

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

# Safety perspectives from the UNECE Industrial Accidents Convention

Franziska Hirsch,  
Secretary, UNECE Convention on  
the Transboundary Effects of  
Industrial Accidents



**UNECE**

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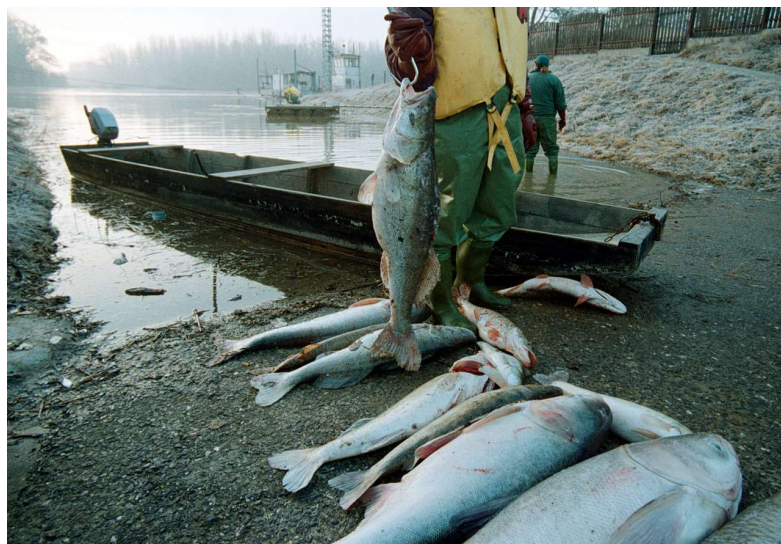
# 1. CHALLENGES AHEAD TO ENSURE A HIGH LEVEL OF SAFETY AT HAZARDOUS INSTALLATIONS

# Beirut: Largest single explosion in the Middle East



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

# Mine tailings accidents : Baia Mare & Brumadinho



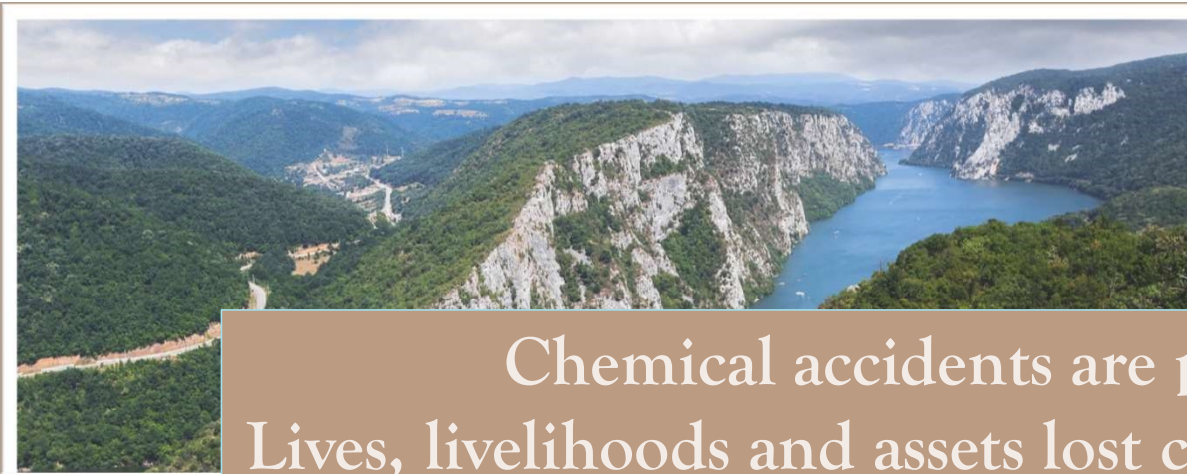
Effects of cyanide spill from a tailings dam breach near Baia Mare, Romania (2000), causing wide-ranging, transboundary water pollution, loss of flora and fauna



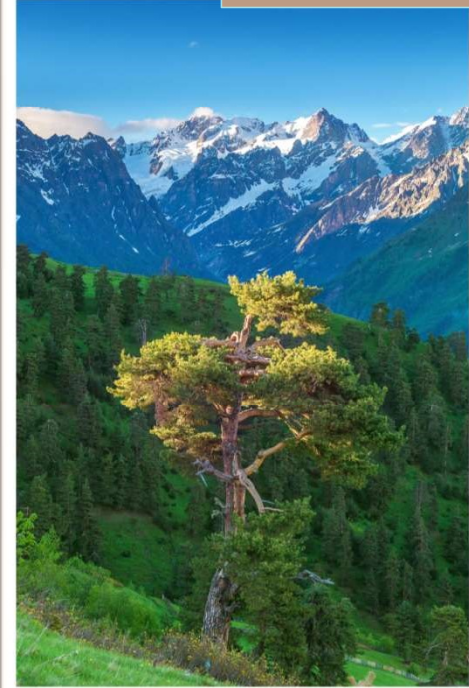
Tailings Dam disaster in Brumadinho, Brazil (2019), causing over 250 tragic deaths

By Photo: Délmagyarország/Karnok Csaba -  
[http://www.delmagyar.hu/szeged\\_hirek/azonnal\\_olt\\_a\\_cian\\_a\\_tiszaban/2415983/](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>

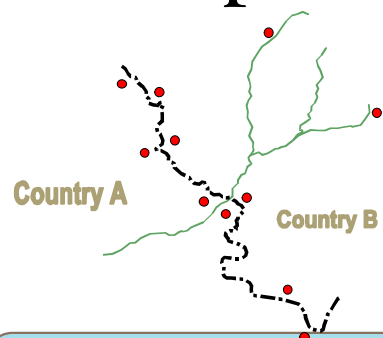
Image:  
'Catástrofe socioambiental provocada pelo rompimento de barragem da mineradora Vale em Brumadinho (MG)' by Felipe Werneck/Ibama (2019) ([CC BY-SA 2.0](https://creativecommons.org/licenses/by-sa/2.0/)), available at <https://www.flickr.com/photos/ibamagov/32132222657/>



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

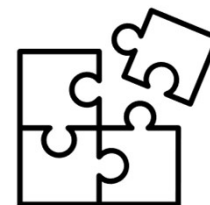
Inclusive **public information**  
and **participation**

Cascading risks &  
disasters

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

Urbanization → Land-  
use planning, Siting

Complacency



# Climate change & Natech risk management



Natech

Climate change

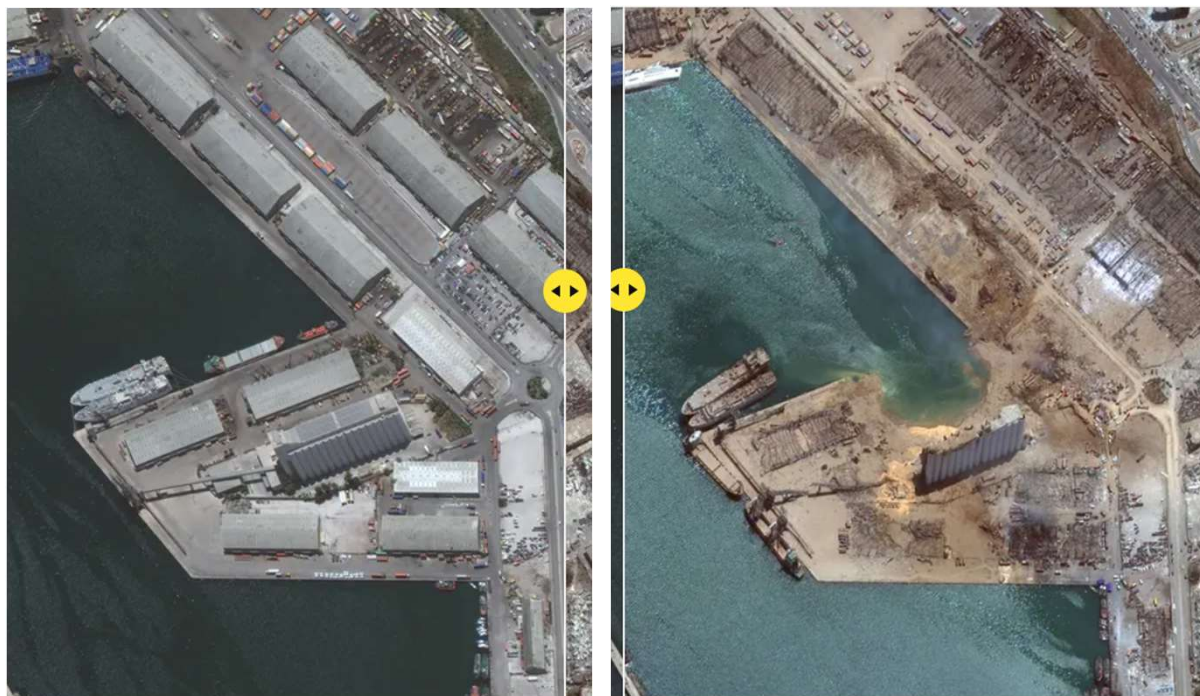
Increasing frequency and intensity of extreme weather events and slow-onset events

Inter-linked and cascading risks

Risk Assessment scenarios

Multi-sector, multi-hazard  
DRR strategies

# Regulation & governance



Beirut, Lebanon, August 2020, Ammonium nitrate explosion

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

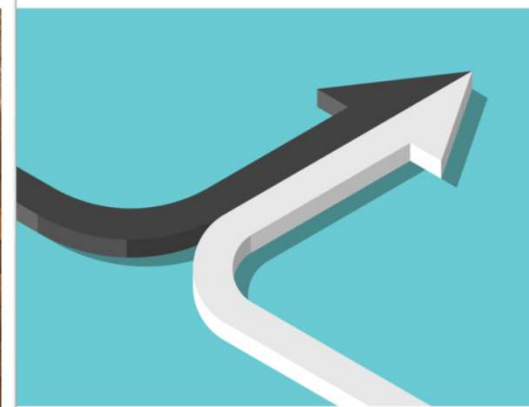




2. STRENGTHENING EXISTING **LEGAL  
INSTRUMENTS**  
AND PROGRAMMES FOR THE  
PREVENTION, PREPAREDNESS AND  
RESPONSE TO CHEMICAL  
ACCIDENTS

# Safety is $\neq$ 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**

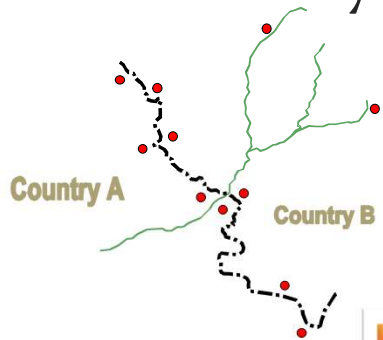


# Continuous efforts by gov't & industry

- **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!

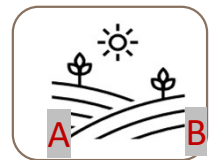
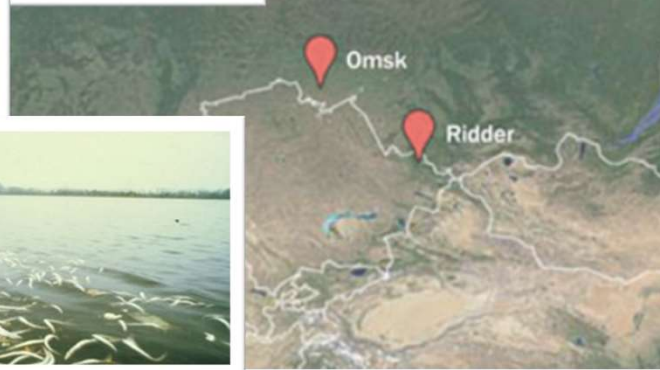


Sandoz accident in Schweizerhalle, Switzerland (1986)



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)



# UNECE Industrial Accidents Convention



Long-term strategy /  
Overall vision until 2030:

“Significantly increase industrial safety and reduce the risk of technological disasters by ensuring *its full implementation*, its wide recognition as a *legal instrument for risk reduction under the Sendai Framework and its contribution to achievement of the Sustainable Development Goals*”

## GAR

Global Assessment Report  
on Disaster Risk Reduction

2019

“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”

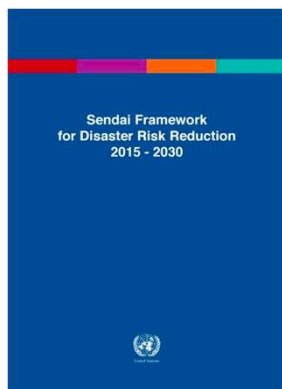
UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE  
COMMISSION ECONOMIQUE DES NATIONS UNIES POUR L'EUROPE  
ЕВРОПЕЙСКА ИКОНОМИЧЕСКА КОМИСИЯ  
ОРГАНИЗАЦИЯ ОБЩЕЕВРОПЕЙСКИХ НАЦИЙ

**Convention  
on the Transboundary Effects  
of Industrial Accidents**  
as amended on 19 March 2008

**Convention  
sur les effets transfrontières  
des accidents industriels**  
telle que modifiée le 19 mars 2008

**Конвенция  
о трансграничном воздействии  
промышленных аварий**  
с поправками от 19 марта 2008 года

UNITED NATIONS  
NATIONS UNIES  
ОРГАНИЗАЦИЯ ОБЩЕЕВРОПЕЙСКИХ НАЦИЙ



# 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

## 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

## Sub-regional workshop on industrial safety in Central Asia, 25-26

September 2018, Almaty, Kazakhstan

Photos credit: UNECE



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

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



## 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

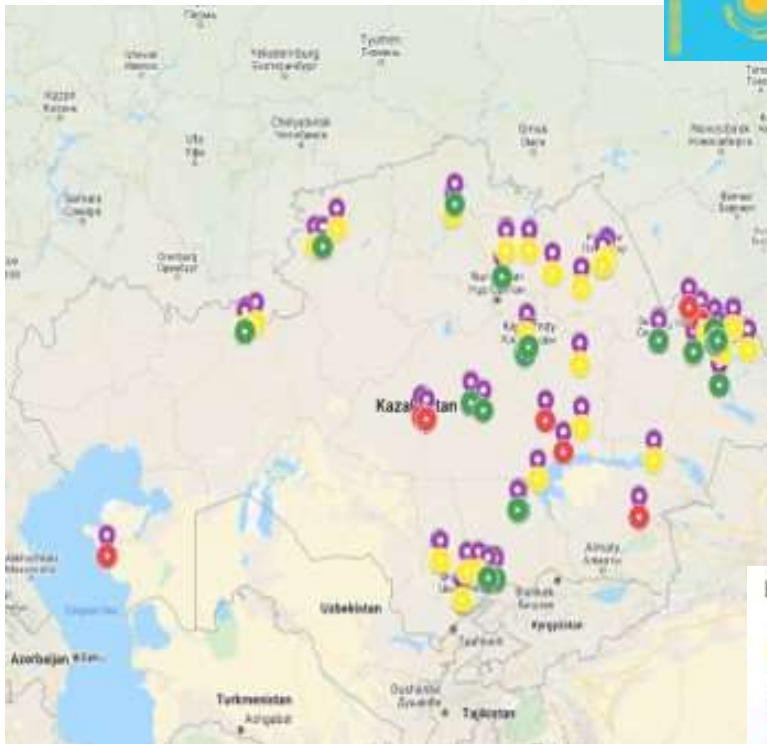
*Promoting investments in preventive measures, which cost less than remedying the consequences of disasters.*

### 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...

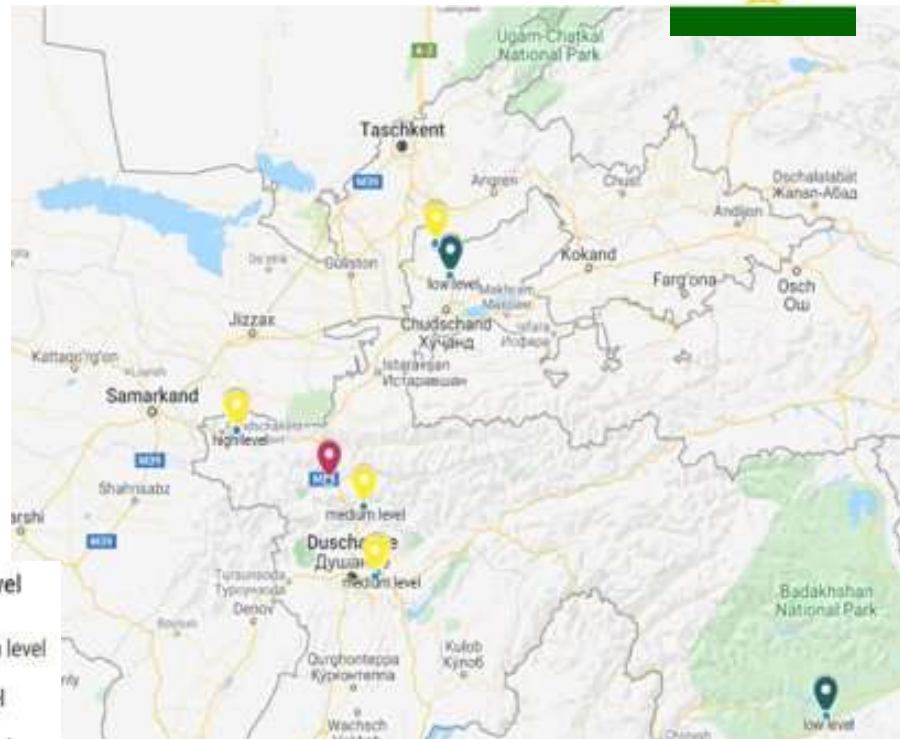
Hazard map of TMFs of Kazakhstan



Hazard level

-  medium level
-  low level
-  high level

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

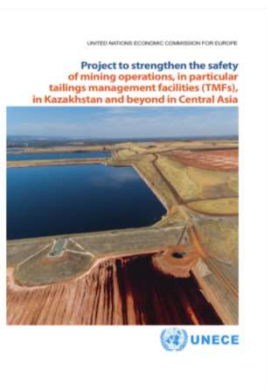


Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Swiss Confederation

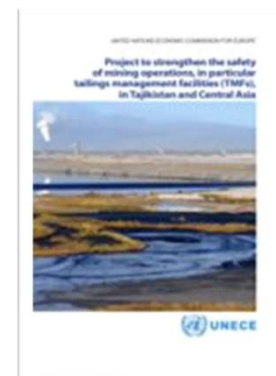
Federal Office for the Environment FOEN

# 1. Understanding disaster risk...impacts across borders



7 TMFs capable of causing transboundary effects in Kazakhstan

4 TMFs capable of causing transboundary effects in Tajikistan



Nº	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 "Vostoksvetmet"	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	Irtys River
104	Sludge storage nr. 2 of JSC "Aluminium of Kazakhstan"	Pavlodar region, Pavlodar city, industrial zone "Vostochnaya", building 66	11.52	Irtys River
105	Sludge storage nr. 3 of JSC "Aluminium of Kazakhstan"	Pavlodar region, Pavlodar city, industrial zone "Vostochnaya", building 67	11.00	Irtys River
107	Ash sludge storage nr. 1, Aksu Ferroalloy Plant	Pavlodar region, Aksu city	10.60	Irtys River
108	Ash sludge storage nr. 2, Aksu Ferroalloy Plant	Pavlodar region, Aksu city	10.95	Irtys River

Nº	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

# 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



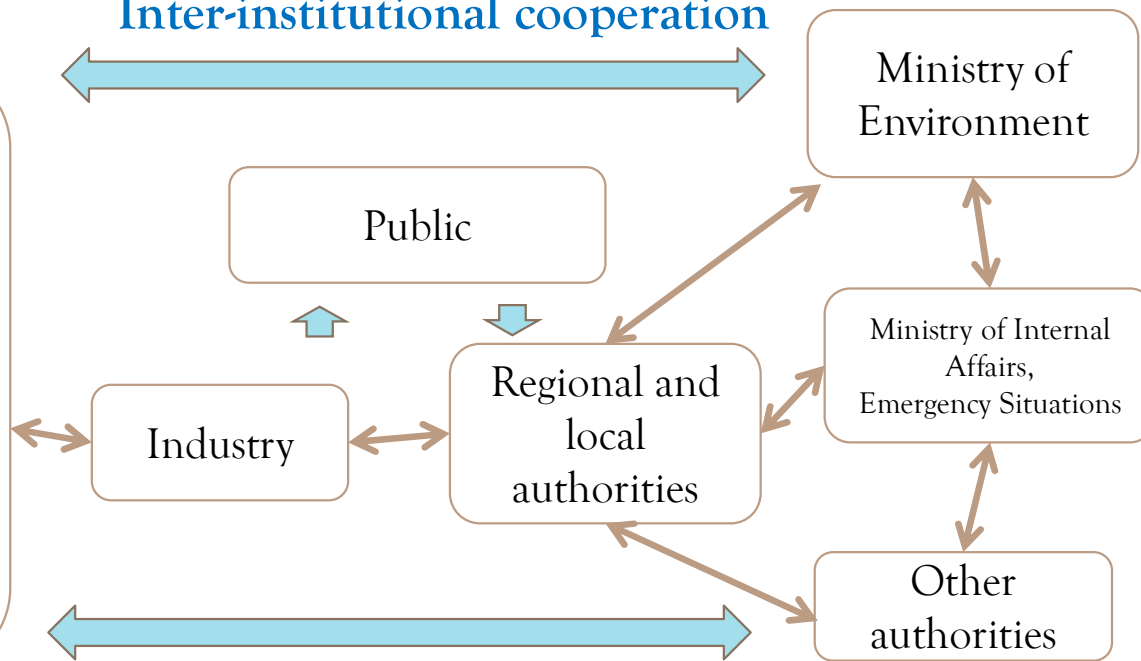
Prevention

Readiness

Response

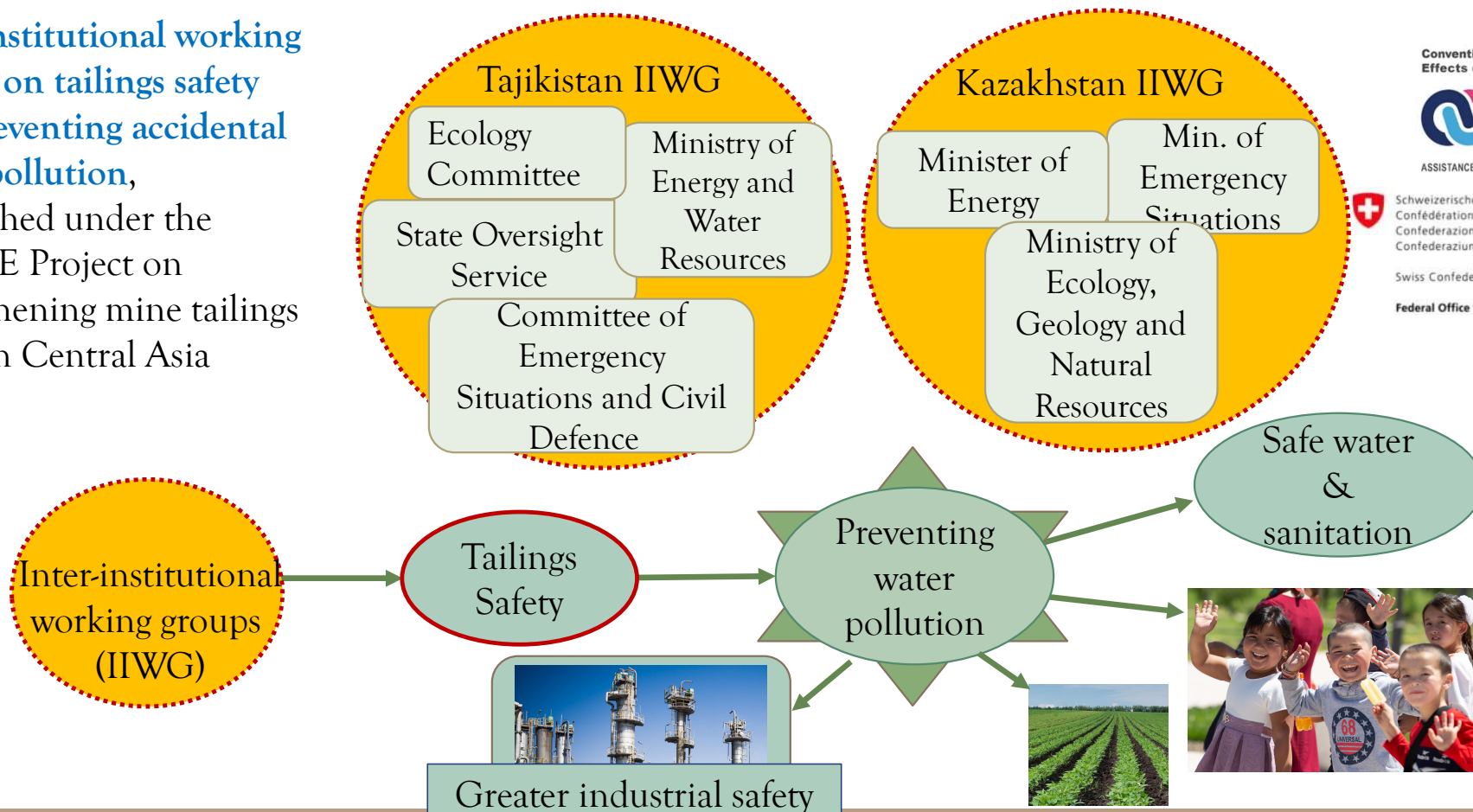


### Inter-institutional cooperation

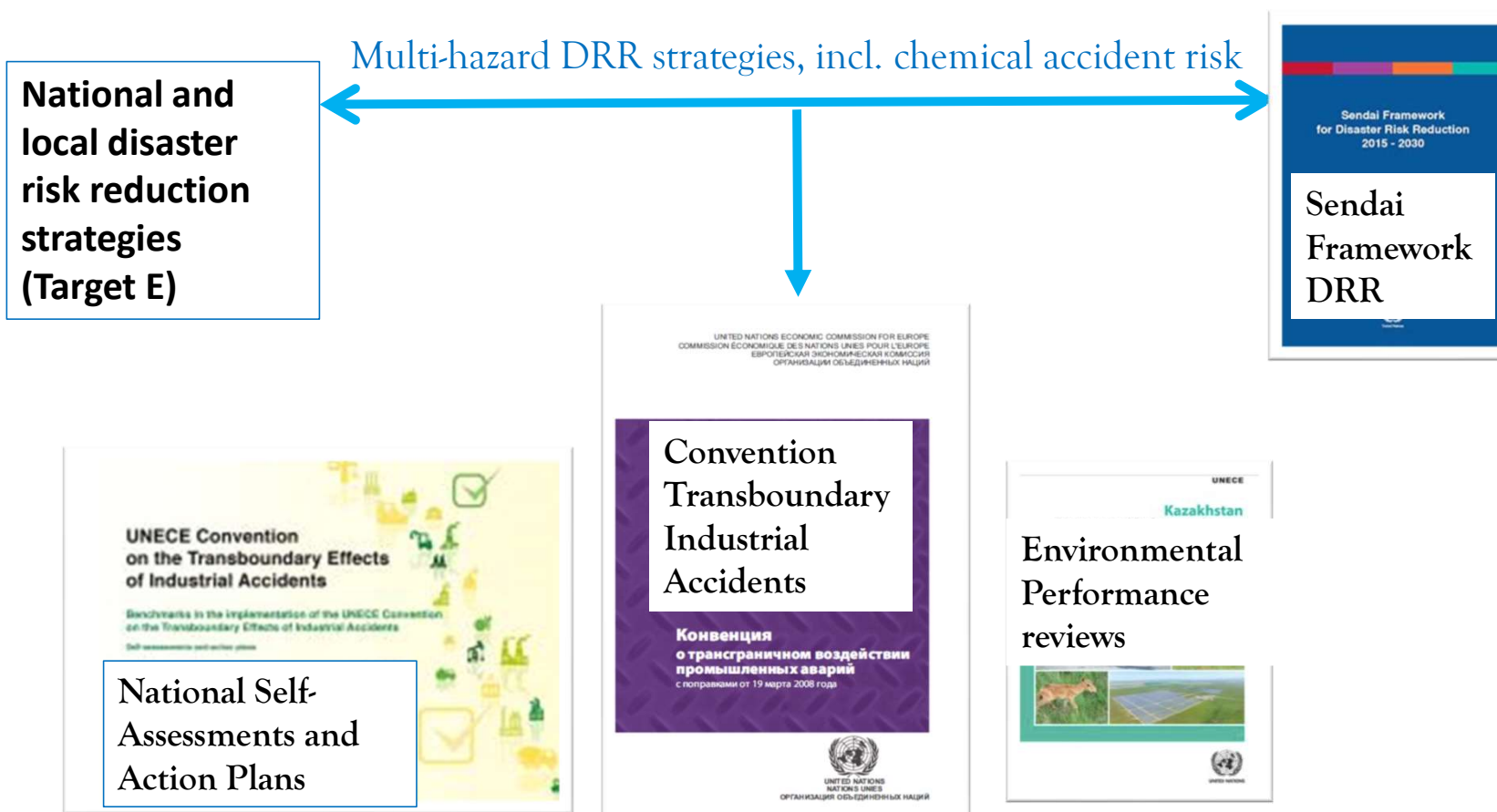


# 2. Strengthening risk governance

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





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

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

- 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**



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

# 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



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BESCHÄFTIGUNGSKOMMISSION FÜR EUROPA  
ОТДЕЛЕНИЕ ОБЩЕЕВРОПЕЙСКИХ НАЦИЙ



*Thank you for your attention!*

For more information please visit:

Industrial Accidents Convention: [www.unece.org/env/teia](http://www.unece.org/env/teia)

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

or contact:

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