Wed, Apr 28 2021 | IOMC webinar:
Chemical accident prevention, preparedness and response

Safety perspectives from the UNECE Industrial Accidents Convention

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1. CHALLENGES AHEAD TO ENSURE A HIGH LEVEL OF SAFETY AT HAZARDOUS INSTALLATIONS

Beirut: Largest single explosion in the Middle East

Beirut, Lebanon, August 2020, Ammonium nitrate explostion, causing over 250 deaths and many homeless

UNECE – Press
https://unece.org/environment/press/we-must-not-wait-next-ammonium-nitrate-blast-solutions-exist-improve-safety

By Mehr News Agency, CC BY 4.0,
https://commons.wikimedia.org/w/index.php?curid=92996957

Mine tailings accidents : Baia Mare & Brumadinho

Effects of cyanide spill from a tailings dam breach near Baia Mare, Romania (2000), causing wide-ranging, transboundary water pollution, loss of flora and fauna

Tailings Dam disaster in Brumadinho, Brazil (2019), causing over 250 tragic deaths

By Photo: Délmagyarország/Karnok Csaba - http://www.delmagyar.hu/szeged_hirek/azonnal_olt_a_cian_a_tiszaban/2415983/, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=42070845

Image:
'Catástrofe socioambiental provocada pelo rompimento de barragem da mineradora Vale em Brumadinho (MG)' by Felipe Werneck/Ibama (2019) (CC BY-SA 2.0), available at https://www.flickr.com/photos/ibamagov/32132222657/

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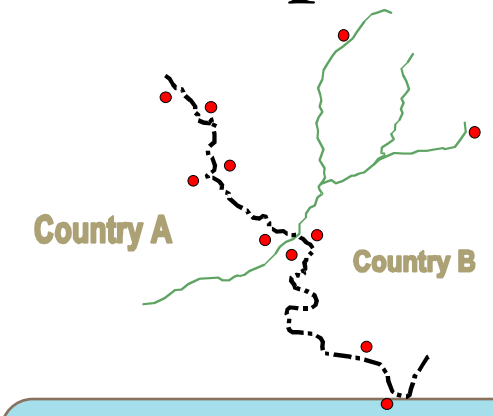
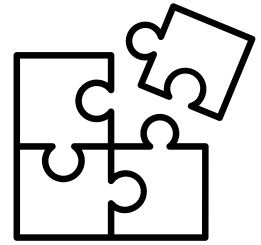
Chemical accidents are preventable!
Lives, livelihoods and assets lost could have been saved

Multiple safety challenges



Transboundary impacts



Ageing **infrastructure: Maintenance, investment**

Safe operation by industry

Lack of capacity, knowledge & training

Effective **regulation & oversight** by government

Climate change / extreme weather events

Inclusive **public information** and **participation**

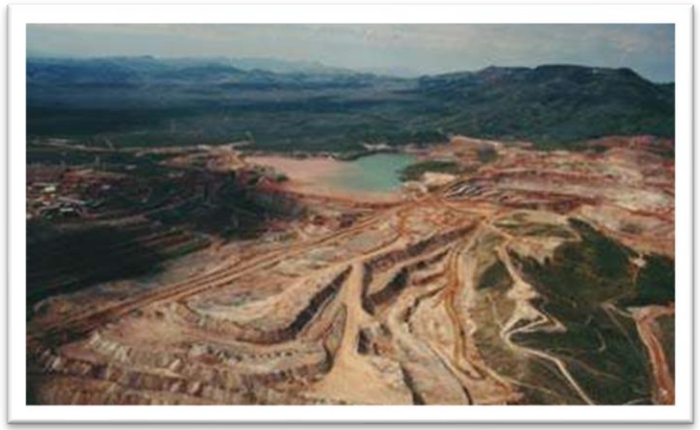
Cascading risks & disasters

Clear roles and responsibilities → **Multi-sectoral cooperation**

Urbanization → Land-use planning, Siting

Complacency

Climate change & Natech risk management



Baia Mare, January 2000

Natech

Climate change

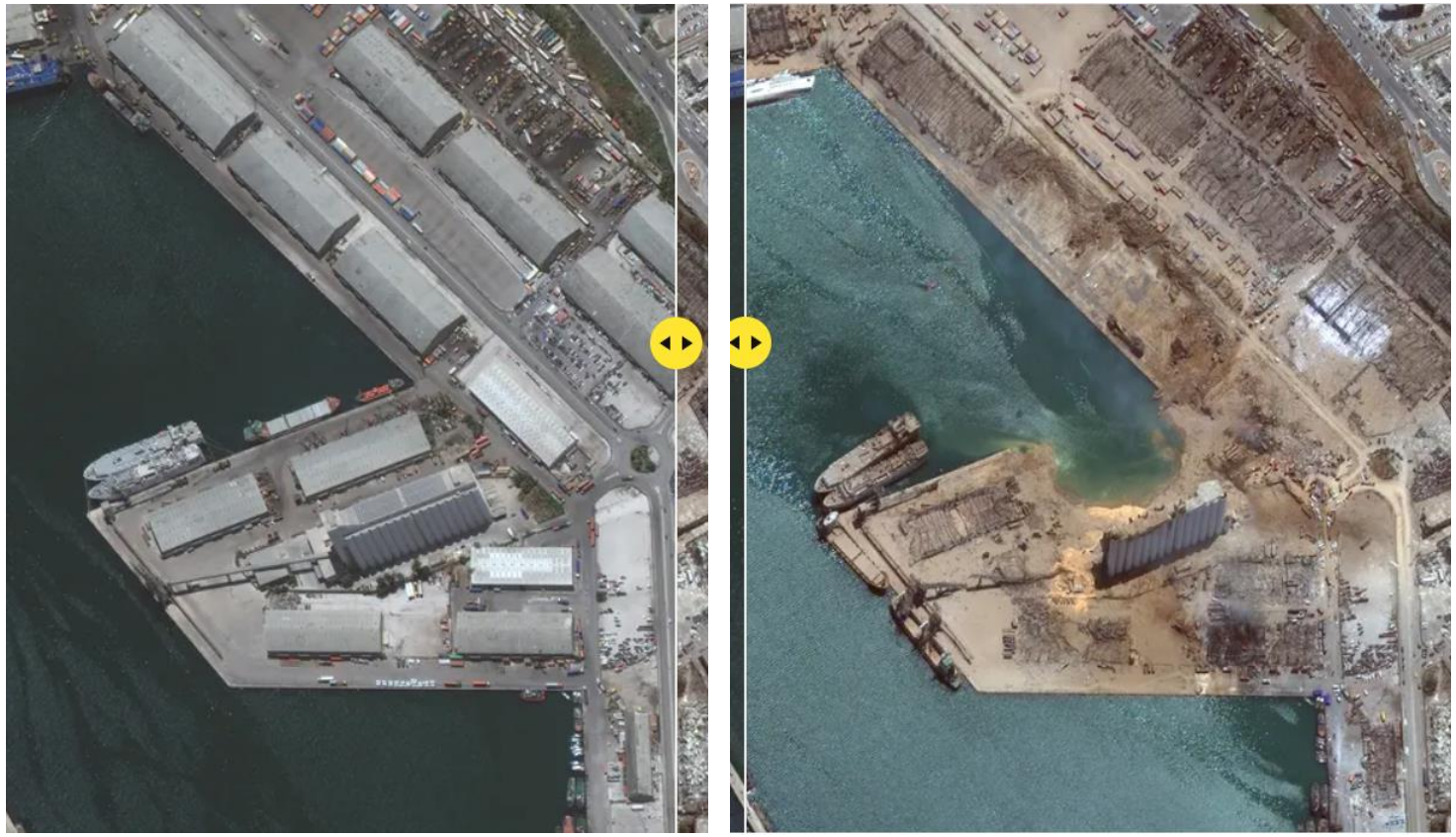
Increasing frequency and intensity of extreme weather events and slow-onset events

Inter-linked and cascading risks

Risk Assessment scenarios

Multi-sector, multi-hazard DRR strategies

Regulation & governance



Beirut, Lebanon, August 2020, Ammonium nitrate explostion

Photograph: Maxar Technologies/AP
https://www.theguardian.com/world/2020/aug/06/beirut-explosion-before-and-after-satellite-images

- **Oversight** of explosive materials
- **Cooperation mechanisms** between authorities, industry, stakeholders
- **Safety regulations** for explosives & **enforcement**
- **Risk assessment**
- **Public information**
- **Land-use planning, decision-making on siting**
- **Compound disasters**

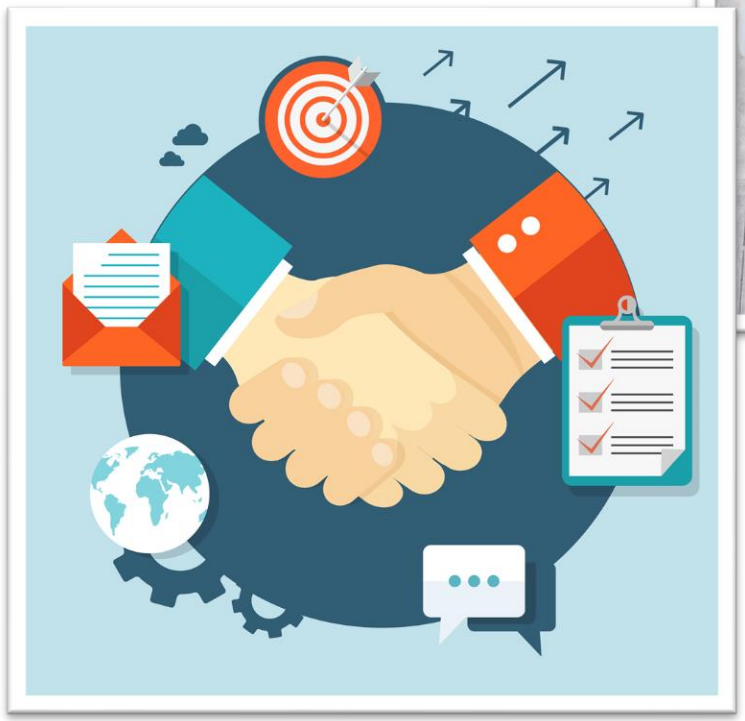
2. STRENGTHENING EXISTING LEGAL INSTRUMENTS AND PROGRAMMES FOR THE PREVENTION, PREPAREDNESS AND RESPONSE TO CHEMICAL ACCIDENTS

Safety is ≠ no accident ! Safety is like a relationship

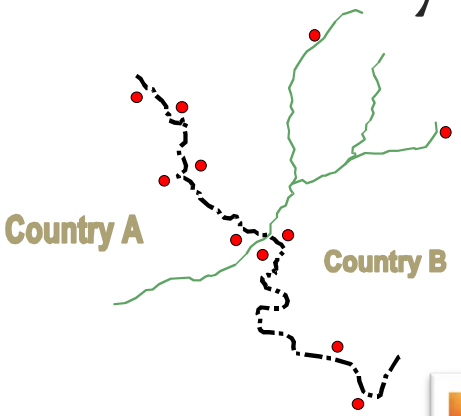
- **Safety is like a relationship**: it requires **continuous efforts**
- **Risks evolve,** so does the scale of potential accidents
- **Risk assessments** need to take account of evolving risks: review and update
- **Sharing of knowledge and experiences**
- **Guidelines and good practices**

Continuous efforts by gov't & industry

- **Governance**
- **Highest priority to safety** - from top to bottom of companies
- **Effective oversight:** inspections, audits, risk assessment
- Cooperation among **government, industry & stakeholders** (off-site contingency planning, LuP/siting)
- **Coherent policy making** among related policy areas: Multi-hazard, and multi-sectoral DRR strategies



Safety is of regional concern – transboundary implications!



Sandoz accident in Schweizerhalle, Switzerland (1986)

Ust-Kamenogorsk News

Accidental spill, zinc mine in Ridder, Kazakhstan (2016)

UNECE Industrial Accidents Convention

- Negotiated after the 1986 Sandoz accident
- Adopted in 1992, entered into force in 2000
- 41 Parties
- Designed to protect people and the environment against industrial accidents
- Focus on transboundary cooperation
- Applies also to accidents caused by natural disasters (NATECH)
- Support implementation of SDGs
- Instrument for technological DRR under the Sendai Framework

Policy forum & Centre of excellence

- Exchange of experiences and good practices
- Intergovernmental meetings, workshops, seminars
- Safety Guidelines and good industry practices

Assistance and Cooperation Programme

UNECE
Convention on the Transboudary Effects of Industrial Accidents
ASSISTANCE AND COOPERATION PROGRAMME

Capacity-development in countries of Eastern and South-Eastern Europe, the Caucasus and Central Asia:

- **Subregional projects and workshops**
- **National** workshops to strengthen policy-making and governance
- **Transboundary response exercises** to strengthen countries' preparedness and response capacity to industrial accidents

Training in Altyntau, Kokshetau in Kazakhstan (11-13 June 2019)

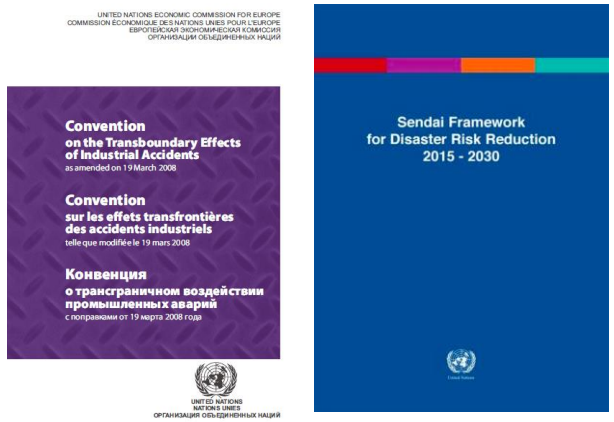
Photos credit: UNECE

Sub-regional workshop on industrial safety in Central Asia, 25-26 September 2018, Almaty, Kazakhstan

Photos credit: UNECE

3. MOST ESSENTIAL ELEMENTS OF AN EFFECTIVE CHEMICAL ACCIDENT PREVENTION PROGRAM AT THE NATIONAL LEVEL…AND ACROSS BORDERS

UNECE
Industrial Accidents Convention



"Initially developed for the European region ..., the approaches and experience [under the Industrial Accidents Convention] offer insights to countries pursuing Sendai Framework commitments in technological disaster risk management"

Sendai Framework for Disaster Risk Reduction
Priorities for Action

1. Understanding disaster risk

Encouraging Parties to identify potentially hazardous activities to be able to target preventive measures, preparedness and response.

2. Strengthening disaster risk governance to manage disaster risk

Providing a governance mechanism for regional cooperation to address transboundary disaster risk reduction.

3. Investing in disaster risk reduction for resilience

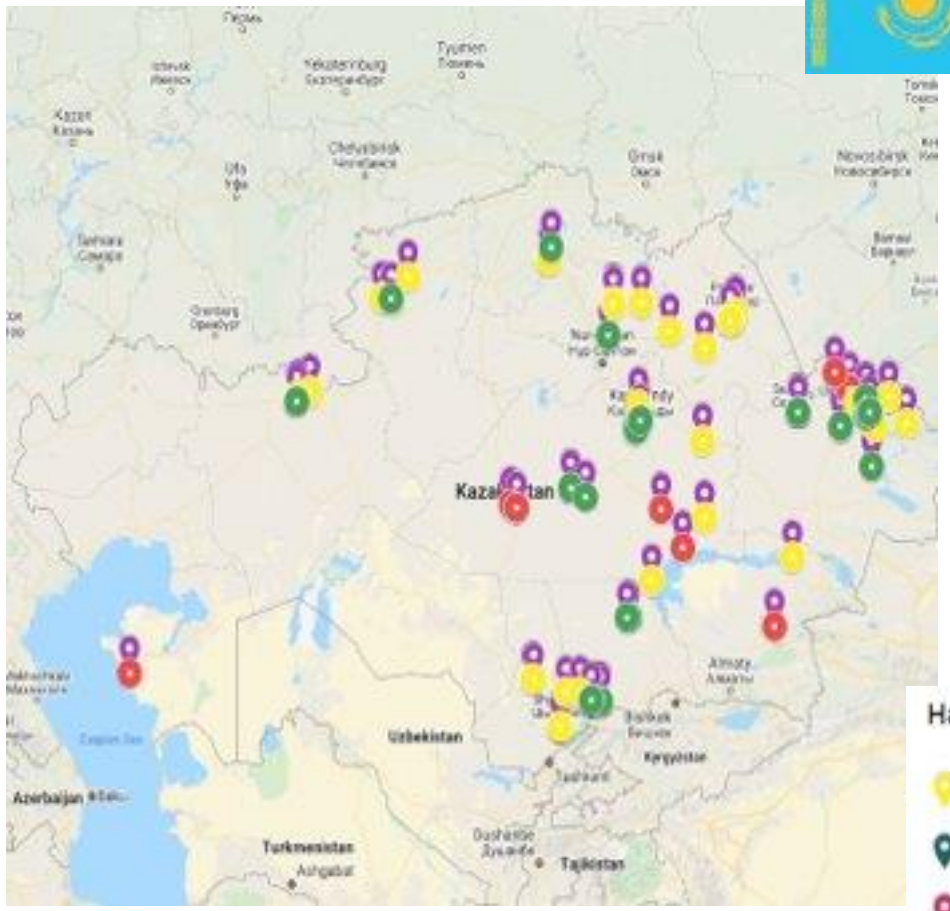
Promoting investments in preventive measures, which cost less than remedying the consequences of disasters.

4. Enhancing disaster preparedness for effective response and to"Build Back Better"in recovery, rehabilitation and reconstruction

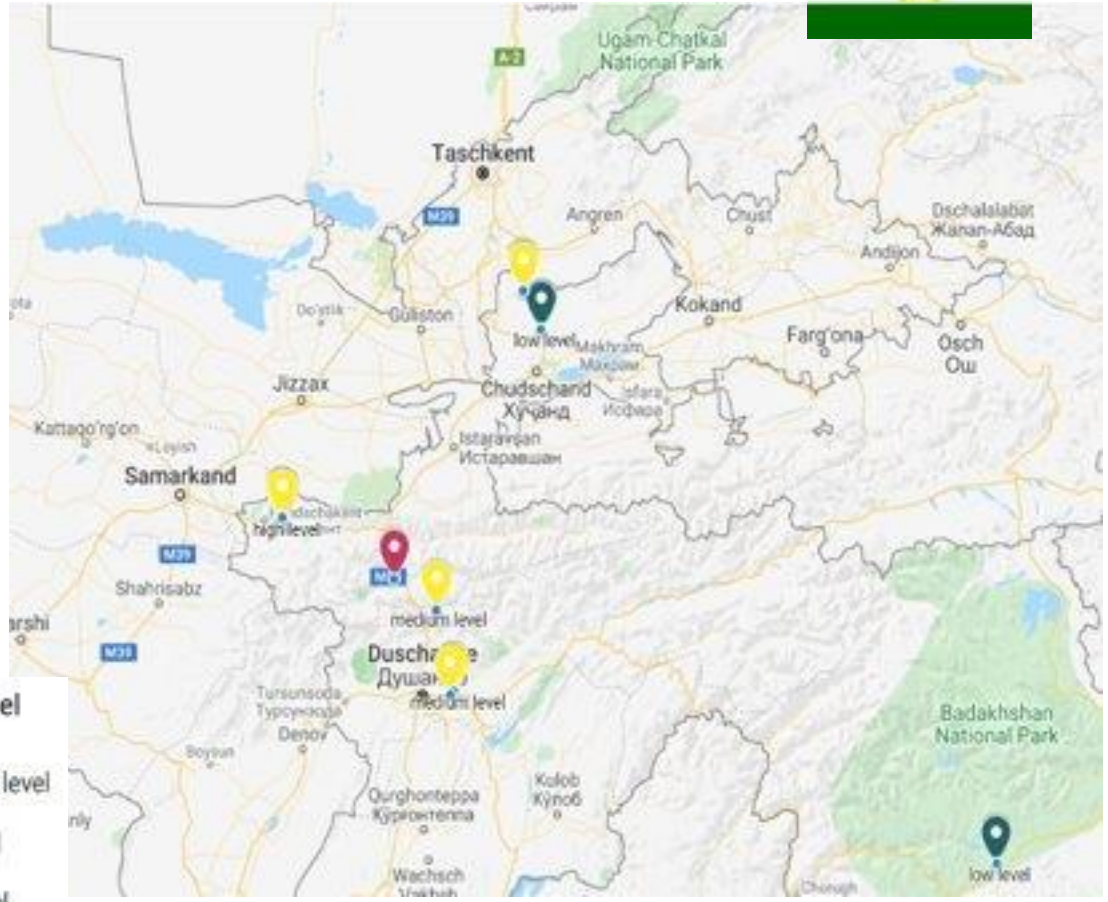
Ensuring preparation, review and periodical update of disaster preparedness and contingency policies, plans and programmes.

1. Understanding disaster risk – at national level…

Hazard map of TMFs of Kazakhstan



Hazard map of TMFs of Tajikistan



Prepared under the UNECE Projects to strengthen the safety of Tailings Management Facilities in Central Asia, supported by FOEN of Switzerland

Convention on the Transboundary Effects of Industrial Accidents

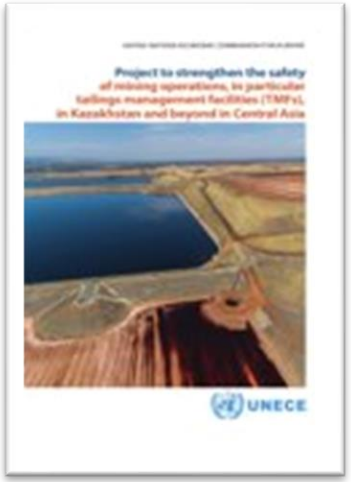
ASSISTANCE AND COOPERATION PROGRAMME

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Office for the Environment FOEN

1. Understanding disaster risk... across borders



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ASSISTANCE AND COOPERATION PROGRAMME

Schweizerische Eidgenossenschaft
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Confederaziun svizra

Swiss Confederation

Federal Office for the Environment FOEN

7 TMFs capable of causing transboundary effects in Kazakhstan

№	Name of TMF	Region, district	THI	transboundary effect
16	TMF nr.1 of LLC "Aktyubinsk Copper Company"	Aktobe region, Khromtau district, town settlement Koktau	10.17	
41	TMF of Orlovsky dressing plant of LLC "Vostoktsvetmet"	East Kazakhstan region, Borodulikhinsky district, town settlement Zhezkent	12.03	Near to the border with Russia (3 km)
103	Sludge storage nr. 1 of JSC ""Aluminium of Kazakhstan"	Pavlodar region, Pavlodar city, industrial zone "Vostochnaya", building 65	11.61	Irtysh River
104	Sludge storage nr. 2 of JSC ""Aluminium of Kazakhstan"	Pavlodar region, Pavlodar city, industrial zone "Vostochnaya", building 66	11.52	Irtysh River
105	Sludge storage nr. 3 of JSC ""Aluminium of Kazakhstan"	Pavlodar region, Pavlodar city, industrial zone "Vostochnaya", building 67	11.00	Irtysh River
107	Ash sludge storage nr. 1, Aksu Ferroalloy Plant	Pavlodar region, Aksu city	10.60	Irtysh River
108	Ash sludge storage nr. 2, Aksu Ferroalloy Plant	Pavlodar region, Aksu city	10.95	Irtysh River

4 TMFs capable of causing transboundary effects in Tajikistan

№	Name of TMF	Region, district	THI	transboundary effect
1	Old TMF of JV "Zeravshan" LLC	Sughd region, Penjikent district, urban village Sujina	12.52	Zarevshan River(app. 0.5 km)
2	TMF of JV "Zeravshan" LLC, Dam nr. 1	Sughd region, Penjikent district, urban village Sujina	11.21	Zarevshan River (app. 1.5 km)
3	TMF of JV "Zeravshan" LLC, Dam nr. 2	Sughd region, Penjikent district, urban village Sujina	11.09	Zarevshan River (app. 0.5 km)
11	TMF nr.2 "Zarnisor"	Sogd region, Gulistan city, settlement Zarnisor	10.83	13 km to the border with Uzbekistan

1. Understanding disaster risk in a transboundary context

Transboundary hazard map of the Danube Delta

Oil terminals the Delta, spanning the Republic of Moldova, Romania, Ukraine,
Water risk index

Prepared under the UNECE Project to strengthen hazard and crisis management in the Danube Delta, with the support of Germany

Convention on the Transboudary Effects of Industrial Accidents

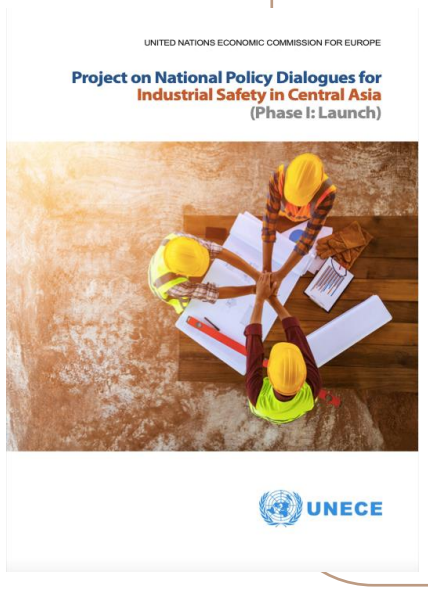
ASSISTANCE AND COOPERATION PROGRAMME

Umwelt Bundes Amt
Für Mensch und Umwelt

Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit

2. Strengthening risk governance

National Policy Dialogues (NPDs) for Industrial Safety in Central Asia
Project (Launch, Phase 1) implemented by UNECE, with the support of Russia



Prevention

Readiness

Response

Inter-institutional cooperation

Ministry of Environment

Public

Ministry of Internal Affairs, Emergency Situations

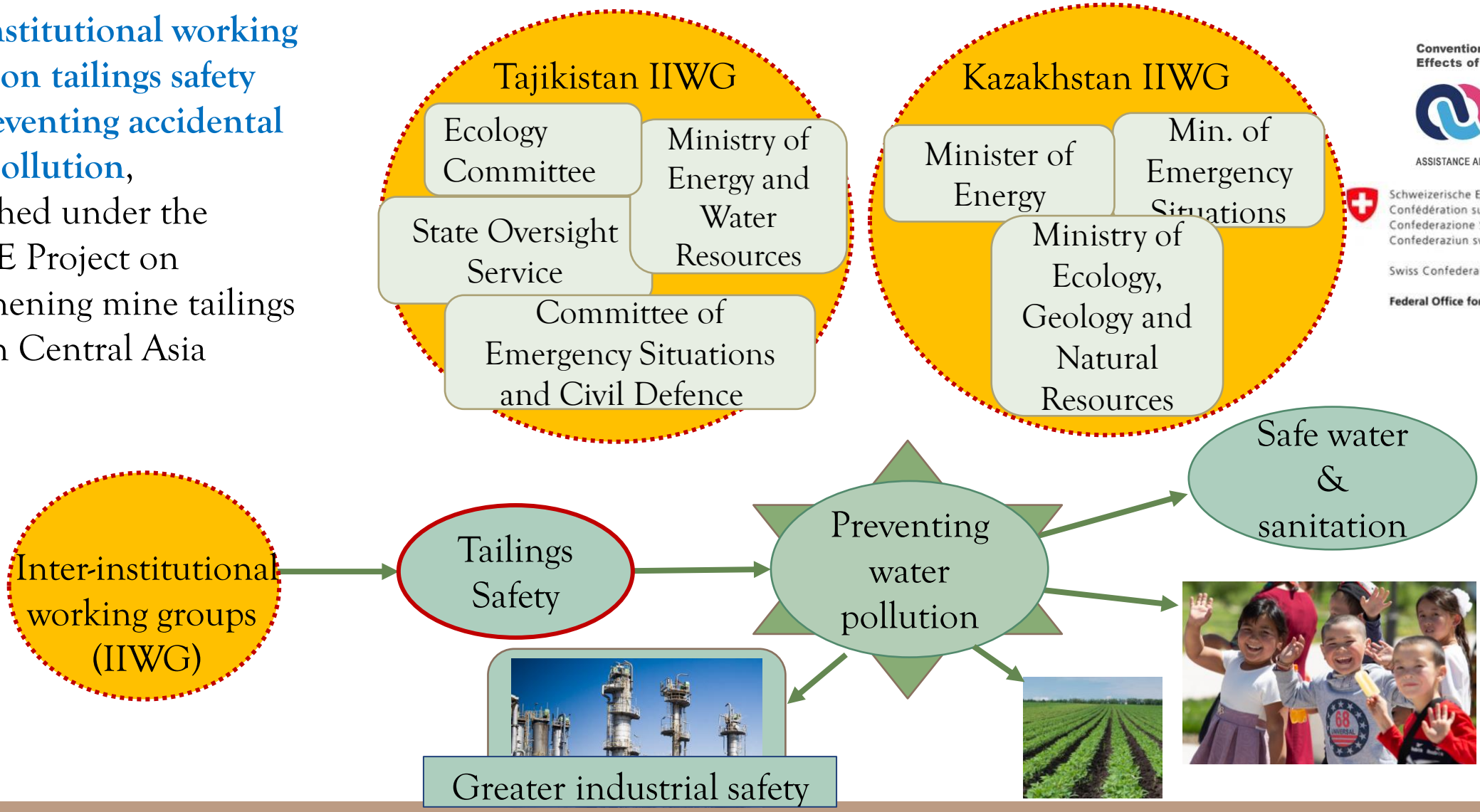
Industry

Regional and local authorities

Other authorities

2. Strengthening risk governance

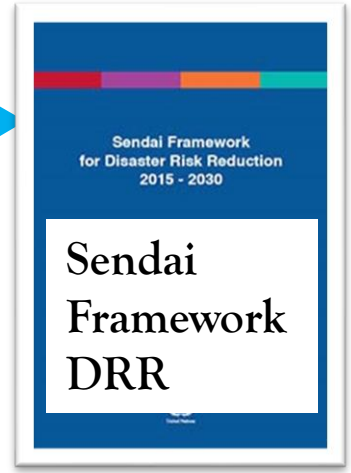
Inter-institutional working groups on tailings safety and preventing accidental water pollution, established under the UNECE Project on strengthening mine tailings safety in Central Asia

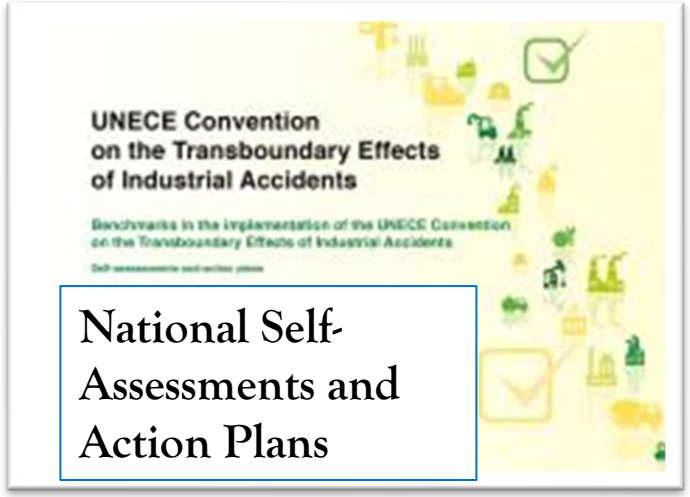


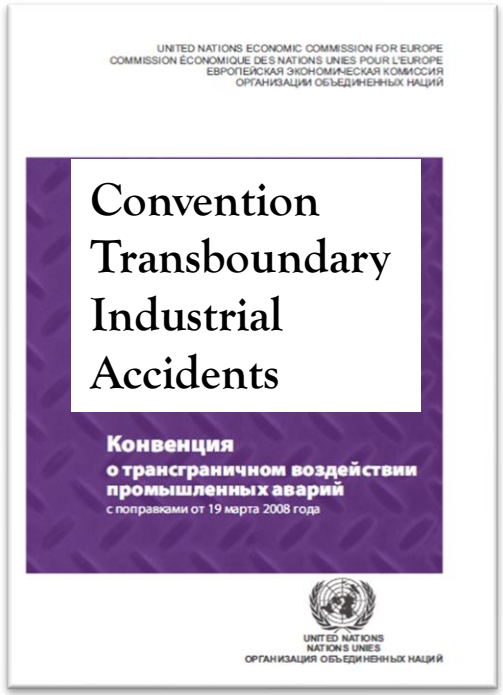
2. Strengthening disaster risk governance & Policy-making

National and local disaster risk reduction strategies (Target E)

Multi-hazard DRR strategies, incl. chemical accident risk







4. Preparedness for an effective response: at the national level, and across borders

UNECE Convention on the Transboundary Effects of Industrial Accidents
Assistance Programme

- Improved **hazard and crisis management for industrial activities** hazardous to water - Oil terminals in the Danube Basin
- First **trilateral table-top and field exercise** in the Danube Delta, shared among the Republic of Moldova, Romania and Ukraine
- Draft joint **contingency plan**

UNECE Project on Hazard and crisis management in the Danube Delta (2010–2015), implemented with the support of Finland, Germany and the Netherlands

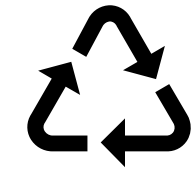
Trilateral exercise among Romania, Republic of Moldova and Ukraine, UNECE Danube Delta Project, 2015

Umwelt Bundes Amt
Für Mensch und Umwelt

Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit

Include chemical accident prevention & preparedness principles in SAICM beyond 2020 process

- **Chemical/industrial accident prevention, preparedness and response is an integral part of the sound management of chemicals and waste**
- Need to consider the **prevention of industrial accidents when producing, storing and processing chemicals**, in addition to their characteristics
- Waste: Life-cycle thinking needs to consider **hazardous waste that is stored in tailings management facilities**
- Consider & reflect **existing legal and policy instruments** in SAICM beyond 2020 regime and ICCM outcome documents



Thank you for your attention!

For more information please visit:

Industrial Accidents Convention: www.unece.org/env/teia

Publications: https://www.unece.org/environmental-policy/conventions/industrial-accidents/publications.html

or contact:

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