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Checklists for contingency planning for accidents affecting transboundary waters

For our Environment

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Checklists for contingency planning for accidents affecting transboundary waters

by

UNECE Joint ad hoc Expert Group on Water and Industrial Accidents (JEG)

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On behalf of the Federal Environment Agency (Germany)

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Background: Mandate and process

In 2010, the Bureaux of the United Nations Economic Commission for Europe (UNECE) Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) and the UNECE Convention on the Transboundary Effects of Industrial Accidents (Industrial Accidents Convention) endorsed a proposal to develop a checklist or methodology for contingency planning in a transboundary context by the Joint ad hoc Expert Group on Water and Industrial Accidents (JEG). The proposal was subsequently endorsed by the sixth meeting of the Conference of the Parties of the Industrial Accidents Convention (The Hague, 2010) and confirmed by the Bureau of the Water Convention.

The aim of the checklist or methodology to be elaborated was, in particular, to take into account transboundary issues in contingency planning and to allow for the harmonization of approaches in the prevention of accidents affecting transboundary watercourses. JEG was also requested to base the checklist or methodology on existing methodologies and good practices as to avoid duplication and address common challenges in the UNECE region.

The present document contains the checklist for contingency planning to competent authorities developed by JEG and revised by a consultant (Mr. Sandor Kisgyörgy (Hungary)), with the support of the ECE secretariat. JEG was co-chaired by Mr. Peter Kovacs (Hungary) for the Water Convention and Mr. Francisc Senzaconi (Romania) for the Industrial Accidents Convention. The following members of the Joint Expert Group supported the elaboration of the checklist by providing expert input: Mr. Pavel Danielka, Mr. Pavel Dobes (Czech Republic); Mr. František Kraus (Czech Republic); Mr. Gerhard Winkelmann-Oei (Germany); Mr. Serik Akhmetov (Kazakhstan); Ms. Natalia Zgircu (Republic of Moldova); Ms. Valentina Iurcu (Republic of Moldova); Mr. Claes-Hakan Carlsson (Sweden); and Ms. Helena Nasslander (Sweden).

The Conference of the Parties to the Industrial Accidents Convention at its eighth meeting (Geneva, 3–5 December 2014) took note of the checklist and recommended its application as a tool for harmonized contingency planning between neighbouring States. It further requested the secretariat to publish the checklist in the three official languages following the testing of its application in the framework of the Danube Delta project and its review by the Meeting of the Parties to the Water Convention at its seventh session (Budapest, 17–19 November 2015). The current document has been updated, following the testing of the checklist's application during the Hazard and Crisis Management Week within the Danube Delta Project (23–26 March 2015).

The draft checklist was also sent to the Water Convention's focal points in November 2014 for comments. The Working Group on Integrated Water Resources Management is invited to review the checklist and entrust the secretariat to edit and submit it for adoption by the Meeting of the Parties at its seventh session (Budapest, 17–19 November 2015).

Based on necessary international agreements and respective national implementation by countries, authorities are invited to use the checklist, which is intended to contribute to mitigate the severity of the consequences of industrial accidents affecting transboundary watercourses, for human health and the environment.

1. Introduction

This chapter provides an introduction to the need for contingency planning, in the light of major past industrial accidents, and to the use of a checklist as a methodological tool for contingency planning before an industrial accident with possible transboundary effects would occur. It also aims at defining contingency planning and the scope of this document as well as providing an overview of the used definitions in this document.

1.1 The need for harmonised transboundary contingency planning

Potential emergency situations, including industrial accidents with large-scale impact, can occur during all lifecycle stages of a complex industrial facility. The best available and the least-hazardous technologies and equipment selection and the application of risk assessment during the design and planning stage of a facility, a sound safety culture and a systems approach to process safety management together can reduce the potential for a major accident, but do not exclude it completely.

No matter how stringent the safety standards are, accidents will occur and countries must be prepared to deal with their consequences, especially if the effects could become transboundary. The severe consequences of major industrial accidents on humans and the environment in neighbouring countries were demonstrated, not least, by the 1986 Sandoz accident in Basel (Switzerland) and the dam break of a tailings pond at a mining facility in Baia Mare (Romania) in 2000 which both threatened drinking water supplies and devastated fish stocks in downstream countries.[1] Therefore transboundary contingency planning, based on effective emergency preparedness and response planning as well as on the provision of mutual assistance, is of outmost importance to reduce the severity of such accidents and to mitigate their effects to the extent possible.

Two United Nations Economic Commission for Europe (UNECE) treaties – the 1992 Convention on the Transboundary Effects of Industrial Accidents (Industrial Accidents Convention) and the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) – together provide a legal framework for addressing the risk of transboundary water pollution arising from industrial accidents. The Industrial Accidents Convention helps human beings and the environment against industrial accidents, especially those with transboundary effects, by preventing them as far as possible, by reducing their frequency and severity and by mitigating their effects. Issues related to the prevention of accidental water pollution are addressed in close cooperation with the Water Convention.

[1] One of the worst environmental disasters with transboundary effects in the ECE region was the 1986 Sandoz accident in Basel (Switzerland), where a large volume of fire fighting water drained into the Rhine River and created a toxic plume of 70 kilometres flowing through Switzerland, France, Germany and the Netherlands. The devastating effects of industrial accidents on humans and the environment have also been demonstrated by the dam break of a tailings pond at a mining facility in Baia Mare (Romania) in 2000 which resulted in a spill of about 100.000 cubic metres of liquid and suspended waste, containing also 50 to 100 tonnes of cyanide, which contaminated the Sasar, Lapus, Somes, Tisza and Danube Rivers before reaching the Black Sea.

Parties to the Industrial Accidents Convention placed the obligation on themselves to establish and maintain adequate emergency preparedness to enable them to respond to industrial accidents by acceding to and ratifying the Convention (art. 8, annex VII). This requirement includes the preparation and implementation of internal contingency plans as well as of, where appropriate, joint external contingency plans to facilitate the adoption of adequate response measures. Parties to the Water Convention are obliged to take all appropriate measures to prevent, control and reduce pollution of waters causing or likely to cause transboundary impact (art. 2, paras. 1 and 2). To this end, Parties to the Water Convention have to develop, adopt, implement and, as far as possible, render compatible relevant legal, administrative, economic, financial and technical measures, in order to ensure, among others, that contingency planning is developed (art. 3, para 1 (j)).

In the context of preparing for accidental water pollution, the general objective of a contingency plan is to organize an effective response in case of emergency situations with impact to water quality, the water regime and water-related aquatic ecosystems and to facilitate cooperation, where relevant at transboundary level, throughout all phases of emergency situations, including prevention, preparedness, response and recovery.

There are different options for developing a transboundary contingency plan. A transboundary contingency plan can be:

a) Adopted jointly by countries sharing the same river basin; This could for example be within the existing settings of transboundary cooperation (e.g. river basin commissions, meetings of plenipotentiaries);
b) Developed individually by riparian countries and be mutually harmonized through a possible separate agreement; or
c) Subject of a stand-alone agreement specifically dedicated to contingency planning and adopted by riparian countries.

1.2 Methodological contingency planning through the use of the checklist

Contingency planning is complex and involves the coordination of many actors at the national level and in a transboundary context. To facilitate this process, tools that help countries coordinate this process are often considered very useful.

One tool commonly used in this process of verifying that standards (e.g. of industrial safety) are being adhered to, is the application of a checklist that allows competent authorities to check the applied safety standards and procedures against national legislation and international good practices. A checklist methodology, similar to the one presented here, was originally developed by the German Federal Environmental Agency following the failure of the dam at a tailings pond for a mining facility in Baia Mare, Romania in 2000, with the aim of improving the level of protection of waters from industrial accidents. Since then, a number of checklists on different topics[2] have been developed.

The present checklist on contingency planning for transboundary waters provides for a systematic and unified approach to investigate and assess the risk of transboundary

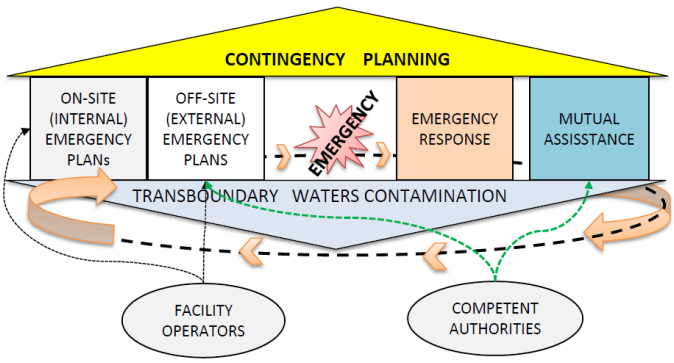
[2] The following checklists have been developed: (i) *Checklist for Surveying and Assessing Industrial Plant Handling Materials and Substances which are Hazardous to Water*; (ii) *Sectoral Checklist for the Preparation and Inspection of a Safety Report;* and the (iii) *Checklist on the Safety of Tailings Management Facilities.* Please see web references in chapter 5.

pollution. This risk starts from the hazardous activities, the preparedness for response inside the jurisdiction of the operator. It is continued with the possible response along the recipient, with special regards for mutual assistance governed by the competent authorities of the riparian countries. The checklist was formulated based on the main principles of the Industrial Accidents and Water Conventions as well as on other relevant international sources (see references), including the examples of other checklists or methodologies with the aim of addressing the needs of Parties to both the Water and Industrial Accidents Conventions.

1.3 Defining contingency planning and the scope of this document

According to the United Nations Office for Disaster Risk Reduction,[3] contingency planning means a management process that analyses specific potential events or emerging situations that might threaten society or the environment and establishes arrangements in advance to enable timely, effective and appropriate responses to such events and situations. In this regard, contingency planning is in the following understood as consisting of three pillars: (i) Emergency planning (on-site, off-site and in a transboundary context); (ii) Response planning; and (iii) Mutual assistance (see figure below). In each of the pillars competent authorities have crucial responsibilities relating to contingency planning. The checklist is thus designed for competent authorities to help them ensure effective and efficient contingency planning, in particular in a transboundary context. Other actors, such as member countries and operators, have also responsibilities in contingency planning: Member countries for instance have to put in place certain conditions, e.g. relevant legislation, for competent authorities to be able to act accordingly (see guiding principles for member states in chapter 3); As regards operators, their main task in contingency planning is to provide relevant information to competent authorities for them to prepare off-site (external) emergency plans. Due to their limited involvement in this process, a separate section with recommendations has not been created.

Figure 1: Pillars of contingency planning



The purpose of this document and the attached checklist is to allow an adequate response to (major) industrial accidents in transboundary waters, to prevent potential harm to people and the environment from such accident and to minimize and mitigate any effects.

The checklist applies to accidental pollution events where the sources of pollution are hazardous activities in which one or more hazardous substances are present or may be

[3] Available from: http://www.unisdr.org/we/inform/publications/7817.

present in quantities at or in excess of the threshold quantities listed in annex I to the Industrial Accidents Convention. The checklist refers also to possible important pollution sources which originate from activities in the scope of the Water Convention.

The checklist recognizes that different safety standards already exist worldwide and that different approaches to safety exist with regard to cargo, modes of transport and transport interfaces. However, a comparable level of emergency and response planning should be achieved. This checklist is intended to support existing requirements and to recommend enhancement of practices wherever appropriate.

The methodology described below has been prepared based on the obligations from the Industrial Accidents and Water Conventions as well as from materials developed under the Conventions, such as the document on Benchmarks for the implementation of the Convention (ECE/CP.TEIA/2010/6)[4] and the Guiding Principles for Chemical Accident Prevention, Preparedness and Response of the Organisation for Economic Co-operation and Development (OECD). Operational industry experience and experience from international joint river bodies were also taken into account.

1.4 Definitions

For the purpose of the present document:

"Industrial accident" means 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; or (ii) during transportation in so far as it is covered by paragraph 2 (d) of Article 2 of the Industrial Accidents Convention;

"Hazardous activity" means 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 hereto, and which is capable of causing transboundary effects;

"Effects" means 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;

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

"Transboundary impact" means any significant adverse effect on the environment resulting from a change in the conditions of transboundary waters caused by a human activity, the physical origin of which is situated wholly or in part within an area under the jurisdiction of a Party, within an area under the jurisdiction of another Party. Such effects on the environment include effects on human health and safety, flora, fauna, soil, air,

[4] Available in English, French and Russian from: http://www.unece.org/environmental-policy/treaties/industrial-accidents/areas-of-work/assistance-programme/envteiaaptools.html.

water, climate, landscape and historical monuments or other physical structures or the interaction among these factors; they also include effects on the cultural heritage or socio-economic conditions resulting from alterations to those factors;

"Extreme conditions" means the biggest accidental pollution load specified in the risk assessment of the onsite contingency plan related to the hazardous activity, connected with the most limited dilution and self-purification capacity of the recipient;

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

"Party" means, unless the text otherwise indicates, a Contracting Party to the Industrial Accidents Convention;

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

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

"Riparian Parties" means the Parties bordering the same transboundary waters;

"Joint body" means any bilateral or multilateral commission or other appropriate institutional arrangements for cooperation between the Riparian Parties;

"Operator" means any natural or legal person, including public authorities, in charge of an activity, e.g. supervising, planning to carry out or carrying out an activity.

2. Transboundary contingency planning

Effective transboundary contingency planning is based on adequate emergency preparedness and response planning as well as on the provision of mutual assistance. This chapter aims at providing a theoretical basis to the three areas.

2.1 Emergency Preparedness

Competent authorities and operators of industrial facilities need to be aware that even a minor leakage of hazardous substances into receiving waters can cause far-reaching and often transboundary damage. Therefore, emergency preparedness has to be in place, and suitable response equipment must be installed, for countries to be able to take effective steps to minimize on-site and off-site the effects of industrial accidents on waters, including those of a transboundary nature.

Operators have to prepare on-site emergency plans for hazardous facilities which need to be established prior to accepting the construction, operation or closure of a facility by authorities. Hence, they should be drawn up within the periods set by national legislation.

On-site (or internal) emergency plans

Operators of hazardous activities are obliged to be prepared to manage the possible accidental pollution sources inside of their jurisdiction, and they have to prove to the competent authority their mitigation capacity through their on-site emergency plans.

On-site emergency plans should consider all kind of natural hazards, including the flood risk hazard and sources of ignition. Relevant additional information from natural hazards should preferably be provided in an annex (e.g. inundation maps in case of flooding hazards).

On-site emergency plans are specific for each site and situation. They should be developed and continuously tested, reviewed and revised by operators and be communicated to the competent authority(ies). Plans for notification of key personnel and alarming of the public should be an integral part of the emergency plan and should be prepared for slow and rapid aggravating developments and for instantaneous failure conditions.

Operators should ensure appropriate capacity for response, including equipment and staff. They should assist, when requested, in responding to emergency situations at other neighbouring activities, and they should have an insurance against liability for damage resulting from an accident.[5]

[5] According to the UNECE Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters, operators shall be liable for the damage caused by an industrial accident. The Protocol is a joint Protocol from the UNECE Water and Industrial Accidents Conventions which was adopted and signed by 22 countries at the Ministerial Conference "Environment for Europe" in Kyiv, Ukraine, on 21 May 2003. The Protocol has not entered into force.

Off-site (or external) emergency plans

If the effects of the accidental pollution go beyond the fence of a hazardous facility, the competent authority activates its off-site emergency plan, which is based on the information and data provided by the operator in his on-site emergency plan and which had been collected before by the competent authority.

The off-site emergency plans are prepared and implemented by the competent authority/ies, based on the information and data provided by the operator in his on-site emergency plan and other relevant data collected by the competent authority/ies. The public should be given the opportunity to participate in the preparation and revision of the off-site emergency plans.

Also, hazardous facility operators are obliged to provide the local authorities with all necessary information of the potentially affected area to evaluate the impact on man and the environment.

Nowadays, the response technologies are well developed for accidental pollution of floating materials. Regarding soluble materials the possibility for intervention is much more limited, although heavy toxic materials cannot be excluded. Establishing proper alarm and notification systems is very important for warning the water users to accommodate themselves to the pollution event.

Transboundary off-site (or external) emergency plans

In the present document, off-site emergency planning in a transboundary context on international watersheds is applied in accordance with the Industrial Accidents and Water Conventions. The cooperation in this case can be extended to the area of mutual assistance and response activity, based on bi- or multilateral agreements.

Countries should ensure that in border areas the off-site emergency plans of two regions of neighbouring countries are compatible with each other and that they contain all relevant information, including contact details of the competent authority in the neighbouring country to allow for proper notification of hazardous activities. The public of neighbouring countries (affected parties) should be given the same rights as the public of the concerned country (party of origin) to participate in preparation and revision of off-site emergency plans.

For emergency preparedness it is essential to have early warning and alert systems in place. Early warning systems imply a double requirement:

(a) A suitable organisational structure allowing for the distribution of measuring devices, involving a network of stations linked to one another, etc. and
(b) Suitable technical equipment for event detection and assessment of warning and alert relevance.

Early warning systems should be set up by the operator at the hazardous facility and by the competent authorities for the whole river catchment area. These Early Warning Systems are often integrated into International Warning and Alarm Plans established by International River Basin Commissions.

At hazardous facilities, continuous online monitoring should be set up and adjusted to different alarm levels. These alarm levels have to be agreed with the competent authorities and should be in line with the respective threshold levels of International Alarm plans in place for rivers.

Compatible and efficient industrial accident notification systems at appropriate levels, such as the UNECE Industrial Accident Notification (IAN) System,[6] should be established and operational to inform neighbouring countries about an industrial accident and if possible to provide mutual assistance.

For scenario-calculations regarding a discharge, established flow- time modelling should be used.

2.2 Response Planning

Systems should be in place to immediately alert response personnel in the event of an accident involving hazardous substances, or an imminent threat of an accident, which would require their involvement.

In the event of an accident involving hazardous substances, stakeholders should take all reasonable measures to minimise exposure of people and the environment to such substances and to limit adverse effects to health, the environment and property.

In the event of an accident involving hazardous substances, management of the hazardous installation should immediately activate its on-site emergency plan.

Those responsible for emergency response should be involved in the planning process. Based on accident scenarios, response equipment should be in place to fight effectively against contaminations. Following the response, the emergency plan should be reviewed and revised, as appropriate, in light of the experience gained.

In the event of an accident involving hazardous substances which might threaten or have an off-site negative impact on health, the environment or property, or which cannot be handled by on-site response resources, procedures for promptly alert the local emergency response authorities should be in place at hazardous facilities and activated immediately.

Spokespeople designated to provide information to the public after an accident (including those from industry and competent authorities) should have the necessary knowledge, skills, authority and credibility to effectively communicate with the public.

[6] The Parties to the Industrial Accidents Convention, in accordance with Article 10, have to provide for the establishment and operation of compatible and efficient industrial accident notification systems at appropriate levels to inform neighbouring countries and if possible to provide mutual assistance in the event of an industrial accident. Furthermore, in accordance with article 17, Parties have to designate or establish one point of contact for the purpose of industrial accident notifications and one point of contact for the purpose of mutual assistance. These points of contact should preferably be the same.

2.3 International Mutual Assistance

In case an industrial accident occurs and a country cannot deal with its consequences alone, 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.

The Parties concerned shall cooperate to facilitate the prompt provision of assistance, where appropriate, to minimize the consequences and effects of the 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.

Each Party shall designate or establish one point of contact for the purpose of accident notifications pursuant to Article 10 of the Industrial Accidents Convention, and one point of contact for the purpose of mutual assistance pursuant to Article 12. These points of contact should preferably be the same.

The Riparian Parties shall elaborate and agree upon 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 Party requesting assistance, including, where necessary, the facilitation of border-crossing formalities;
(c) Arrangements for holding harmless, indemnifying and/or compensating the assisting Party and/or its personnel, as well as for transit through territories of third Parties, where necessary;
(d) Methods of reimbursing assistance services.

The overall direction, control, coordination and supervision of the assistance are the responsibility of the requesting Party unless otherwise agreed. The personnel involved in the assisting operation shall act in accordance with the relevant legislation of the requesting Party. The appropriate authorities of the requesting Party shall cooperate with the authority designated by the assisting Party, as being in charge of the immediate operational supervision of the personnel and the equipment provided by the assisting Party.

The requesting Party shall use its best efforts to afford to the assisting Party and persons acting on its behalf the privileges, immunities or facilities necessary for the expeditious performance of their assistance functions. The requesting Party shall not be required to apply this provision to its own nationals or permanent residents or to afford them the privileges and immunities referred to above.

A Party shall, at the request of the requesting or assisting Party, endeavour to facilitate the transit through its territory of duly notified personnel, equipment and property involved in the assistance to and from the requesting Party. The requesting Party shall facilitate the entry into, stay in and departure from its national territory of duly notified personnel and of equipment and property involved in the assistance.

The affected or requesting Party may at any time, after appropriate consultations and by notification, request the termination of assistance received or provided under this

Industrial Accidents Convention. Once such a request has been made, the Parties concerned shall consult one another with a view to making arrangements for the proper termination of the assistance.

The Parties shall review existing national, regional and international centres, and other bodies and programmes aimed at coordinating information and efforts in the prevention of, preparedness for and response to industrial accidents, with a view to determining what additional international institutions or centres may be needed to carry out the tasks.

3. Guiding principles for member countries to allow for effective contingency planning for transboundary waters

Competent authorities play a key role in transboundary contingency planning. As a prerequisite for effective transboundary contingency planning countries have to ensure that all necessary international agreements and national legislation is in place. Based on these provisions, competent authorities would be able to effectively implement a transboundary contingency plan.

General guiding principles

Countries should:

(a) Ensure that appropriate legislation is in place and follow good international practice on contingency planning for transboundary waters;
(b) Establish early warning, alarm and notification systems, and mutual data exchange between operators and authorities and between the riparian countries;
(c) Strive to establish an international river commission/bilateral committees for transboundary rivers based on international agreements;
(d) Strive to establish financial mechanisms for emergency response and remediation.

The major transboundary or international issues should be agreed in bi- or multilateral agreement among the riparian countries.

Neighbouring countries should:

(a) Exchange information, and consult each other, with the objective of preventing accidents capable of causing transboundary damage and reducing adverse effects;
(b) Consult one another with the aim of looking for possibilities to prepare joint or harmonized external contingency planning related to accidental pollution capable of causing transboundary damage;
(c) Establish procedures for the rapid and effective transmission of information related to an accident (or imminent threat of an accident) that might cause transboundary effects, and should set up systems for communication of pertinent information following an accident.

In the event of an accident involving accidental pollution capable of causing transboundary effects, competent authorities in the host country (party of origin) should ensure that competent authorities in potentially affected countries are notified without delay and are given appropriate information. The information should address, e.g.:

(a) Accident location and brief description of the circumstances;
(b) Immediate effects of the accident;
(c) Emergency measures planned and actions taken;
(d) Chemical identity, quantity and physical form of the hazardous substances that may affect the potentially affected countries;
(e) Data available for evaluating the probable impacts of the accident.

Representatives of potentially affected countries/communities should have an opportunity to participate in licensing or siting procedures for hazardous facilities that might have transboundary effects in their countries.

Identification, consultation and advice

For the purpose of undertaking preventive measures and setting up preparedness measures, the Party of origin shall take measures to identify hazardous activities within its jurisdiction and to ensure that affected Parties are notified of any such proposed or existing activity.

Parties concerned shall, at the initiative of any such Party, enter into consultations on the identification of those hazardous activities that are, reasonably, capable of causing transboundary effects.

The analysis and evaluation of the hazardous activities should be the output of the on-site emergency plans. In doing so, countries should rely on Annex V of the Industrial Accidents Convention.

Monitoring and Prevention

Parties shall establish programmes for monitoring the conditions of transboundary waters.

Parties shall take appropriate measures for the prevention of industrial accidents and other sources with transboundary effects, including measures to induce action by operators to reduce the risk of accidental pollution.

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 analysis and evaluation.

Industrial accident notification systems

In the event of accidental pollution, which can cause transboundary effects, the Party of origin shall ensure that affected Parties are, without delay, notified at appropriate levels through the accidental pollution notification systems, including, where appropriate, through the UNECE IAN System.[7]

The Parties concerned shall ensure that, in the event of an accidental pollution the off-site emergency plans are activated as soon as possible and to the extent appropriate to the circumstances.

Response

The Parties shall ensure that, in the event of an accidental pollution, adequate response measures are taken, as soon as possible and using the most efficient practices, to contain and minimize effects.

[7] The UNECE Industrial Accident Notifocation (IAN) System can be accessed here: https://www2.unece.org/ian/login.xhtml;jsessionid=A4353D507E9A8B7583868ACB29A70B46.

In the event of accidental pollution 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.

Awareness building should address high-level officials and the public to ensure that adequate funding is available for preparedness and response including in a transboundary context.

Mutual assistance

If any Party needs assistance in the event of an accidental pollution, 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.

Exchange of information and technology

The Parties shall, at the multilateral or bilateral level, exchange reasonably obtainable information.

The Parties shall, consistent with their laws facilitate the exchange of technology for the prevention of, preparedness for and response to the effects of accidental pollutions.

Enforcement

The contingency plan of transboundary waters shall enter into force after the Joint Body has adopted it, or after representatives of the countries concerned have agreed on it. If no joint body has yet been established, the transboundary contingency plan can be adopted in a separate agreement.

The riparian countries will take the necessary legal steps to enforce the adopted contingency plan.

4. Checklist for competent authorities to allow for effective contingency planning for transboundary waters

This chapter aims at providing competent authorities with the necessary information to apply and assess the results of the checklist (see attached) in practice, so as to be able to improve or further maintain a high level of contingency planning in the future.

4.1 Introduction to the checklist and its objectives

The checklist, annexed to this document, provides a systematic and unified approach for investigating and assessing the main principles for contingency planning, derived from the Water and Industrial Accidents Conventions as well as from other relevant international guidance, such as the UNECE Benchmarks for the implementation of the Industrial Accidents Convention and the OECD Guiding Principles for Chemical Accident Prevention, Preparedness and Response.

This checklist is intended to help competent authorities, as key actors in transboundary contingency planning, put in place effective and efficient contingency planning. As such, the checklist contains guiding principles for competent authorities regarding emergency and response planning and the provision of mutual assistance, aiming at the following:

(a) To provide methodological support to competent authorities for the preparation of off-site emergency plans, especially in a transboundary context;
(b) To identify gaps or deficiencies in transboundary contingency planning and to determine specific areas where further actions to strengthen contingency planning need to be taken, including legal and institutional conditions; and
(c) To serve as a tool for training stakeholders involved in transboundary contingency planning on international watersheds.

4.2 Application of the checklist

The checklist contains a number of guiding principles for competent authorities which are based on the above-mentioned reference documents (see also references in chapter 5). These documents should be carefully studied before the preparation, review and evaluation of the transboundary contingency plan.

Based on the guiding principles, points to be checked by competent authorities were derived and presented in the checklist. Competent authorities are expected to go through the checklist and to tick the boxes that apply (yes, no, partly). Upon ticking the relevant boxes, competent authorities should assess the results and take the appropriate actions to improve or further maintain a high level of a harmonised contingency planning on transboundary watersheds in the future.

Some questions of the checklist are related to on-site emergency plans. They are generally valid regardless of the type of hazardous facility. The checklist as such provides for the possibility to evaluate the requirements of data supply the operators should meet related to an external emergency plan on a transboundary watershed.

4.3 Assessment of the checklist

The assessment should be based on external joint or harmonised contingency plans on international watersheds. The competent joint bodies of the riparian countries can decide on the method of assessment, i.e. whether it will be done by the competent authority of the own or a neighbouring (potentially affected) country or by a subcommittee of evaluators consisting the experts from both countries.

The evaluators assessing the results should go through the questions answered with "Yes", "Partly" or "No" and subsequently take the necessary actions. It is recommended to take the following actions:

(a) In all cases where the answer is "No", the relevant issue should be addressed, unless the evaluator or the evaluation committee can prove that the question is not relevant.
(b) In all cases where the answer is "Partly", the evaluator or the evaluation committee can decide that the issue: (i) should be addressed (in order to allow for ticking a "Yes" next time the checklist will be applied); (ii) can be left as it is; or (iii) is not relevant.

5. References

1. UNECE Convention on the Transboundary Effects of Industrial Accidents, Helsinki, 17 March 1992, as amended on 19 March 2008 (www.unece.org/fileadmin/DAM/env/documents/2013/TEIA/1321013_ENG_Web_New_ENG.pdf).
2. UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 1992, as amended, along with decision VI/3 clarifying the accession procedure (www.unece.org/fileadmin/DAM/env/documents/2013/wat/Conventon_text_consolidated_Eng.pdf).
3. UNECE Benchmarks for the implementation of the Convention on the Transboundary Effects of Industrial Accidents, 2010 (www.unece.org/environmental-policy/treaties/industrial-accidents/areas-of-work/assistance-programme/envteiaaptools.html).
4. UNECE Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters, 2003, (www.unece.org/fileadmin/DAM/env/civil-liability/documents/protocol_e.pdf).
5. OECD Guiding Principles for Chemical Accident Prevention, Preparedness and Response (www.oecd.org/env/ehs/chemical-accidents/Guiding-principles-chemical-accident.pdf).
6. EU Host Nation Support Guidelines [SWD (2012) 169 final], June 2012 (http://ec.europa.eu/echo/files/about/COMM_PDF_SWD%2020120169_F_EN_.pdf).
7. EU Water Framework Directive establishing a framework for Community action in the field of water policy [2000/60/EC] adopted on 23 October 2000 (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02000L0060-20090625&from=EN).
8. Harmonised accidental water pollution response plan for the Körös/Crisuri and Berettyo/Barcau watersheds.
9. Checklist for Surveying and Assessing Industrial Plant Handling Materials and Substances which are Hazardous to Water (www.platkowski.de/dock/Check12_SafetyReport3.pdf).
10. Checklist on the Safety of Tailings Management Facilities (www.unece.org/environmental-policy/treaties/industrial-accidents/envteiaguidelines.html).
11. Sectoral Checklist for the Preparation and Inspection of a Safety Report, 2012, (www.unece.org/environmental-policy/treaties/industrial-accidents/envteiaguidelines.html).
12. Safety Guidelines and Good Industry Practices for Oil Terminals, 2014, (www.unece.org/environmental-policy/treaties/industrial-accidents/envteiaguidelines.html).
13. Safety Guidelines and Good Practices for Tailings Management Facilities, 2008 and 2014, (www.unece.org/environmental-policy/treaties/industrial-accidents/envteiaguidelines.html).
14. UNISDR International Strategy for Disaster Reduction, 2009 (www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf).

15. UNECE Industrial Accident Notification System (www.unece.org/fileadmin/DAM/env/teia/doc/guidelines/MANUALeng.pdf).

Annex: Checklist for contingency planning for transboundary waters (for competent authorities)

The guiding principles in this checklist are derived from the 1992 UNECE Convention on the Transboundary Effects of Industrial Accidents and the 1992 UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes.

NO	ISSUES THAT SHOULD BE INCLUDED AND DESCRIBED IN THE CONTINGENCY PLAN	POINTS TO BE CHECKED	YES	PARTLY	NO
1.	Countries should ensure that the definitions in the legislation are in line with those from the Water and Industrial Accidents Conventions.	Are the definitions in accordance with the definitions of the Industrial Accidents and Water Conventions (see chapter 1.4)?	☐	☐	☐
Description of the watershed					
2.	Geographic location	Is there a map about the area potentially affected by accidental pollution?	☐	☐	☐
		Is there an agreement about what the base delineation of the affected area is?	☐	☐	☐
3.	Main characteristic of the watershed	Is there a description of the main characteristic of the watershed?	☐	☐	☐
4.	Topography	Is there a description about topography (relief, flora, hydrography, urban areas, transportation)?	☐	☐	☐
5.	Geology and soil structure	Is there a description about geology and soil structure?	☐	☐	☐
6.	Meteorology and precipitation	Is there a description about meteorology and precipitation?	☐	☐	☐
7.	Groundwater and aquifers	Is there a description on groundwater status and aquifers on the potentially affected area?	☐	☐	☐
8.	Surface waters	Is there a description about surface water (rivers, drainage system, abandoned river beds, oxbows, lakes, reservoirs)?	☐	☐	☐
9.	Natural protected values and areas	Is there a description about natural protected values and areas on the affected area?	☐	☐	☐

NO	ISSUES THAT SHOULD BE INCLUDED AND DESCRIBED IN THE CONTINGENCY PLAN	POINTS TO BE CHECKED	YES	PARTLY	NO
Potential sources of accidental pollution					
10.	- List of potential accidental water pollution sources - Pollution propagation	Are facilities with significant impact listed?	☐	☐	☐
		Does this list include the following?			
		• Waste water treatment plants	☐	☐	☐
		• Industrial plants	☐	☐	☐
		• Agrochemical establishments	☐	☐	☐
		• Hydrocarbon storage facilities	☐	☐	☐
		• Animal farms	☐	☐	☐
		Are these potential sources presented on a map?	☐	☐	☐
		Is there an adequate model for simulating the pollution propagation in the CP?	☐	☐	☐
		Are the travel (spreading) times of the pollution counted in extreme hydrological conditions?	☐	☐	☐
11.	Surface and groundwater quality	Is there a description about classification related to the water quality?[8]	☐	☐	☐
12.	Surface water quality	Does it contain the characterization of the water quality categories?	☐	☐	☐
13.	Groundwater quality	Is there a description about groundwater quality on the potentially affected area?	☐	☐	☐
14.	Drinking water supply	Is there a description about drinking water supply?	☐	☐	☐
		Are surface waters used as drinking water?	☐	☐	☐
15.	Industrial water supply	Is there a description about industrial water supply?	☐	☐	☐
16.	Agriculture uses	Is there a comprehensive description on agricultural water uses?	☐	☐	☐

[8] Countries belonging to European Union (EU) can refer to the EU Water Framework Directive and can characterise the water bodies accordingly.

NO	ISSUES THAT SHOULD BE INCLUDED AND DESCRIBED IN THE CONTINGENCY PLAN	POINTS TO BE CHECKED	YES	PARTLY	NO
17.	Recreational sites	Is there a description of recreational water uses?	☐	☐	☐
18.	Fishing activities	Are fishing activities described?	☐	☐	☐
19.	Water intakes for water farms	Are the water intakes for water farms described?	☐	☐	☐
Water management organization/competent authorities					
20.	- Responsibilities and activities of competent authorities - Identification of the competent authorities	Is there a comprehensive introduction of the water management organisation?	☐	☐	☐
		Is there a list about the competent authorities in the CP?	☐	☐	☐
		Is there a list about the task of the authorities related to the response for accidental pollution?	☐	☐	☐
		Is there an authority responsible for preparation of the CP?	☐	☐	☐
		If yes: Is it named in the CP?	☐	☐	☐
		Is the authority responsible for the execution of the response for accidental water pollution named in the CP?	☐	☐	☐
Emergency preparedness					
21.	On-site emergency plans for hazardous facilities need to be established prior to accepting construction, operation or closure by authorities. Hence, they shall be drawn up within the periods set by local or international legislation.	Has the local legislation given a proper frame for the contribution of emergency planning to the permitting procedure?	☐	☐	☐
22.	Emergency plans should be established and tested by the hazardous facility operator (on-site emergency plans) and by authorities (off-site emergency plans). Eventually, upon request of the competent authorities, they should be tested	Does the local regulation contain the requirement that internal and external emergency plan should be tested together?	☐	☐	☐

NO	ISSUES THAT SHOULD BE INCLUDED AND DESCRIBED IN THE CONTINGENCY PLAN	POINTS TO BE CHECKED	YES	PARTLY	NO
	together, to verify inter-relationships and interdependencies.				
23.	Emergency plans should be reviewed and updated when needed / where relevant but at least at a frequency not exceeding 5 years. Reviewing and updating should be considered at least in the following situations: - After occurrence of accidents or emergency situations at the site or from lessons learned from accidents at other similar sites; - When the emergency service organization has changed; - When new hazards are identified that are associated with the hazardous facility; - When new technical knowledge or new technology is being developed that is considered relevant to the operation of the hazardous facility; - When design parameters (e.g. temperature, pressure) have approached/exceeded their limits as a result of changes, mismanagement, structural problems, equipment modification or as a result of natural events.	Is the emergency plan reviewed and updated when needed / where relevant but at least at a frequency not exceeding 5 years?	☐	☐	☐
24.	On-site emergency plans should consider all natural hazards, such as flooding hazards, and accidents in the immediate vicinity of the hazardous facility. Relevant additional information from natural hazards should preferably be provided in an annex (e.g. inundation maps in case of flooding hazards).	Does the off-site emergency plan consider natural hazards, such as			
		• Flooding hazards	☐	☐	☐
		• Storm risks	☐	☐	☐
		• Fires	☐	☐	☐
		• Accidents in the immediate vicinity of the hazardous facility?	☐	☐	☐
25.	On-site and off-site emergency plans should include and address generic parameters.	Does the on-and off-site emergency plans include the issues of:			
		• Scope and objective of the emergency plan	☐	☐	☐

NO	ISSUES THAT SHOULD BE INCLUDED AND DESCRIBED IN THE CONTINGENCY PLAN	POINTS TO BE CHECKED	YES	PARTLY	NO
		• Description and evaluation of emergency scenarios, hazards (including natural hazards), potentially affected areas etc.	☐	☐	☐
		• Names and/or positions and contact data of persons authorized to set emergency procedures in motion and of the person in charge of coordinating the internal mitigation actions	☐	☐	☐
		• Responsibilities of each member of the organization being part of Emergency Management (chain of responsibility and authority for actions to be taken)	☐	☐	☐
		• Conduct a needs identification and, based on the outcome, define the required equipment for effective interventions and the required human resources	☐	☐	☐
		• Involvement of ship crews (for communication and action)	☐	☐	☐
		• Procedures for emergency response / remediation for each of the determined emergency scenarios, including the necessary warning of and interaction with local emergency services	☐	☐	☐
		• Requirements for annual emergency drills and practices with external agencies involved (Fire Brigade, Police, Ambulance, Local Hospitals	☐	☐	☐
		• Interactions and interface with other intervention plans, either externally (e.g. from neighbouring plants, National Crisis Plan, Disaster Plan) or internally (e.g. the company's Crisis Plan, its Business Continuity Plan or the company's Recovery Plan)	☐	☐	☐

NO	ISSUES THAT SHOULD BE INCLUDED AND DESCRIBED IN THE CONTINGENCY PLAN	POINTS TO BE CHECKED	YES	PARTLY	NO
Related to off-site emergency plans					
26.	Off-site emergency plans are prepared and implemented by the competent authority, however hazardous facility operators are obliged to provide the local authorities with all necessary information of the potentially affected area to evaluate the impact on man and the environment.	Is there regulation on the off-site emergency plan in the riparian countries?	☐	☐	☐
		If yes, is there reference on its availability?	☐	☐	☐
		If no: the revision of the bi- or multilateral agreement is recommended?			
		Has the riparian country got the opportunity to comment on it?	☐	☐	☐
27.	It should be also ensured that in border areas the contingency plans of two regions of neighbouring countries are compatible with each other and include contact details to allow proper notification. The public of neighbouring countries (affected parties) should be given the same rights as the public of the concerned country (party of origin) to participate in preparation and revision of external emergency plans.	Has the compatibility of the CP been checked with that of the neighbouring or potentially affected country? Had the experts of the neighbouring or potential affected country enough possibility to check the content of the CP? Had the public of the neighbouring or potential affected country enough possibility to check the content of the CP?	☐	☐	☐
28.	Off-site emergency plans should detail all relevant information to ensure adequate emergency response.	Does the off-site emergency plan include the issues of:			
		• Names and/or positions and contact data of persons authorized to take charge of and coordinate actions	☐	☐	☐
		• Arrangements for coordinating the resources necessary to implement the off-site emergency plan	☐	☐	☐
		• Lists/maps of vulnerable areas and objects with their specifications	☐	☐	☐

NO	ISSUES THAT SHOULD BE INCLUDED AND DESCRIBED IN THE CONTINGENCY PLAN	POINTS TO BE CHECKED	YES	PARTLY	NO
		• List of the agencies and organizations that can assist with the management of the incident	☐	☐	☐
		• Arrangements for providing the public with specific information on the accident and the actions it should take	☐	☐	☐
		• Arrangements for notifying the emergency services of neighbouring countries in the event of a major accident with possible transboundary consequences, in accordance with internationally accepted and established warning- and alert-systems	☐	☐	☐
		• Competent authorities should ensure that operators draw up on-site emergency plans and put them into effect without delay when an accident occurs; and supply the authorities designated for that purpose with the necessary information to enable them to draw up off-site emergency plans	☐	☐	☐
29.	Each Party shall ensure for hazardous activities the preparation and implementation of off-site emergency plans covering measures to be taken within its territory to prevent and minimize transboundary effects. Parties concerned shall endeavour to make such plans compatible. Where appropriate, joint external emergency plans shall be drawn up in order to facilitate the adoption of adequate response measures.	Is the joint off-site emergency plan available and is it harmonized?	☐	☐	☐
		Are the obstacles of joint off-site emergency plan preparation described in the CP?	☐	☐	☐
		If there is no joint off-site emergency plan, is it planned in the future? If yes: When?	☐	☐	☐
30.	The Parties shall ensure that adequate information is given to the public possibly being affected by an accidental pollution arising out of a hazardous activity.	Are there available data for the public about accidental pollution occurred in the past?	☐	☐	☐
		Is the link given in the off-site emergency plan?	☐	☐	☐
		Is/Are the accidental pollution event(s) which occurred in previous years described in the CP?	☐	☐	☐

NO	ISSUES THAT SHOULD BE INCLUDED AND DESCRIBED IN THE CONTINGENCY PLAN	POINTS TO BE CHECKED	YES	PARTLY	NO
		If yes: Have the consequences been evaluated?	☐	☐	☐
		Has/Have the responsible operator(s) of the accidental pollution event(s) been found?	☐	☐	☐
		Were there any legal consequences of the event(s)?	☐	☐	☐
		Has the operator taken part in mitigation of the adverse consequences?	☐	☐	☐
		Is there a regulated procedure on information of the public in the procedure of permitting and operation control of the hazardous technology?	☐	☐	☐
		Is the involvement of the representatives of the public from riparian countries regulated?	☐	☐	☐
		If yes: Is direct reference given in the CP? If no: Has a revision of the bi- or multilateral agreement been commenced or conducted?	☐ ☐	☐ ☐	☐ ☐
31.	Off-site emergency plans should include the measures for: treatment, collection, clean-up, storage, removal and safe disposal of hazardous substances and contaminated material, and restoration.	Are the following measures discussed in the CP?			
		• Treatment	☐	☐	☐
		• Collection	☐	☐	☐
		• Clean-up	☐	☐	☐
		• Storage	☐	☐	☐
		• Removal	☐	☐	☐
		• Safe disposal of hazardous substances	☐	☐	☐
		• Restoration	☐	☐	☐
32.	Off-site emergency plans should introduce the appropriate spots and intervention sites for protection along the recipient.	Are the appropriate intervention/response sites for response activities and their facilities along the stream introduced in the off-site emergency plan?	☐	☐	☐
33.	Competent authorities are responsible for establishing, maintaining and testing external emergency plans and for ensuring their capacity to respond to emergencies in	Is there a clear distribution of the response activities among the operators and competent authorities in the CP?	☐	☐	☐

NO	ISSUES THAT SHOULD BE INCLUDED AND DESCRIBED IN THE CONTINGENCY PLAN	POINTS TO BE CHECKED	YES	PARTLY	NO
	accordance with the provisions of those plans.	Is there a statement in the CP that the authorities are responsible for establishing, maintaining and testing external emergency plans?	☐	☐	☐
34.	Off-site emergency plans should be reviewed regularly, or when circumstances so require, taking into account the experience gained in dealing with actual emergencies.	Is review of the joint or harmonised off-site emergency plan regulated in bi- or multilateral agreement(s)?	☐	☐	☐
		Is there information related to the periodicity or the occasions when the review is necessary in the CP?	☐	☐	☐
Warning and alert system					
35.	For emergency preparedness it is essential to have early warning and alert systems in place. Early Warning Systems imply a double requirement: a suitable organization: distribution of the measuring devices, involving a network of stations linked one another, etc.), and a suitable technical equipment for event detection and assessment of warning and alert relevance.	Is there a clear description of the early warning and alert systems?	☐	☐	☐
		Is the distribution of the measuring devices explained?	☐	☐	☐
		Is the cooperation of the measuring stations discussed?	☐	☐	☐
		Are the elements of technical equipment harmonized, with special focus on • Event detection; • Assessment of warning; • Alert relevance	☐	☐	☐
36.	Early warning systems should be set up by the operator at the hazardous facility and the state bodies for the whole river catchment. These Early Warning Systems are often integrated in International Warning- and Alarm Plans established by International River Commissions.	Does each operator at the important hazardous facilities have one warning station connected to the national warning systems?	☐	☐	☐
		Is there one International Warning and Alarm Plan in operation?	☐	☐	☐
		If yes: Is it introduced in the CP?	☐	☐	☐
37.	At hazardous facilities, a continuous „online monitoring“ should be set up and adjusted to different alarm levels.	Is there a continuous online monitoring operated by the operator of the important hazardous facility?	☐	☐	☐

NO	ISSUES THAT SHOULD BE INCLUDED AND DESCRIBED IN THE CONTINGENCY PLAN	POINTS TO BE CHECKED	YES	PARTLY	NO
	These alarm levels have to be agreed with the competent authorities and should be in line with the respective threshold levels of International Alarm plans (i.e. Rhine, Maas, Danube). For scenario-calculations regarding a discharge, established flow time-modelling should be used (i.e. Rhine-model, ALAMO)	Are the alarm levels agreed with the competent authorities of the riparian countries?	☐	☐	☐
		Is an International Alarm Plan available?	☐	☐	☐
		Are the respective threshold levels in accordance with that?	☐	☐	☐
		Is flow time-modelling available for scenario-calculations?	☐	☐	☐
		Is it introduced in the CP?	☐	☐	☐
	Mutual assistance				
38.	To the extent practicable, competent authorities should attempt to provide assistance to other countries that have requested help related to the preparedness for, or response to, accidental pollution.	Is there an agreement between competent authorities for mutual assistance?	☐	☐	☐
		Is this agreement consistent with the mutual assistance regulation of Industrial Accidents Convention?	☐	☐	☐
39.	Competent authorities should develop procedures to facilitate the transit through their territory of personnel and equipment to be used for mutual aid in the event of an accidental pollution.	Do the competent authorities develop procedure to facilitate the transit through their territory of personnel and equipment?	☐	☐	☐
40.	Competent authorities should facilitate the exchange of technology related to the prevention of, preparedness for, and response to transboundary accidental pollution according to OECD Guiding Principles for Chemical Accident Prevention, Preparedness and Response, Second edition.	Is the exchange of technology regulated between competent authorities in the transboundary cooperation?	☐	☐	☐
		Does it cover the field of :			
		1. Exchange of available technology	☐	☐	☐
		2. Exchange of information and experience	☐	☐	☐
		3. Provision of technical assistance	☐	☐	☐