

# Summary and conclusions of the Subregional workshop on mine tailings safety and the prevention of accidental water pollution in Central Asia – 25-26 May 2023, Dushanbe, Tajikistan and online –

## 1. Background and objectives

The Subregional workshop was held as part of the UNECE Project on strengthening mine tailings safety in Central Asia and the Project on strengthening tailings safety and the prevention of accidental water pollution in Uzbekistan and beyond in Central Asia. Both projects are implemented by UNECE under the workplan of the Convention on the Transboundary Effects of Industrial Accidents (Industrial Accidents Convention), with the financial support of the Swiss Federal Office for the Environment (FOEN).

The subregional workshop was organized and serviced by the UNECE secretariat, in cooperation with the German Agency for International Cooperation (GIZ) and the Service for State Supervision over the Safe Conduct of Work in Industry and Mining Supervision under the Government of Tajikistan, and with financial support from FOEN, GIZ Green Central Asia, the Organization for Security and Co-operation in Europe (OSCE) Programme Office in Astana and the United Nations Regular Programme of Technical Cooperation.

The objectives of the subregional workshop were the following:

- Strengthen transboundary cooperation and dialogue among Central Asian countries in the area of tailings safety and prevention of accidental water pollution.
- Foster understanding of disaster risks, vulnerabilities and exposure, including ways to mitigate these, both at the technical and political levels.
- Present the achievements of Central Asian countries in strengthening industrial safety and preventing accidental pollution from tailings facilities at the national and regional levels.
- Share information on UNECE guidelines, tools and projects, as well as those of partner organizations, and experiences in their application.
- Provide a platform for exchanging experiences, good practices and lessons learned, bringing together the relevant stakeholders and partners from industrial safety and water communities.
- Strengthen implementation of and accession to the Industrial Accidents and Water Conventions and promote benefits of implementation of other UNECE Multilateral Environmental Agreements (MEAs).
- Review recommendations arising from UNECE regional projects, discuss challenges and needs, and identify ways to address them and strengthen national and transboundary governance of risks.

## 2. Attendees

The subregional workshop was attended by 74 participants in total, both in-person (44) and online (30).<sup>1</sup> It brought together high-level representatives from Central Asia, notably the Vice-Ministers of Emergency Situation of Kazakhstan and Uzbekistan, the Vice-Minister of Ecology and Natural Resources of Kazakhstan, the Deputy Vice Minister of Energy and Water Resources of Tajikistan, the Director of the Centre of Emergency Situations and Disaster Risk Reduction (CESDRR), the Deputy Director of the International Water Assessment Centre (IWAC), the Permanent Representative of the Federal Republic of Germany in the Republic of Tajikistan and the UN Resident Coordinator a.i. in Tajikistan. Besides, the workshop was attended by expert-level representatives from industrial safety and water authorities from Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan; representatives of regional and international organizations such as GIZ, OSCE, the United Nations Office for

<sup>1</sup> The list of participants is available on the meeting website at: <https://unece.org/info/Environmental-Policy/Industrial-Accidents/events/377827>

Disaster Risk Reduction (UNDRR), the United Nations Development Programme (UNDP), World Bank, the International Commission for the Protection of Danube River (ICPDR), the Water Resources Commission of Ghana, International Fund for Saving the Aral Sea (IFAS) and International Commission on Large Dams (ICOLD), several operators of tailings management facilities in Central Asian countries, as well as representatives from NGOs and academia. Members of the UNECE Joint Expert Group on Water and Industrial Accidents (e.g. from Czechia) and other UNECE experts (e.g. from Ukraine) also participated in the workshop.



### 3. Programme

The workshop was designed as a 1.5-day in-person and online event and was divided into eight sessions as below.

- A high-level panel discussion on critical risks and challenges in the safe management of tailings facilities and the prevention of accidental water pollution in Central Asia.
- In the second session, the speakers shared the approaches to improve the understanding and governance of mine tailings in Central Asia and beyond. It allowed countries to present their respective achievements over the last years in strengthening industrial safety and preventing accidental water pollution from the tailings facilities at the national and regional levels.
- The third session focused on the prevention of and response to accidental water pollution on the Danube, Dniester and Syr Darya River Basins and included also a round-table discussion on strengthening joint contingency planning in the Syr Darya River Basin.
- The fourth session was comprised of group work which allowed for a transparent dialogue and exchange among different stakeholders on the most pressing challenges and needs related to tailings safety and the prevention of accidental water pollution in Central Asia, including on measures to be taken in this respect.
- The fifth session discussed the accession to and implementation of the Industrial Accidents Convention and other UNECE MEAs, with Kazakhstan sharing its long-term experience in implementing the Industrial Accidents Convention as the only Party in Central Asia to date and Tajikistan explaining its recent steps taken towards preparing for accession.
- The sixth session provided a forum for the participants to share examples of integrating risks and applying a multi-hazard/risk approach in Central Asia and beyond.
- In the seventh session, the participants shared lessons learnt from past tailings accidents in the UNECE region.
- The last concluding session was devoted to presenting guidelines, approaches and tools to improve tailings safety and the prevention or mitigation of accidental water pollution.

Below, key proceeding and conclusions of the subregional workshop are available. Key recommendations for follow-up activities on mine tailings safety and prevention of accidental water pollution in Central Asia have been extracted and are accessible in a separate document on the website of the workshop.

## 4. Key proceedings and conclusions of the subregional workshop

DAY 1 – Thursday, 25 May 2023

### OPENING AND SETTING THE SCENE (9:00 – 10:00)

The participants welcomed the UNECE [Project on strengthening mine tailings safety in Central Asia](#) and the [Project on strengthening tailings safety and the prevention of accidental water pollution in Uzbekistan and beyond in Central Asia](#). The Central Asian countries thanked Switzerland for the financial support provided in recent years to strengthen mine tailings safety and the prevention of accidental water pollution in Central Asia. They highlighted that the subregional workshop was a milestone in enhancing transboundary cooperation, good practices and knowledge between all Central Asian countries. They further stressed the need to work together to achieve sustainable development. It was noted that ensuring a high level of industrial safety, the prevention of and preparedness for cascading disasters and preventing accidental pollution was particularly relevant as countries of Central Asia were rich in mineral and metal resources and experience increasingly frequent and extreme weather events. **Hence, participants agreed that it is essential to develop a regional approach to further strengthen industrial safety and transboundary cooperation and reduce the risks of all types of disasters in Central Asia.**

[The UNEA resolution 5/12 on environmental aspects of minerals and metals management](#) was underlined as an important document for addressing issues and challenges related to tailings. The Central Asian countries were hence encouraged to implement it and engage in subregional consultations for all regions.

The participants agreed that the subregional workshop demonstrated the desire of all Central Asian countries to jointly find solutions to the most pressing issues, notably to improve tailings safety and work towards the prevention of accidental water pollution.

The participants took note of the work carried out and the significant progress that the Central Asian countries have achieved in strengthening mine tailings safety and preventing accidental pollution with UNECE's support, notably the following:

- Increased awareness of tailings hazards and associated disaster risks through inventories and mapping of 237 TMFs in Central Asia, including those with transboundary effects (25%). The inventories and mapping in [Kazakhstan](#), [Tajikistan](#) and [Uzbekistan](#) were prepared in the framework of Swiss-funded tailings projects; Kyrgyzstan - within the framework of the [project to improve the safety of tailings management facilities in Kyrgyzstan, funded by](#) the German Environment Agency; at the river basin level, in the framework of [the EU-funded project](#).
- Better coordination and governance among national authorities and other relevant stakeholders through the establishment of Interinstitutional working groups on tailings safety and prevention of accidental water pollution (IIWG) and its functioning.
- Increased understanding of TMFs safety; the Convention's tools and instruments, including [the 2030 UNECE road map for action on tailings safety](#), and through the capacity-building activities.
- Enhanced transboundary cooperation and exchange of information through the activities in the Syr Darya River Basin.
- Strengthened outreach and partnership with other international organizations, industry, NGOs and academia.

## SESSION 1 – HIGH-LEVEL PANEL DISCUSSION ON KEY RISKS AND CHALLENGES IN THE SAFE MANAGEMENT OF TAILINGS FACILITIES AND THE PREVENTION OF ACCIDENTAL WATER POLLUTION IN CENTRAL ASIA (10:00 – 11:05)

**A panel discussion on key risks and challenges in preventing water pollution from tailings facilities among high-level representatives from Central Asian countries** – notably from authorities dealing with the prevention, preparedness and response to industrial accidents and accidental water pollution – **showed the subject's relevance to them and their desire to develop a common regional approach in this respect.**

The high-level representatives from Kazakhstan highlighted that the risks of water and environmental pollution resulting from potential accidents at industrial facilities, particularly tailings dams, were of serious concern. In addition, the negative impact of climate change and the exposure of Kazakhstan's territory to extreme weather events and natural disasters were increasingly noticeable. **They stressed the important role of the UNECE Industrial Accidents Convention as an effective instrument in the system of international relations and the vital role of the 2030 UNECE [Road map on tailings safety](#)** and the commitment of Kazakhstan to implement its five objectives. Additionally, the high-level representatives of Kazakhstan:

- Highlighted the importance of continuing cooperation with all Kazakhstan's national stakeholders in identifying potential risks from tailings facilities and developing measures to mitigate them.
- Stressed the need to further align national legislation, bearing in mind international good practices in the field of tailings safety and strengthen transboundary cooperation, including through the development of joint contingency plans to prevent pollution of transboundary water bodies, taking into account the negative impact of climate change and disaster risks.

The high-level representative from Uzbekistan pointed out **the importance and need to further strengthen transboundary cooperation and develop joint contingency plans, notably in river basins, in Central Asia. This topic was highlighted as increasingly relevant to regional concerns with respect to national safety and security.** The importance of joint notification with the other Central Asian countries in case of industrial pollution, including in the Syr Darya River Basin, to take timely actions, was raised.

The high-level representatives of Tajikistan:

- Recognized the need to strengthen environmental monitoring to determine the quality of water to prevent potential risks and accidents; monitor regularly TMFs; annually reconsider contingency plans; improve the capacities of human resources; raise awareness of TMFs risks; understand the experience of other countries in relation to tailings safety and prevention of accidental water pollution; have a platform for the exchange of lessons learned and how to manage the risks from tailings.
- Highlighted the importance of defining tailings risks and mapping TMFs, including with transboundary impact.
- Mentioned the importance of waste prevention and their secondary exploitation.
- Stressed exposure to natural disasters, such as floods and the associated risks, which can lead to Natechs.
- Expressed Tajik's readiness to share its experience in implementing the Sendai Framework on Disaster Risk Reduction with other countries.

**It was also suggested to launch a pilot project on assessing climate change's impact on tailings safety in Central Asia.** Besides, the vital role of the IIWGs and the need to continue this work, including the establishment of such groups in all Central Asian countries, was stressed.

The participants highly appreciated the UNECE's support of Central Asian countries in their efforts to improve tailings safety and thanked Switzerland for the provision of funding to continue this work.

## SESSION 2 – SHARING APPROACHES ON IMPROVING THE UNDERSTANDING AND GOVERNANCE OF MINE TAILINGS IN CENTRAL ASIA AND BEYOND (11:35 - 13:00)

Participants welcomed the achievements of Central Asian countries in strengthening industrial safety and preventing accidental pollution from tailings facilities at the national and regional levels, and took note of the progress made to date under the UNECE project to strengthen the safety of mining operations, in particular TMFs, in Central Asia, as follows:

- Formal establishment of the IIWGs in [Kazakhstan](#) and [Tajikistan](#) in 2022 and organization of its two meetings and adoption of their workplans, respectively in each country.
- [Organization of an on-site training at a TMF in Tajikistan in 2021, notably in “Zarafshon”](#), – the largest gold extracting company in Tajikistan.

It was noted that **the establishment of the IIWGs was an important and timely step, because it serves as a forum to exchange lessons learned from Natech and other industrial accidents and agree on steps to improve the prevention of such accidents.** Especially, the participants from Central Asian countries acknowledged that countries of Central Asia are prone to natural disasters, such as floods, and mud/landslides, which could provoke Natech accidents. This risk is aggravated by changing weather patterns and more extreme weather events due to climate change.

**The representatives of Tajikistan also suggested setting up a coordination council (at the political level) between Central Asian countries to explore the potential risks related to hazardous activities on tailings safety.**

Particular emphasis was paid to the fact that industrial accidents do not recognize national borders and can adversely affect human health, cause serious environmental damage and air, soil or water pollution. Therefore, **the coordinated work of state authorities was considered key to preventing industrial accidents and minimizing their potentially catastrophic consequences.**

**The representatives of Kazakhstan suggested establishing a joint working group (at a technical level) on monitoring/control of the transboundary TMFs in Central Asia. As a good practices example in relation to creation of such group, could be used the experience of Kazakhstan and Uzbekistan in the framework of the Uzbek-Kazakh joint working group on environmental protection and water quality in the Syr Darya River Basin.**

Participants took note of the experience and good practices shared by Tajikistan on regulatory activities for the remediation of uranium production legacy sites in Tajikistan. They also learnt about Rio Tinto’s approach to safe tailings management and governance.

Furthermore, **participants expressed their appreciation to UNECE, the Swiss Federal Office for Environment and GIZ for organizing and supporting this subregional workshop** to exchange experiences, good practices and lessons learned, bringing together the relevant stakeholders and partners from industrial safety and water communities.

## SESSION 3 – PREVENTION OF AND RESPONSE TO ACCIDENTAL WATER POLLUTION IN THE DANUBE, DNIESTER AND SYR DARYA RIVER BASINS (14:15 – 15:45)

Participants took note of the achievements under [the UNECE-EU Project on joint measures to prevent and respond to pollution of the Syr Darya River in emergency situations, implemented from June 2021 to February 2023](#), notably of the following:

- Development of an inventory and map of 61 TMFs (9 in Kazakhstan, 30 in Kyrgyzstan, 12 in Uzbekistan, and 10 in Tajikistan and 133 other hazardous industrial facilities in the Syr Darya river basin). Participants also took note of 33 TMFs with potential transboundary effects in the scope of the Industrial Accidents Convention in the Syr Darya River Basin.

- Preparation of an in-depth report addressing the state of water resources, water quality issues and issues related to policies and institutions for water management, industrial safety and prevention of accidental water pollution. The report contains concrete recommendations for riparian countries on improving transboundary contingency planning and reducing water pollution.
- Development of infographics and an executive summary with the findings in English and Russian.

Participants noted that potential accidents and releases at the TMFs or other hazardous facilities in the Syr Darya River Basin can cause serious environmental damage and affect more than 24 million people living in the basin. The most hazardous and risky tailings, assessed by [the Methodology for improving the safety of tailings management facilities](#) developed by the German Federal Agency for the Environment (German UBA) under the auspices of UNECE, are located mainly in Uzbekistan and Tajikistan, although some of them are also in Kazakhstan and Kyrgyzstan.

Participants welcomed the recommendations of the UNECE-EU Project on joint measures to prevent and respond to pollution of the Syr Darya River in emergency situations. **They stressed the importance of continuing these efforts in other Central Asian countries, notably to implement the proposed recommendations through the development of the joint contingency plan in the Syr Darya River Basin.**

Participants welcomed the experience and good practices shared in relation to mapping and integration of tailings risks in the Danube River Basin Management Plan and transboundary cooperation on preventing accidental water pollution from mine tailings facilities in the Dniester River Basin.

Numerous needs/challenges and proposals were mentioned during the round-table discussion in order to scale up regional efforts to improve mine tailings safety and prevention of accidental water pollution in the Syr Darya River Basin, among others, as follows:

- Develop joint contingency plans to prevent accidental water pollution in the Syr Darya River Basin.
- Jointly address the measures and take steps to increase tailings safety and prevent accidental water pollution in the Syr Darya River Basin.
- Enhance inter-institutional cooperation, notably of controlling/monitoring bodies.
- Safe management of TMFs in view of capacity constraints (human, financial).

Besides, the participants stressed the needs/challenges and proposals related to mine tailings safety and prevention of accidental water pollution in Central Asia such as:

- Recultivate the TMFs to minimize accidents and pollution risks.
- Mainstream the regional efforts to develop relevant standard operating procedures and mitigation measures in case of accidents and continue preparing the inventories of hazardous facilities, including TMFs.
- Foster access to real-time data.
- Align the policy frameworks of Central Asian countries with the provisions of the UNECE Convention on the Transboundary Effects of Industrial Accidents and the Convention on the Protection and Use of Transboundary Watercourses and International Lakes.

#### SESSION 4 – NEEDS AND THE WAY FORWARD ON PREVENTING ACCIDENTAL WATER POLLUTION FROM TAILINGS IN CENTRAL ASIA (16:15 – 18:00)

**This session consisted of group work during which the participants discussed the below questions and presented the group findings at the end of their discussion:**

**1) What are, in your opinion, the most pressing challenges and needs related to tailings safety and preventing accidental water pollution in Central Asia?**

**2) Which are, in your opinion, the most important measures or actions that should be taken and by whom to address the above challenges and needs?**

**3) How can your authority/organization help address these challenges and needs?**

**The participants welcomed the frank dialogue and open sharing of the most pressing challenges and needs and important measures to address these challenges/needs related to tailings safety and preventing accidental water pollution in Central Asia.**

The group representing operators expressed, among others, the following **needs/challenges and proposals** in the area of mine tailings safety and prevention of accidental water pollution in Central Asia:

- Need to follow strict regulations and legislation, notably during construction, exploitation, closure and recultivation of these facilities.
- Recommendation to annually monitor the TMFs (notably, ground, water and etc.) by an independent laboratory and compare the data.
- When it comes to accidents prevention, operators should constantly be in contact with the population, e.g. every six months conduct exercises on how to react in case of an accident.
- Need for training of personnel, notably those dealing with the handling of the waste.
- It is essential that all stakeholders, including the general public, are aware of the risks posed by TMFs
- Lack of land to build tailings management facilities.

Participants took note of several **needs/challenges and proposals** in the area of mine tailings safety and prevention of accidental water pollution in Central Asia, as expressed by a group representing the competent national authorities, among others, of the following:

- TMF work should be carried out in strict compliance with the policy and legislation frameworks.
- Create a coordination council to explore the potential risks related to hazardous activities.
- Undertake trainings of competent authorities and operators at the local/regional levels, including the creation of training courses with the support of UNECE.
- Organization of the on-site training at a TMF in Europe in order to improve the qualification and exchange experience.
- Improve the legislation related to the safe management of TMFs, considering geological conditions.

The group representing academia, NGOs and international/governmental organizations highlighted, among others, the following **needs/challenges and proposals** in the area of mine tailings safety and prevention of accidental water pollution in Central Asia:

- Important to involve all relevant stakeholders throughout the whole life cycle of TMFs due to the lack of collaboration between all stakeholders.
- Lack of knowledge on climate change's impact on tailings safety, therefore, there is a need to assess its effects from an integrated perspective, including on disaster risk reduction, align national policies, and take into consideration lessons learnt.
- Adapt international guidance and tools to the national context and address regulatory gaps.
- Important to develop low-cost and low-technological options to mine tailings problems, e.g. nature-based solutions.
- Weak environmental impact assessments conducted for mining operations.

The group representing online participants stressed, among others, the following **needs/challenges and proposals** in the area of mine tailings safety and prevention of accidental water pollution in Central Asia:

- Make the information in relation to tailings management facilities publicly available and transparent.
- Establish inter-agency groups at the country and regional levels.

- Develop a regional approach to current problems and needs related to the safety of tailings and prevention of accidental water pollution in Central Asia.
- Involve all stakeholders, including the local community.
- Develop a sustainable early warning and alert system at the national and regional levels.

## DAY 2 – Friday, 26 May 2023

### SESSION 5 – INCREASING ACCESSION TO AND IMPLEMENTATION OF THE INDUSTRIAL ACCIDENTS CONVENTION AND OTHER UNECE MULTILATERAL ENVIRONMENTAL AGREEMENTS (9:00 – 10:15)

Participants took note of the information on the benefits of accession and the main requirements of the UNECE Convention on the Transboundary Effects of Industrial Accidents.

Participants appreciated the information shared by Kazakhstan, as the only Party to the UNECE Convention on the Transboundary Effects of Industrial Accidents in Central Asia, in relation to its experience in implementing the Convention. Notably, the following activities were carried out by Kazakhstan:

- Implementation of the UNECE-EU Project on joint measures to prevent and respond to pollution of the Syr Darya River in emergency situations.
- Development of the national ecological code.
- Implementation of the environmental principle «a Polluter pays and remedies”, new approaches to assess the impact on the environment, introduction of best available practices and work of automatic monitoring systems of emissions.

Furthermore, participants welcomed the steps taken by Tajikistan to prepare for accession to the UNECE Industrial Accidents Convention, notably through:

- Investigation of the information needed and steps to undertake at the national level to ratify the Industrial Accidents Convention.
- Implementation of the UNECE Projects to strengthen the safety of mining operations, in particular tailings management facilities (TMFs), in Tajikistan and Central Asia and the Syr Darya River Basin.
- Establishment and work of the IIWG.
- Concluding cooperation agreements with other Central Asian countries, notably Uzbekistan and Turkmenistan.
- Review of national policies and legislation of Tajikistan related to industrial safety in view of its alignment with the Industrial Accidents Convention’s provisions.

Participants took note of the information provided on the benefits of implementation of other UNECE MEAs, including the Convention on Long-range Transboundary Air Pollution, Convention on Environmental Impact Assessment in a Transboundary Context, Convention on the Protection and Use of Transboundary Watercourses and International Lakes and its Protocol on Water and Health, Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. Besides, the cooperation between UNECE and Green Central Asia, notably in the field of enhancing environment, climate and water resilience, was stressed.



## SESSION 6 – EXAMPLES OF INTEGRATING RISKS AND APPLYING A MULTI-HAZARD/RISK APPROACH IN CENTRAL ASIA AND BEYOND (10:15 – 11:15)

Participants acknowledged that the inadequate handling of hazardous substances and the improper management of relevant risks at such facilities, which adds to the increased risk of natural disasters, can lead to large-scale technological accidents and provoke accidental air, water and soil pollution. **Hence, the participants agreed that integrating a multi-hazards/multi-risk approach into legislation, in national and transboundary settings, and strong governance can be effective solutions to build disaster resilience and climate change adaptation.**

Participants welcomed the information shared on the regional climate and security initiative “Green Central Asia”<sup>2</sup> of the German Federal Government commissioned by the Federal Foreign Office and the implementation in the framework of the Regional Action Plan elaborated together with all five Central Asian countries. The Initiative with its five partner countries currently drafts the first Regional Climate Change Adaptation Strategy for Central Asia, which aims to set up a mechanism for cooperation between the Central Asian countries to overcome the adverse effects of climate change and to implement adaptation measures. It is envisaged to introduce the Strategy at COP-28 in Dubai this year. A memorandum of understanding concerning monitoring and modelling of glaciers in Central Asia among eight research and meteorological institutes of the region facilitates coordination and cooperation to enhance security and safety along watersheds in Central Asia.

Participants noted the progress achieved by Kyrgyzstan and Tajikistan under [the UNECE-UNDRR project on “Addressing technological/industrial accident risks in national Disaster Risk Reduction strategies and plans”](#), implemented from August 2022 to January 2023 under Central Asia Initiative with funding by the European Union, notably, as follows:

- Development of “Proposals and recommendations on the integration of technological /industrial accident risks into the Draft Action Plan for implementation of the Concept of Comprehensive Emergency Protection of the Population and Territory of the Kyrgyz Republic for 2018-2030 (stage II – 2023-2026).”
- Development of “Proposals and recommendations on the integration of technological/industrial accident risks, including Natech risks, into the Midterm Government Programme of Tajikistan to protect the population and environment from emergencies for 2022-2024.”

These activities also strengthened the implementation of the Sendai Framework of Disaster Risk Reduction and the UNECE Convention on the Transboundary Effects of Industrial Accidents.

Participants took note of the benefits of the application of a multi-hazard approach to the management of technological risks related to mine tailings, and also Natech risks, notably as follows:

- Improves the capacities of the countries to be prepared and be able to respond to potential hazards.
- Reduces the potential impact of hazards on communities, economies/livelihoods and the environment
- Reduces social and economic impacts, and
- Enhances environmental sustainability.

Participants agreed that **it is important to further progress in enhancing tailings safety and a multi-hazard approach to risk and hazard management, considering the linkages of natural, climate-related and technological hazards/risks.**

Participants considered political support, the development of strategies to address the adverse effects of climate change, the integration of strategies at a local level, the application of a multi-hazard approach, an inclusive

<sup>2</sup> More information is available at <https://reporting.giz.de/2021/our-work-around-the-world/green-recovery/green-central-asia-initiative/> and at: [www.greencentralasia.org](http://www.greencentralasia.org)

approach as crucial for the safe management of mine tailings and the prevention of related transboundary water pollution.

## SESSION 7 – LESSONS LEARNT FROM PAST TAILINGS ACCIDENTS IN THE UNECE REGION (11:45 – 12:35)

Participants took note of lessons learned from the tailings dam failures at Baia Mare and Baia Borsa, Romania, in 2000, notably the following:

- Operation of TMFs in open water-circuit is safer.
- Danube International alarm centre was very efficient.
- Stringent monitoring of TMFs is necessary.
- New legislation for TMF safety evaluation was required.
- Safety and risk evaluation tools are very important and useful – conclusion of the Danube TMF project training in Romania (2019).
- Risk analysis for TMFs to be used in land-use planning processes.
- Further actions at national, EU, and UNECE levels are needed to implement safety assessment tools and best practices to reach the minimum safety standards of TMFs.

Participants also had an opportunity to learn from the tailings dam failure at Kolontar, Hungary, in 2010, notably that:

- Further improvement of emergency warning systems (e.g. DAEWS) is needed.
- On-site/off-site contingency planning needs to be in place.
- Risk assessment has to be applied.
- „Hot spot” inventories have to be updated and more widely used.
- Stringent control, permitting, clear responsibility of authorities.
- Strict enforcement of existing legislation.

Additionally, participants welcomed the information shared by the representatives of Tajikistan regarding the status of radiation and industrial tailings management facilities in Tajikistan.

## SESSION 8 – FURTHER GUIDELINES, APPROACHES AND TOOLS TO IMPROVE TAILINGS SAFETY AND THE PREVENTION OR MITIGATION OF ACCIDENTAL WATER POLLUTION (12:35 – 13:50)

Participants welcomed a circular economy solution to the mine tailings and sand sustainability crises. They took note of the information on the International Commission on Large Dams (ICOLD) and international tools and guidelines in response to tailings dam failures, among others, as follows:

- Various professional bodies and Industry Guidelines;
- Global Industry Standard on Tailings Management;
- ICOLD Bulletin on Tailings Dam Safety;

Participants also greatly learnt from such innovative approaches and initiatives to improve tailings safety and the prevention or mitigation of accidental water pollution as:

- Satellite-based risk assessments and monitoring of TMFs;
- Nature-based solutions to mitigate pollution from tailings management facilities in Central Asia.

## CLOSING SESSION (13:50 – 14:00)

The participants took note of all proposals and suggestions made at the subregional workshop and welcomed fruitful work, discussion and exchange of information on improving the safety of tailings management facilities and the prevention of accidental water pollution and implementation of the UNECE Convention on the

Transboundary Effects of Industrial Accidents and the Convention on the Protection and Use of Transboundary Watercourses and International Lakes.

Participants agreed that understanding and managing both natural and technological hazards and the risks associated with them is becoming an increasingly relevant issue and, at the same time, a challenge for countries of Central Asia. The importance of strengthening transboundary cooperation with riparian countries, including at the river basin level, to prevent and mitigate the consequences of possible accidents, including accidents potentially affecting transboundary water bodies, was underlined.

Participants appreciated UNECE's active support of Central Asian countries in capacity building in the area of industrial safety, water management and adaptation to climate change, in particular through the UNECE Convention on the Transboundary Effects of Industrial Accidents and the Convention on the Protection and Use of Transboundary Watercourses and International Lakes.

Participants stressed that there is a need to further improve industrial safety and prevent accidental water pollution at the national level and in a transboundary context.

## 5. Evaluation of the subregional workshop and further information

More information on the subregional workshop, including **background information**, **workshop presentations**, a **list of participants** and an **evaluation summary**, are available on [the Convention's website](#).

The evaluation of the subregional workshop was overall very positive, echoing the above recommendations and conclusions. **In the evaluation form for the subregional workshop, participants made the following concrete suggestions to further strengthen mine tailings safety in Central Asia:**

- Continue discussing these issues and sharing experiences at the regional level (e.g. through sub-regional seminars)
- All Central Asian countries should join the UNECE Industrial Accidents Convention and harmonize their national legislation accordingly
- Continue this work in the Syr Darya and other river basins and consider also other challenges besides tailings.
- Develop a tailings storage safety strategy for countries in the Syr Daya River basin
- Study the experience of other regions with similar problems and implement similar projects there.
- Provide expert support by the international organizations to the competent authorities at the national level to improve environmental safety.
- Cooperate with the Global Tailings Review and tailings storage operators at the national level seeking to use international standards with the possible organization of an "exemplary" tailings storage facility in terms of safety and modern standards.
- Hold an on-site training to consolidate the knowledge gained. In addition, organize a meeting later in order to follow up whether the recommendations have been implemented and the proposed developments have been used.
- Consider all the risks associated with the operation of hazardous production facilities, not limited to tailing dumps and transboundary rivers.

Finally, more details about the **UNECE projects on strengthening mine tailings safety**, including their activities and outputs, are available [here](#) for Central Asia and [here](#) for Uzbekistan.