

EVALUATION REPORT FOR THE FIELD AND TABLE- TOP EXERCISES (GIURGIULESTI, REPUBLIC OF MOLDOVA, 2 SEPTEMBER 2015)

**UNECE PROJECT ON HAZARD AND CRISIS MANAGEMENT IN THE
DANUBE DELTA, INVOLVING THE REPUBLIC OF MOLDOVA,
ROMANIA AND UKRAINE**

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ABBREVIATIONS

DBAM	Danube Basin Alarm Model
DHO	Danubian Hydrometeorological Observatory
IAN System	Industrial Accident Notification System
ICPDR	International Commission for the Protection of the Danube River
PIAC	Principle International Alert Centre
UNECE	United Nations Economic Commission for Europe

1. INTRODUCTION AND BACKGROUND

Risk reduction and the application of adequate safety standards are a priority when trying to prevent industrial accidents. Yet, no matter how stringent the safety standards are, accidents will occur, with some of them also having the potential to cause severe transboundary effects. Riparian countries must be prepared and work together to be able to deal effectively with the (transboundary) consequences of industrial accidents.

The Danube Delta, shared by the Republic of Moldova, Romania and Ukraine, requires particular efforts for its protection. Being Europe's second largest river delta, it has a unique ecosystem that hosts over 5,000 animal and plant species. Since 1991, the core of this nature reserve is a designated UNESCO World Natural Heritage Site. The outstanding environmental value and sensitivity of the region must be protected.

Several oil terminals are located in the Republic of Moldova, Romania and Ukraine, either directly upstream of or within the Danube Delta, such as in Giurgiulesti (Republic of Moldova), Galati (Romania) and Reni/Izmail (Ukraine). These terminals generate an increased hazard potential for the ecosystem and natural heritage of the Danube Delta, especially because oil spills are the most common risk of transboundary water pollution.

To protect the Danube Delta and to improve the cooperation on industrial accident prevention, preparedness and response, the Republic of Moldova, Romania and Ukraine are jointly implementing the United Nations Economic Commission for Europe (**UNECE**) **Project on Hazard and Crisis Management in the Danube Delta** (2010–2015). The project, launched at a kick-off meeting on 11th May 2011 in Kyiv (Ukraine), aims to improve the cooperation between the three countries in the Danube Delta region, through enhancing and, where possible, harmonizing the mechanisms and approaches for efficient and effective hazard and crisis management. Project management is assured by the UNECE Convention on the Transboundary Effects of Industrial Accidents (Industrial Accidents Convention), with financial resources from Finland, Germany, the Netherlands and Romania.

Within the framework of this project, the secretariat of the Industrial Accidents Convention offers a unique coordination platform to exchange views, experience, and lessons learnt between authorities involved in hazard and crisis management in the project countries. One of the main objectives of the project was to develop a Joint Contingency Plan, with the aim to improve joint response and capabilities of the three project countries to an oil spill in the Danube Delta. Such a Plan was developed and tested during **table-top** and **field exercises** within the project. The exercises encouraged the practice of working together within international teams and provide a learning opportunity for everyone involved in the crisis management operations. This report includes the results of the exercises as well as the conclusions and recommendations for improving crisis management and the joint management of emergency situations, as derived from the field and table-top exercises held on 2 September 2014 in Giurgiulesti (Republic of Moldova).

2. OBJECTIVES OF THE FIELD AND TABLE-TOP EXERCISES

The general objective of the field and table-top exercises was to test the emergency procedures for notification, preparedness and emergency response, including the request for mutual assistance, in the three countries, as contained also in the draft Joint Contingency Plan for the Danube Delta. In particular, the field exercise had the following specific objectives:

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- a) Test, provide feedback on and finalize the Joint Contingency Plan for the Danube Delta after the exercise to improve hazard and crisis management between the three countries;
 - b) Identify all human, material and technical resources in the counties to manage this risk;
 - c) Improve the cooperation during interventions carried out jointly by the intervention forces and logistical and communications support structures of the three countries in the Danube Delta Region;
 - d) Ensure the coordination of forces and means in case of an emergency situation in the Danube Delta Region and establish the decision making information flow;
 - e) Establish the notification, monitoring and intervention common procedures for the Danube Delta Region;
 - f) Establish the common procedures for crossing the state borders by rescue units to assist and to prevent expansion of contamination zones.

The field and table-top exercises were organized within the framework of a workshop to discuss and evaluate the implementation of the exercises, with the aim to identify areas for improvement for crisis management in the Danube Delta region and particularly the draft Joint Contingency Plan.

3. SCENARIOS FOR THE FIELD AND TABLE-TOP EXERCISES

In order to ensure that the exercises would accomplish its objectives, a scenario was developed in early 2015 and discussed during a table-top exercise in March 2015. Based on that discussion, the draft scenario was further developed and refined by the project countries during several planning meetings held as webconferences by the project management group (June, July and August 2015), involving the national project coordinators who consulted the scenario with the local authorities and the operator. The scenario was finalized following a field visit to the oil terminal in Giurgiulesti at which the field exercise took place.

A table-top exercise was held back-to-back with the field exercise to test the involved countries on their ability and capacity to react on an unexpected event. With the table-top exercise the communication between the (international) authorities was tested, as well their approaches to assess a complex situation with a potential severe impact on the human health and the environment. Their assessments should result in advices for measures to be taken by the decision makers of the responsible authorities.

The following scenario for the field exercise was agreed:

On the 2 September 2015 at 10:00 am an industrial accident took place at the Giurgiulesti oil terminal in Republic of Moldova at kilometre 134, where the Prut River flows into the Danube. As a consequence, following an explosion on-site, the accident resulted into a fire and an overflow of approx. 4.5 m³ of petroleum products spilled into Danube River. The failure led to an accidental pollution of the Danube, with the following direct consequences:

- a) Sudden alteration of water quality, made for use by users
- b) Serious imbalance of aquatic ecosystems being affected by both flora and fauna
- c) Possible victims if an explosion or fire is associated with the failure.

The following scenario for the table-top exercise was agreed:

At the site is a tank located that contains liquid ammonia that is stored under pressure and special conditions. The volume of the tank is 10.000 litres. Ammonia has specific properties regarding safety and toxicity. The storage tank is located near the rainwater drainage system of the site which is in an open connection with the Danube river. The storage tank is also located near a pump unit for highly flammable oil products. The distance between the storage tank and a small village with a population of around 300 citizens is about 800 meters.

A fire started in a pump unit for highly flammable oil products close to the storage of the ammonia. To make the correct decisions, the commanders need at the shortest-term information – based on a thorough assessment - about the risks of this event and the potential effects on the human health and the environment and the measures that needed to be taken.

4. PARTICIPANTS

Participants in the exercises were crisis management experts from the Republic of Moldova, Romania and Ukraine, including representatives from all authorities (national, regional and local) involved in the response of a large scale industrial accident with transboundary consequences. In addition, international experts, including independent evaluators from the Czech Republic, as well as the UNECE secretariat participated in the exercises.

Experts from the following institutions participated from the **Republic of Moldova**: (a) Civil Protection and Emergency Situations Service; (b) Cahul Emergency Situations Directorate; (c) State Hydrometeorological Service; (d) Giurgiulești Oil Terminal; (e) Principal State Inspectorate for Technical Supervising of Dangerous Industrial Objects; (f) State Ecological Inspectorate; and (g) Town Hall of Giurgiulești.

Experts from the following institutions participated from **Romania**: (a) General Inspectorate for Emergency Situations; (b) Galați County Inspectorate for Emergency Situations; (c) Ministry of Environment, Waters and Forests; (d) “Romanian Waters” National Administration; (e) Prut-Bârlad Water Basin Administration; (f) Galați Water Management System; (g) Galați Environmental Protection Agency; (h) Galați Commissariat of National Environmental Guard; (i) Galați Harbour Master’s Office; (j) Galați Border Police Territorial Service; (k) River Administration of the Lower Danube Galați; and (l) Maritime Danube Ports Administration National Company SA Galați.

Experts from the following institutions participated from **Ukraine**: (a) Ukrainian Hydrometeorological Institute; (b) State Ecological Inspection of Ukraine; (c) State Emergency Service of Ukraine; (d) Main Department of the State Emergency Service of Ukraine in Odessa Oblast; (e) State Enterprise “Ukrainian Sea Ports Authority” Reni Branch; (f) Izmail Sea Ports Authority; and (g) Danubian Hydrometeorological Observatory (DHO).

5. ORGANIZATION OF THE EVALUATION AND ASSESSMENT OF THE EXERCISES

The purpose of the evaluation is to identify, during the exercises, the issues arising from the implementation of the existing action plans, internal working procedures and the applicable regulations in the field of management of emergency situations generated by accidental pollution.

The evaluation was based on the overall objectives of the exercises, following the compliance with the draft *Joint Contingency Plan in the Danube Delta Region – Republic of Moldova, Romania and Ukraine*, applicable international legal framework, bilateral agreements, national legal framework and internal procedures.

The evaluation of the exercises was done by external evaluators from the Czech Republic, located at the Giurgiulești Oil Terminal, who had developed prior to the exercise an evaluation approach that provided the basis for this assessment. The assessment of the exercise has been performed by evaluating the following aspects: notification and flow of information (national and international), communication, monitoring and assessment, intervention, command and control and decision making, accident modelling, and cooperation among national capabilities and in a transboundary context.

6. RESULTS OF THE EXERCISES, CONCLUSIONS AND RECOMMENDATIONS

The key results of the evaluation of the field and table-top exercises are summarized below, according to the respective area of evaluation. Each area contains also conclusions and recommendations which were drawn based on the results from the evaluation of the exercises. The conclusions and recommendations are included in boxes.

6.1. NOTIFICATION AND FLOW OF INFORMATION

6.1.1. NATIONAL CONTEXT

The response to the notification of the accident at the national level was in some cases not sufficient. The information flow went slow and the preparedness to notification in cases of accidents was insufficient.

In some instances problems were identified regarding communications at the local level like the lack of access to the internet. (International) communication by mobile phones was hindered because of the use (or not using) of roaming services due to the fact that this service is very expensive.

In some cases cooperation between competent authorities at the national level was unsatisfactory.

Conclusion / Recommendation

1. Review the current system of communication (facilities) and identify opportunities for improvement to facilitate a more stable and robust communication between all responsible authorities within each country.

6.1.2. INTERNATIONAL CONTEXT

The Principle International Alert Centre (PIAC) system was activated with delay by a participant of the exercise, this due to the lack of a responsible person at the local level who is tasked with managing the PIAC system during an accident.

There were problems to inform neighbouring countries about the accident through the UNECE Industrial Accident Notification (IAN) System. The system did not accept the wind direction and thus did

not allow the submission of the report. After several attempts to submit the report, it finally could be sent only as a report of notification with delays.

Conclusions and Recommendations

1. Review the operational capability of the UNECE IAN System in order to have same functionality and promptness as the PIAC. Conduct improvements and organize specific exercises to test both systems.
2. Appoint a person in the region within the respective organizations who is responsible for the notification and the notification procedures at the regional level.
3. A permanent exchange of information between UNECE IAN System Dispatch and International Commission for the Protection of the Danube River (ICPDR), during the interventions, is needed.

6.2. MONITORING

The monitoring of the degree of pollution is not easy to be done. The flow speed of the Danube river is that fast that sampling and on the spot analysis is practically complicated. Sampling by experts on the spot and downstream is the only option for assessments. There is no mobile laboratory at the location. The closest one is was in Cahul at the Ecological State Inspectorate. This laboratory was not further involved.

The DHO started the monitoring of water quality at their observation site in Reni after having received a warning notification. This notification was sent via phone by their Director who is a member of the Ukrainian team. In reality DHO will start monitoring after receiving a notification either via PIAC or via the State Emergency Service of Ukraine.

Conclusions and Recommendations

1. Implement the propagation modelling of the hydrocarbons on Danube River within the involved countries by using the Danube Basin Alarm Model (DBAM). This software program is used for forecasting the propagation of the pollutant wave along the river and is especially useful to support decisions for taking necessary measures to protect the water users downstream of the oil stain and for determining the optimal moment for taking samples.
2. Test the model in a joint exercise between the involved countries.
3. Investigate possibilities and opportunities for mutual assistance regarding the sampling and analysis of chemical substances and/or polluted soil, water and air.
4. Start an active trilateral exchange of expertise and experiences regarding modelling, sampling and analysis in order to ensure a uniform approach, with comparable results as outcomes of the investigations.
5. Develop a test and training programme that allows the countries concerned to compare their analysis methods and the results of their analyses.

6.3. INTERVENTION

6.3.1. COMMAND AND CONTROL

The decision-making procedure was not clear and somehow artificial. The impression was that everything was decided in advance already. There were no discussions between the responsible response officers about the measures that needed to be taken and the possible consequences of decisions, neither in a cross-border context.

There was no sound communication between the three countries about the incident, the measures that were taken or needed to be taken. This resulted in a lack of coordination of response actions between the involved countries, particularly between the land and water rescue teams. At night coordination and communication would have been even more complicated.

A sound communication between the commanders and the chief who was responsible for the response to the industrial accident was lacking. This can hinder a coordinated response and important decision-making.

The field exercise was somehow more a 'show' than an exercise and training. This includes risks of a too early reaction and that people act according to a pre-prepared scenario rather than according to a situation where unprepared decision-making is required. It has the danger of a too artificial exercise and losing the reality. A balance between preparation and realism should be strived for and included in future scenarios and exercises.

In some situations delays in the response from the ministerial level during the exercise were observed. Also the ministry at the national level was not informed. In that case the notification was only sent to the State Emergency Service of the Republic of Moldova. Delays or the lack of informing the appropriate levels can hinder the sound decision-making and an adequate response.

At the location of the oil terminal there was no decision considered or taken by the decision-makers to block the transport on the Danube to avoid dispersion of the pollution. Communication between the competent authorities in this regard was lacking or poor.

Conclusions and Recommendations

1. Review the decision-making structure at the national, regional and local levels as well the roles and responsibilities of the authorities and the functions that play (key) roles in the structure. Revise, if needed, based on the outcome of the review, the command and control structure and the contingency plans at all levels accordingly. Update also the Joint Contingency Plan regarding the reviewed command and control structure.
2. Train the command and control and the decision-making structure as well the key players/functions in that structure through drills, table-top and field exercises.
3. Train through exercises the quality of the expert advices and the quality of the decisions made by the decision makers.

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4. Train through exercises the process of decision making with particular attention for consolidated decisions that include a balanced attention for the human health, the environment and other relevant aspects like the economy, etc.

6.3.2. DEPLOYMENT

The response teams reported that there was a shortage of response forces and trained or certified staff who was permanently available and could promptly operate the emergency equipment in case of an accident. As an example, there is a special boat available in the Republic of Moldova but no trained staff to operate the boat from the responsible organization. External staff operated the boat.

It is needed to clarify procedures and rules of governance in the emergency response in the Joint Contingency Plan. For example it needs to be clarified how to deal with multilingual crews when using the rescue vessels (crews speak the language of the country of the vessel). Manoeuvring with such a large number of vessels in restricted waters at places where booms are installed is technically an extremely complex process. Manoeuvring of vessels and to navigate at night and in the absence of radio is even more complex.

Conclusions and Recommendations

1. Review and analyse the capacity, equipment and expertise that is needed to operate adequately in various types and scenarios of accidents and emergencies. Prepare an action plan (including the needed human and financial resources) and discuss the action plan with the senior management and the government.
2. The response times of the different services during an accident should be realistically tested, trained and monitored to obtain a better understanding of a realistic response during a real incident.

6.3.3. COMMUNICATIONS

There was no cross-border communication between the three countries about taking samples, assessments, the results of the monitoring and analysis, the forecasting on potential risks etc. This hinders an adequate and coordinated operation by the authorities of the neighbouring countries in case this might be urgently needed.

It was identified that the communication between the Civil Protection and Emergencies Department, the State Hydrometeorological Service and the State Ecological Inspectorate in the Republic of Moldova was insufficient. This hinders an adequate operation of the respective organizations to execute the tasks for where they are responsible.

The authorities that are responsible for the railway were not informed about the incident. A train could pass the site during the incident and response activities and hinder these activities or it could have a negative impact from the accident. Also a risk of domino effects exists. Such situations need to be avoided in reality.

Communication records and logging of communication and response issues about the accident were only partially available but mainly lacking. The absence of this can complicate the evaluation and backtracking of decisions and actions taken.

Loudspeakers were lacking to inform or alarm the surrounding and passing ships.

The sound of the alarm sirens on-site was not heard on-shore. The alarm worked on the docks, but the sound was drowned in the sound of the emergency diesel generators.

Conclusions and Recommendations

1. There is a need to update the agreement between the Civil Protection and Emergencies Department, the State Hydrometeorological Service and the State Ecological Inspectorate in the Republic of Moldova, in particular the section on assistance, communication and alarm early warning.
2. Test and train the communication processes between all levels and functions that are involved in the preparedness and response due to their roles and responsibilities and the structure.
3. Test and train the communications between the three countries regarding the response in case of an accident with transboundary consequences. Pay special attention to the differences in languages. Consider a language training to overcome communication problems.
4. A system (electronic) for logging communication, actions and decisions during an accident should be developed. Such a system is essential in cases of evaluation, backtracking of events and decisions, and the identification of opportunities for improvement.
5. In case of accidents on and along the Danube River the relevant responsible authorities should use the Harbour communication system (Marine channel 16) to announce the neighbouring authorities (i.e. from Romania and Ukraine) to accelerate a fast response. Special attention should be paid to the differences in language.
6. The alerting of personnel at oil terminals should be done by a sufficient number of (electric) air sirens which can be heard at the boundary of the territory, with a sound power of at least 20 decibels. Also other alternative emergency signals should be considered.

6.3.4. IN FIELD OPERATIONS

It took (too) much time to save a victim that was pushed into the river due to the accident. Equipment like ropes and other lifesaving gear was lacking.

If the fire had taken place on the boat, the firefighting equipment would have been too close to the oil terminal to extinguish the fire and would therefore not have been efficiently operational.

Two oil booms were fixed on the bank at a too high level. The (low) water level in the river was one of the causes for that. This resulted in the 'leaking' of the pollutant through the open space (2 – 4 meters of unprotected water) between the shore and the oil boom. This response activity became thus ineffective. Another oil boom was rotating in the water, making it ineffective. The pollutant was able to escape from the 'protected' polluted area and to flow downstream.

The oil skimmer was not able to work adequately because waves put the skimmer back to the riverbank. Special anchors to fix the skimmer were lacking.

Because of the not correctly installed booms and barriers the oil and sorbent could flow away. The sorbent that was used for inactivating the oil was not collected.

It was identified that in case of an explosion at such a terminal, the equipment to deliver response at the site and even the transport means on the river can be destroyed due to the potential magnitude of the event, the thermal radiation by overheating and / or the shock wave.

Conclusions and Recommendations

1. At the locations of the oil terminals attention should be given to a system allowing that the oil skimmer and the oil booms can be fixed and thus will not be affected by waves, wind and current. For example, ground earthed anchors could be mounted or willow trees be used on the Romanian Bank of the Prut River. This to ensure that materials like oil booms and oil skimmers can operate effectively in case of oil spills, etc.. Materials and special anchors should be made available for that and kept in storage at the terminals.
2. There is a need to have more hoses for the skimmer so that the barrels for oil spill could be positioned in a more suitable place.
3. It is recommended to review the effectiveness of response actions through the available equipment that is positioned on the terminal in case an accident (like a fire) happens on a boat. Based on the outcome of the review measures to improve the situation could be considered.

6.3.5. LOGISTICS

There is currently only one skimmer available at the Giurgiulesti terminal. That would not be enough in case of a major industrial accident.

The operation of the equipment and gear of the oil skimmer unit was not efficient and effective and needs to be improved. It is necessary to tow the watercraft skimmer. Also special anchors (or willow trees as in the case of Romanian shore for Prut River) that immobilize the skimmer need to be made available.

It was observed that the amount of protective devices and equipment for the personnel on the oil terminal platform is insufficient. Furthermore the staff working at the water and the riverbank should wear lifejackets, protective gloves and special oil resistant boots, when booms are installed.

In reality it would take longer than during the exercise to send a ship from the Reni port to the Giurgiulesti oil terminal to support the response. It can be questioned if immediate response support from Reni is efficient or that such a support is helpful (only) for incidents that last long.

Some questions regarding the collection and disposal of the pollution could not be answered by some countries and remained unclear, such as the following: Who is responsible for collecting the (polluted)

and contaminated material and its disposal? Who will carry the costs for the removal and disposal of the polluted material?¹

Conclusions and Recommendations

1. Protective devices, e.g. gas masks, life jackets, gloves, boots, etc. for staff should be purchased and distributed to places with high probabilities of the incident, taking into account all the range of chemicals stored or transported by rails in the terminal area.
2. To ensure an effective work of collecting oil, it is desirable to identify and equip the stationary items for the deployment of the technical means both on the left and the right bank of the Danube above the settlements. These points should have the following: (a) A deep and accessible shore (and possible to be approached by boats); (b) A reliable pile for securing the boom at any water level; (c) A possibility to ensure the access of vehicles and others means of transport. In addition, staff should be trained on this. Possibly, one can also pre-calculate the time lag, dependent on the flow rate and the length of the river.
3. It is recommended to position a small boat that is easy to manoeuvre near the oil terminal to be used for different purposes, e.g. it could be used by response teams or to support the sampling of water and sediments at the Moldovan sector of the Danube River. It will enable the response teams to act faster, more efficient and effective.
4. It is recommended that countries establish a payable contract agreement with a specialized agent that will collect the waste material from accidental pollution interventions and who will assist in clean-up and remediation operations of the pollution. According to the 'polluter pays' principle, the polluter will pay the bill for the clean-up activities, provided after the pollution event by the clean-up agent, including other fines according to the law.

6.4. ACCIDENT ASSESSING AND MODELLING

Sampling of the contaminated surface water at the location of the oil terminal was not executed according to the general strategies. The analysis might therefore not represent the real contamination and is not representative for the actual contaminated and polluted situation.

Conducted assessments, used models, calculations and assessment methodologies to assess the (potential) risks for human health and the environment varied strongly between the three countries. This led to significant differences in advices and recommendations for important decisions and actions (e.g. with regard to whether the population should be warned or evacuated).

¹ In one country the waste material from accidental pollution interventions is collected by a special designed agent for clean-up and remediation of the pollution, under a payable contract agreement. According to the "polluter pays" principle, the polluter will pay the bill for the clean-up activities, provided after the pollution event by the clean-up agent, including other fines according to the law.

Conclusion / Recommendation

1. It is recommended that the experts on modelling and assessment of the three countries gather and discuss with each other their models and approaches. The focus of the discussion should be on the used models, the consequences of the different outcomes of calculations and possible harmonization, (one of the solutions is using DBAM which is officially recommended by ICPDR). The discussion could be placed as well in a broader international context.

6.5. DECISION MAKING

The decision-making procedures in some of the countries were not clear. It felt that everything was decided in advance already. There were no discussions between the responsible response officers about the measures that needed to be taken and the possible consequences of decisions, neither in a cross-border context.

In the case of Romania the decisions were taken at each level (national, regional/local) in accordance with the information received and the established informational flow procedure. Decisions were taken by the Advanced Mobile Command Post that has been set up on one of the Romanian ships.

Conclusion / Recommendation

1. Review and clarify the decision-making procedures regarding the response to industrial accidents at all levels (national, regional and local and cross-border) and if necessary revise the current procedures for that, accordingly to the international requirements (UNECE Industrial Accidents Convention and the European Union Seveso III Directive). Train and exercise these procedures in a setting that is close to the reality.

6.6. COOPERATION AMONG NATIONAL CAPABILITIES

The national control laboratory network responded to the accident notification. The Chisinau laboratory however is 250 km away from the simulated exercise and could not be present. The closest laboratory to the accident site was the laboratory from the Ecological Inspection located in Cahul. The DHO did the water sampling at Ukrainian territory (Reni).

Conclusion / Recommendation

1. It should be considered to design scenarios for several types of incidents at the national level and to test the scenarios through exercises (table-top and or field exercises). The key players who need to cooperate at the national, regional and local level should be part of these exercises. Evaluations will facilitate the identification of opportunities for development. Skills, cooperation, equipment etc. should be part of the evaluation.

6.7. COOPERATION IN THE TRANSBOUNDARY CONTEXT

There was no communication and coordination between the three countries about taking samples, assessments, results of monitoring and analysis and forecasting on potential risks etc. This hinders an adequate operation by the authorities of the neighbouring countries in case this might be urgently needed.

In case staff from the response forces from Ukraine would have needed to go on-site, this would have been problematic under the current official arrangements.

Conclusions and Recommendations

1. Include into the Joint Contingency Plan the structure and means of communication to be used between the three countries to improve the trilateral communication and cooperation and to allow for a quick joint response.
2. Consider the possibility to use the Romanian Mobile Command Post as a command hub for communication that has been set up on Galați Border Police boat in case of the response to major accidents on the Danube River with (potential) transboundary impact.
3. To align the communications on the Danube River between the Romanian, Moldavian and Ukrainian ships through the VHF maritime radio frequencies. The Galați Harbour Master's Office could consider facilitating this by the support of experience and expertise.

6.8. GENERAL

In this chapter some conclusions and recommendations are listed that have a more general character and that do not directly fit in the subject as described in the previous chapters and paragraphs.

Conclusions and Recommendations

1. Create awareness at the top management of the industrial operators as well within the authorities and at the political level about the importance of preparedness and response to accidents and emergencies and the essential resources (human, financial, skills etc.), which are needed for that.
2. It is recommended to prepare an inventory of the available and needed (human and financial) resources, equipment and skills that are essential to deliver an adequate response to a variety of accidents based on different scenarios. Compare the needed and available resources and develop a plan how to achieve (in timing and financially, as well training etc.) the desired situation. Such a plan should be discussed and approved at the level of the government or at least the responsible ministries.
3. Develop or revise an existing (national) contingency plan and integrate in the plan different scenarios of accidents and emergencies, including topics as communication, decision-making, mutual assistance and prepare a schedule for conducting the plan.
4. Develop accident scenarios and describe and include the roles of the different organizations and their key stakeholders. Add these scenarios to the Joint Contingency Plan. Include in the scenarios also extreme weather conditions.
5. Organize frequently common exercises - at least once a year based on various scenarios and include in the exercises the elements of communication, assessments, decision-making etc.

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6. Develop a set of rules and an action plan to ensure the implementation of the joint Declaration as signed by the neighbouring countries.
 7. Include in the joint Declaration that the communication systems at the port level should be used to allow for a quick response in a transboundary context.
 8. Include in the National and the Joint Contingency Plan that nearest hospitals and medical services should be notified and alerted in case of a severe industrial accident (24/7).
 9. Develop a training program for the response services and their key experts and professionals to various types of accidents. Execute the training program systematically and evaluate and maintain it. It is recommended to develop the program as well in the perspective of the trilateral cooperation. The program can serve as well as a basis for future projects addressing joint challenges between the three countries through the Assistance Programme of the Convention.
 10. Develop guidance on who is responsible for the collection and disposal of the waste in case of an accident as well in the aftermath of it and describe who is responsible for the costs.

7. THE WAY FORWARD AND NEXT STEPS

As a result of the evaluation of the table-top and field exercises a variety of lessons have been identified. It is recommended to the three countries involved to review all recommendations in detail and to transfer them into actions to further improve their preparedness and response to industrial accidents, especially to those with possible transboundary effects. It is recommended to establish a trilateral working group which could be tasked with conducting this review and drafting a realistic action plan with a description of the respective actions as well as the way and time schedule for how to accomplish them. The required resources (financial and human) need to be an integrated part of the plan. It is also recommended that the action plan will be approved at the highest (management) level of the specific country in order to ensure a sustainable implementation of the plan.