	UNECE Convention DRPC Black Sea Convention	No information

Country	System/mechanism for ensuring adequate emergency preparedness for industrial accidents			Reference to the relevant international policy/agreements	Main deficiency
	Responsibility for emergency preparedness to hazardous activity operators	**Responsibility for emergency preparedness to the competent authorities**	**Ensuring transboundary compatible emergency plans**		
	year proceeding the planned year or before the 25th day of the last month of a quarter proceeding the planned quarter.	and liquidation of the accidents.	notification of the corresponding bodies of the states territories of which could be affected by this accident.		

5.5 Response and mutual assistance

There are few agreements between[16] the countries in the Danube Delta Region, containing provisions related to industrial accidents, which include provisions for response and providing mutual assistance.

One way to improve the response in the region is suggested by all countries involved to develop a joint contingency plan and a tri – lateral agreement on crisis and hazard management.

Further, it is suggested that joint exercises should be organized within the Danube Delta Region, for testing the existing systems and quantifying the needs and exchange experience.

[16] The Agreement between the Ministry of National Defense of Romania and the Ministry of Defense of Republic of Moldova on the cooperation in the field of civil protection, signed in Bucharest, on 23 September 1994 (to be replaced by the Agreement between the Government of Republic of Moldova and the Government of Romania on the cooperation and mutual assistance during disasters).

The Agreement (No. GMCMU2) signed in Kiev, on 4th of August 1998, between the Government of Republic of Moldova and the Cabinet of Ministers of Ukraine on the cooperation in the field of preventing industrial accidents, disasters, natural calamities and removal of their consequences.

The Agreement between the Government of Romania and the Government of Ukraine, signed in Galati, on 30th of September 1997, concerning the cooperation on transboundary waters and the Rule on the acting procedure during hazardous accidental pollution incidents which cannot be avoided in the transboundary waters (revised 2007 and 2013; the revised agreement not in force).

The Agreement between the Government of Romania and the Government of Republic of Moldova, signed in Chişinău on 28th June 2010, concerning the cooperation on the protection and sustainable use of Prut and Danube waters.

Country	System/mechanism for ensuring Response and mutual assistance				Reference to the relevant international policy/agreements	Main deficiency
	Responsibility to the competent authority/operator to promptly recognize industrial accidents/immediate threat	Use of the UNECE Industrial Accident Notification System (IAN)	Use of notification systems at the local level	Responsibility to the competent authority to request and to provide assistance		

Country	System/mechanism for ensuring Response and mutual assistance				Reference to the relevant international policy/agreements	Main deficiency
	Responsibility to the competent authority/operator to promptly recognize industrial accidents/immediate threat	Use of the UNECE Industrial Accident Notification System (IAN)	Use of notification systems at the local level	Responsibility to the competent authority to request and to provide assistance		
MD	A joint plan for response to emergency in the border regions is currently prepared . Agreement in place, on mutual assistance in case of accidents and other emergencies at the electric industrial activities of the CIS member - states signed on May 30, 2002, Moscow, Russian Federation	IAN is not used. PIAC/ICPDR	Operational dispatching service 901; Local Alert System; Sirens “Attention all"; A voice message in mass media (radio, television)	There several agreements on cooperation and mutual assistance in case of emergency situations signed with Romania, Ukraine	UNECE	System in place, but not yet approved Need to conclude for all 3 countries in the Danube Delta Region of an agreement as a general framework, based on which to develop specific procedures. PIAC system not completely tailored to MD needs. Need to organize joint training sessions and in-field exercises with neighbouring countries Need to properly legalise it and made it operational

Country	System/mechanism for ensuring Response and mutual assistance				Reference to the relevant international policy/agreements	Main deficiency
	Responsibility to the competent authority/operator to promptly recognize industrial accidents/immediate threat	Use of the UNECE Industrial Accident Notification System (IAN)	Use of notification systems at the local level	Responsibility to the competent authority to request and to provide assistance		
RO	Each operator has designated a person who is responsible for the emergency situations and who is periodically trained.	No	The legal framework for the implementation of the UNECE Convention: Law 92/2003 Ministerial Order no. 811/2010 regarding approval of annex I of the TEIA, and several other GD and Ministerial Orders exist Order no 1084/2003 concerning the notification	International procedure established according to UN OCHA, EU – MIC, NATO-EADRCC.	UNECE With MD there is a Civil Protection agreement on mutual assistance.	Need to conclude for 3 countries in the Danube Delta Region an agreement as a general framework, based on which to develop specific procedures. Need to establish an integrated response and clear responsibilities for involvement of operators, also from a different country in the Danube Delta Region Improve information needed on the capabilities of the involved countries Need of more joint testing exercises Procedures for assistance request are missing

Country	System/mechanism for ensuring Response and mutual assistance				Reference to the relevant international policy/agreements	Main deficiency
	Responsibility to the competent authority/operator to promptly recognize industrial accidents/immediate threat	Use of the UNECE Industrial Accident Notification System (IAN)	Use of notification systems at the local level	Responsibility to the competent authority to request and to provide assistance		
			procedure for activities with major accident hazards.			
UA	No information	No	No information	No information	No information	Need to conclude for the 3 countries in the Danube Delta Region of an agreement as a general framework, based on which to develop specific procedures.

5.6 Information to the public and public participation

In each of the project countries the mechanism of ensuring information on the industrial accidents to the public exists.

Still improvements are needed to increase awareness and public participation.

Country	System/mechanism for Ensuring Information to the public and public participation		Reference to the relevant international policy/agreements	Main deficiency
	Information to the Public	**Ensure public participation**		
MD	The current legal frame consists of the Law no. 86 of 29.05.2014 on the impact assessment, which will enter into force in Jan 2015, and the Environmental Strategy for 2014-2023 and its Action Plan, approved by the governmental Decision nr. 301 of 24.04.2014	The public involvement is limited in the decision making process	UNECE DRPC	Insufficient awareness Need to finalize and approve a joint plan for reaction to emergency in the border regions; Need to organize joint training sessions and in-field exercises with neighbouring countries.
RO	The operator is obliged to inform permanently the public in order to ensure that information on safety measures and on the requisite behavior in the event of an accident is known, without their having to request it. The documentation drawn up by the operator can be consulted by the public. The public is informed on these opportunities during the environmental	The authorities ensure that the public is able to give its opinion in the planning for new establishments, modifications to existing establishments, developments around such existing establishments. The public as well as the personnel working inside the establishment, including long-term relevant subcontracted personnel is consulted when the emergency plans are drawn up and also the public is consulted on external emergency plans when they are established or updated. The public also participate in the testing	UNECE DRPC	Need to strengthen the public participation and establish communication channels.

	permitting procedures and also participates in decision making on sitting and construction. The safety report is made available to the public by the operators on web sites. Also during the "open gate days" organized by operators the public can get all necessary information. Information is also disseminated through flyers.	of external emergency plans. The public is participating in the environmental permitting procedures. There are established time frames for public participation through the legal framework concerning the licensing procedures. The environmental authorities take account of the outcome of public participation and inform the public of the final decision during the permitting procedures. The documentation drawn up by the operator can be consulted by the public.		
UA	MENR of Ukraine keeps a continuous contact with more than 200 environmental public organizations, that participate in the development of national programs, normative legislative acts, expertise of the construction or reconstruction of environmental dangerous objects, protection of population rights and control of the Aarhus convention implementation.	Public access to safety reports provide greater transparency, which can remove some of the concerns regarding industrial operation. Public consultation and testing the emergency plans in field exercises is required.	UNECE Convention Aarhus Convention	?

6 Prioritized actions in hazard management in the Danube Delta Region

The general objective of the present UNECE project is to improve cooperation between the three Danube Delta countries on crisis and hazard management.

It is considered that effective cross-border cooperation on industrial safety is crucial, particularly when hazardous industry is located at transboundary watercourses and upstream to sensitive areas.

Through the project implementation, the Republic of Moldova, Romania and Ukraine work together to improve cooperation on crisis and hazard management in the Danube Delta Region.

The assessment and the comparative analysis of the legal arrangements existing in the countries in the Danube Delta region followed the Strategic Approach for the implementation phase of the Assistance Programme (ECE/CP.TEIA/2008/5) within the frame of the decision of the Conference of the Parties to the Convention on the Transboundary Effects of Industrial Accidents, based on six working areas, which are considered as priorities:

(1) Identification of hazardous activities;

(2) Notification of hazardous activities;

(3) Prevention;

(4) Preparedness;

(5) Response and mutual assistance;

(6) Information to the public and public participation.

The **most relevant actions** which are suggested based on the current assessment include:

- the preparation of the **Joint Contingency Plan for the Danube Delta region**
- the development of a **tri – lateral agreement for crisis and hazard management**
- **harmonise procedures and methodologies considering the transboundary implications**
- **strengthen the expertise and facilitate training** of the personnel
- **improve awareness and public involvement**.

7 Conclusions

For the purpose of this present comparative analysis, the understanding and discussion of the current legal framework followed a transboundary perspective, to facilitate an extended comparative assessment, in addition to the legal arrangements in the Republic of Moldova, Romania and Ukraine, of the relevant international instruments in force, such as the UNECE Industrial Accidents Convention, the Danube River Protection Convention and the EU WFD.

The analysis shows the synergies between the three international legal instruments, the similarities and differences between the national legal frameworks in the three countries, and it also puts forward the needed actions in relation to topics connected to the hazard and risk management, such as: the precaution and prevention of the accidents, emergency preparedness and response, notification and public information or mutual assistance.

The comparative analysis of the legislation on issues linked with hazard and crisis management in the countries in Danube Delta Region also reveals the existing weaknesses and identifies those elements which should be further developed.

There are several topics of relevance resulted from the comparative analyses of the relevant international instruments which are summarised below:

- In each of the selected **international legislation** there are concrete provisions and commitments in terms of risk reduction and control of accidental transboundary impacts imposing preventive and control measures of the risk of accidental pollution;

- Consideration of interests of the potentially affected countries due to transboundary environmental impacts, reflected by the UNECE Convention and the DRPC;

- The UNECE Industrial Accidents Convention is a regional framework which encourages bilateral and multilateral agreements, in order to develop harmonized policies, strategies and programmes covering the relevant transboundary catchment areas.

From the perspective of the **national legislation** analysed in the three project countries, the following issues reflect the main similarities:

- Commitment for implementing the international legislation, relevant to the hazard and risk management, such as UNECE Convention, DRPC. This is illustrated through joint participation within the frame of the ICPDR in the data collection process for inventories of Accident Risk Sites (ARS), and Contaminated Sites Inventories for waste disposal and contaminated sites (CS) following the methodologies and templates harmonized at Danube River Basin level, and in the UNECE activities and projects dedicated to hazard and risk management.
- Transboundary pollution is seen as the most critical issue covered by the current national legislation;

- the main concerns in relation to crisis and risk management include: prevention, control and reduction of any industrial accident with "transboundary impact“, together with issues related to hazard and crisis management in situation of accidental pollution;
- discharges of pollutants represent a direct threat to human health and ecosystems reflected in the relevant national laws and regulations
- the responsibility belongs to the operators of a hazardous activity in each of the analyzed country
- the application of good practices to select and implement preventive measures
- monitoring and controlling procedures.

However, there are still issues in the legal arrangements and their implementation, which need improvement, such as:

- insufficient harmonisation and coherence in the application of an agreed procedure for notification (MD, RO, UA)
- specific approved regulations are needed for identification and notification for installation having a major risk (MD)
- the absence of regular communication between point of contacts in the countries in the Danube Delta Region
- need to improve the cooperation between competent authorities at all levels and between competent authorities and operators of hazardous activities (MD, UA).
- to increase the number of qualified experts in the field of prevention and emergency response to implement the legislation
- need to harmonise the emergency planning between the project countries.
- joint exercises should be organized within the Danube Delta Region, for testing the existing systems and quantifying the needs and exchange experience.

The major finding of this Comparative Analysis is that there are many similarities and differences across national crisis and hazard management contexts in the Danube Delta Region. This highlights the importance of understanding emergency management from a comparative perspective and it justifies the need for the UNECE project investigations to meet the challenges that exist.

Annexes

1. Safety Standards for the Danube Delta Region