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ENVIRONMENTAL LAW AND POLICY

1

Lecture 7. TRANSBOUNDARY POLLUTION

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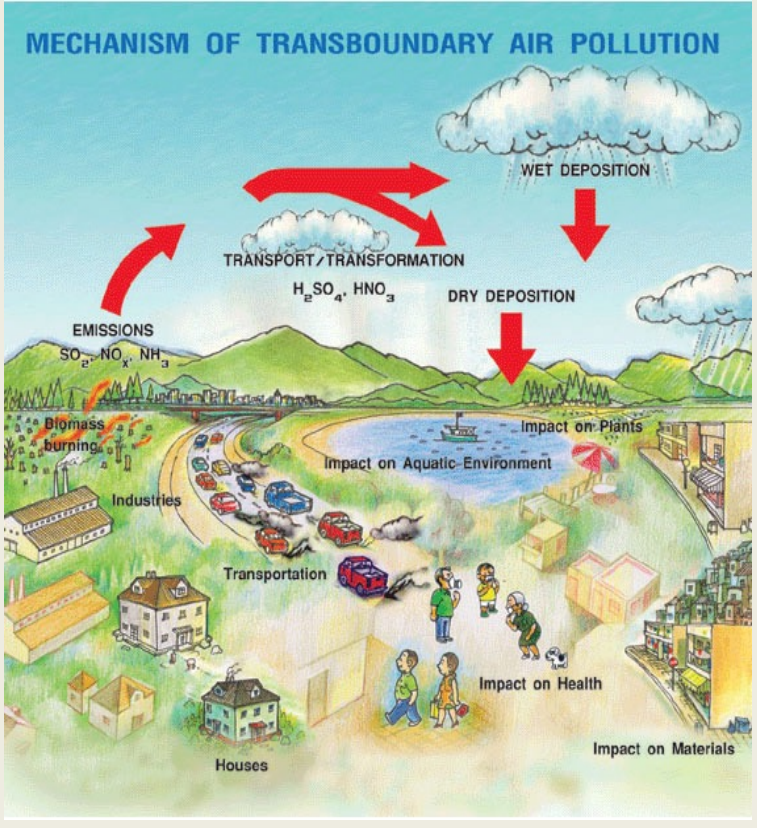
What is transboundary pollution?

- Transboundary pollution is the pollution that originates in one country but is able to cause damage in another country's environment, by crossing borders through pathways like water or air.
- One of the problems with transboundary pollution is that can carry pollution away from a heavy emitter and deposit it onto a nation whose emissions are relatively low.

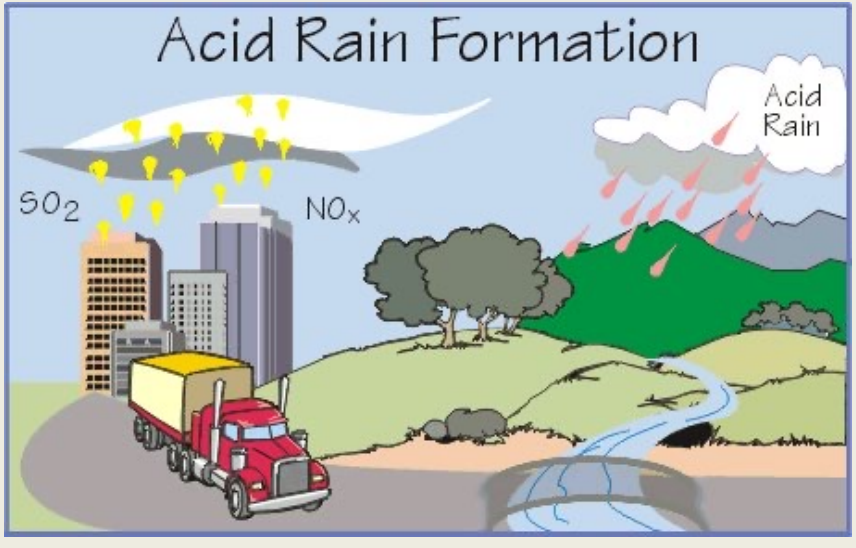


How does pollutant travel?

- Wind: contaminants will travel along the prevailing wind.
- River: the flow of rivers may carry large deposits of contaminants.
- Ocean: waves and currents.
- Grasshopper Effect: contaminants may attach to dust and move in the atmosphere, precipitate and evaporate again.
- Seabirds: help marine pollutants to travel inland through food web.

An example: **Acid rain**

- Acid rain is known as a transboundary pollutant because it can be blown from one country to another.
- Because it is a transboundary polluter, acid rain tends to be worst in the direction of the prevailing wind from major industrial locations.



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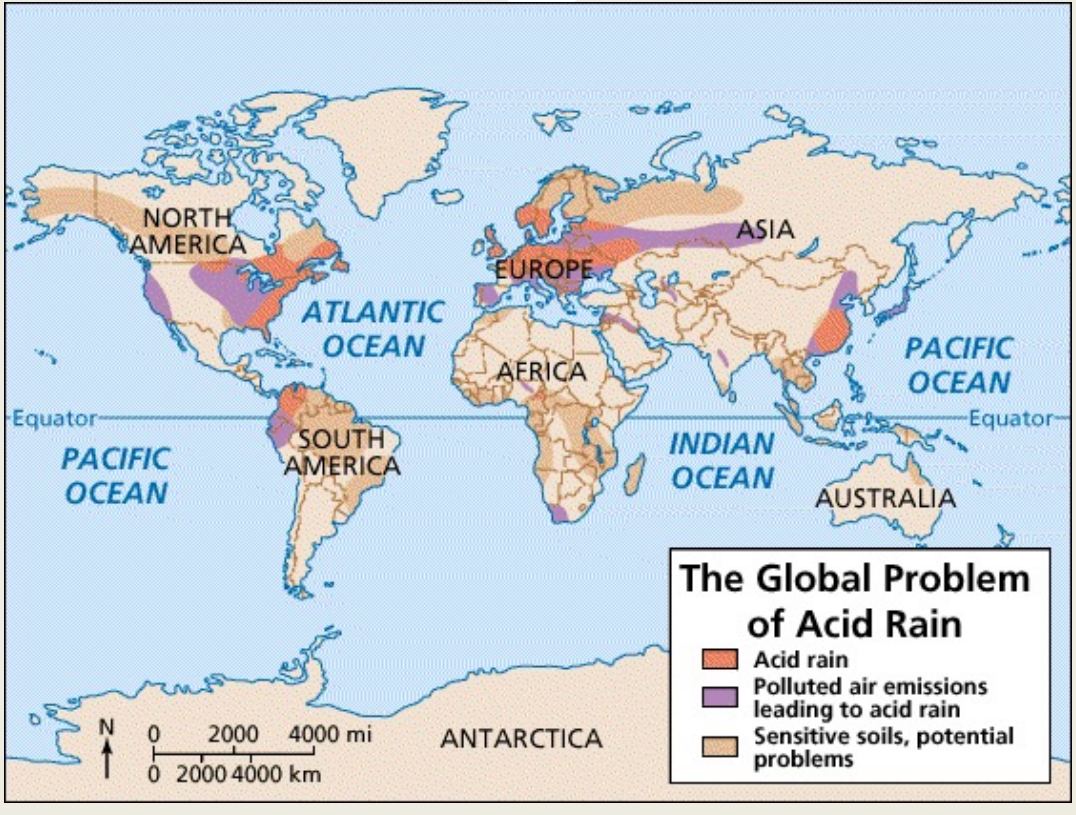
An example: **Acid rain**



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An example: **Acid rain**

- Acid rain was first discovered in Manchester, UK in 1852, but it was not properly studied until the 1960's. Acid rain can take two forms, wet deposition (when pollutants mix with rain water and fall to the ground as acidic precipitation) and dry deposition (when pollutants and particulates fall to the ground without mixing with rain water).
- Sulphur dioxide and nitrous oxides are the two main chemicals that react with water to make acid rain. Traditionally sulphur dioxide has been the biggest contributing chemical, accounting for about two thirds and nitrous oxides the other third. However, in most areas of the world the importance of sulphur dioxide is decreasing and nitrous oxides increasing.

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An example: **Acid rain**

- Acid rain can cause many problems including:
  - Damage to buildings,
  - Metals dissolved by acid rain can be washed into water courses,
  - Vegetation can be damaged and growth reduced,
  - Lakes and rivers can become acidic harming the ecosystem and aquatic life,
  - Soil acidity increases, nutrients are washed away but aluminum is released, causing trees hard to take up water

A virtual tree-graveyard of Norway spruce trees in Poland bears the scars of acid rain. Caused when rain droplets absorb air pollution like sulfur and nitrogen oxides, acid rain weakens trees by dissolving nutrients in the soil before plants can use them.

An example: **Acid rain**

An example: **Acid rain**

- **WHAT CAN BE DONE?**
  - reducing the amount of fossil fuels burnt or at least burning coal with a lower sulphur content,
  - conserving energy,
  - using a greater proportion of renewable energy,
  - using more public transport and cleaner forms of transport,
  - removing pollution at source with the use of scrubbers.

Convention on Long-Range Transboundary Air Pollution

ADOPTION: 1979

ENTRY TO FORCE: 1983

An international treaty was born…

- In the 1960s, scientists confirmed the link between sulphur and the acidification of Scandinavian Lakes and forests.
- In 1979 a meeting was called within the framework of the United Nations Economic Commission for Europe (UNECE) for the Protection of the Environment, to address this and related issues. This led to the signature of the Convention on Long-Range Transboundary Air Pollution by 34 governments, including Canada, and the European Community in Geneva in 1979.
- The Convention came into force in 1983 and has been followed by 8 protocols, laying down the general principles of international cooperation for air pollution abatement and setting up an institutional framework which has since brought together research and policy.

Convention on Long-Range Transboundary Air Pollution

- Over the years, the number of substances covered by the Convention and its protocols has been gradually extended, notably to ground-level ozone, persistent organic pollutants, heavy metals and particulate matter.
- The Convention has substantially contributed to the development of international environmental law and has created the essential framework for controlling and reducing the damage to human health and the environment caused by transboundary air pollution.
- It is a successful example of what can be achieved through intergovernmental cooperation.

Convention on Long-Range Transboundary Air Pollution

- **"Air Pollution"** means the introduction by man, directly or indirectly, of substances or energy into the air resulting in deleterious effects of such a nature as to endanger human health, harm living resources and ecosystems and material property and impair or interfere with amenities and other legitimate uses of the environment, and "air pollutants" shall be construed accordingly;
- **"Long-range transboundary air pollution"** means air pollution whose physical origin is situated wholly or in part within the area under the national jurisdiction of one State and which has adverse effects in the area under the jurisdiction of another State at such a distance that it is not generally possible to distinguish the contribution of individual emission sources or groups of sources.

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Convention's fundamental principles

- The Contracting Parties, taking due account of the facts and problems involved, are determined to **protect man and his environment against air pollution** and shall endeavour to **limit** and, as far as possible, **gradually reduce and prevent** air pollution including long-range transboundary air pollution.

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Emission reductions

- The result of this collective effort has been remarkable: emissions of a series of harmful substances have been reduced by 40 to 80% since 1990 in Europe. In particular, the decrease in sulphur emissions has led to healthier and forest soils. The drop in emissions has reduced the deposition of acidifying compounds to levels below critical loads of acidity in large parts of Europe.

- Nitrogen emissions have also been reduced, although to a lesser extent than sulphur emissions.
- The efforts to reduce nitrogen oxides emissions led to a decrease in lead pollution. Lead pollution levels in the UNECE countries were reduced by almost 80% between 1990 and 2012.

A common scientific understanding

- The Convention helps establish a common knowledge base including a scientific infrastructure aimed at joint monitoring and modelling programmes, including an extensive international network of scientists of various disciplines.
- In addition, the Convention has provided a platform for scientists and policymakers to exchange information which has led to innovative approaches creating mutual trust and learning.
- First protocols: focused on technologies to reduce emissions.
- Later protocols used an effects-oriented approach, aiming at the most cost-effective way to reach reduction targets: a substance-by-substance approach → a so-called **multi-pollutant-multi-effect** approach.

Convention on the Transboundary Effects on Industrial Accidents

ADOPTION: 1992

ENTRY TO FORCE: 2000

About the Convention

- Since the early 1990s the United Nations Economic Commission for Europe (UNECE) has concentrated its efforts on preventing industrial accidents and especially their transboundary effects in its region, which stretches from Canada and the United States of America in the west to the Russian Federation and Central Asia in the east.
- The aim of the Convention is to help its Parties to prevent industrial accidents that can have transboundary effects, to prepare for them and to respond to them. The Convention also encourages its Parties to help each other in the event of such an accident, to cooperate on research and development, and to share information and technology.

Major content

- **Prevention:**
  - Parties should identify the hazardous operations that take place within their borders but could have an effect abroad if an accident were to occur.
  - New projects should be sited in areas where the risks are minimal.
  - Past industrial accidents will be reported and analyzed so that lessons can be learnt from them in order to be able to prevent similar accidents from happening in the future.
- **Preparedness:**
  - The Convention outlines how Parties can maintain a high level of preparedness to respond to an industrial accident, especially if its effects spill over into another country.
  - Hazardous operations must have on-site and off-site contingency plans.
  - The local residents should be informed about what is going on.

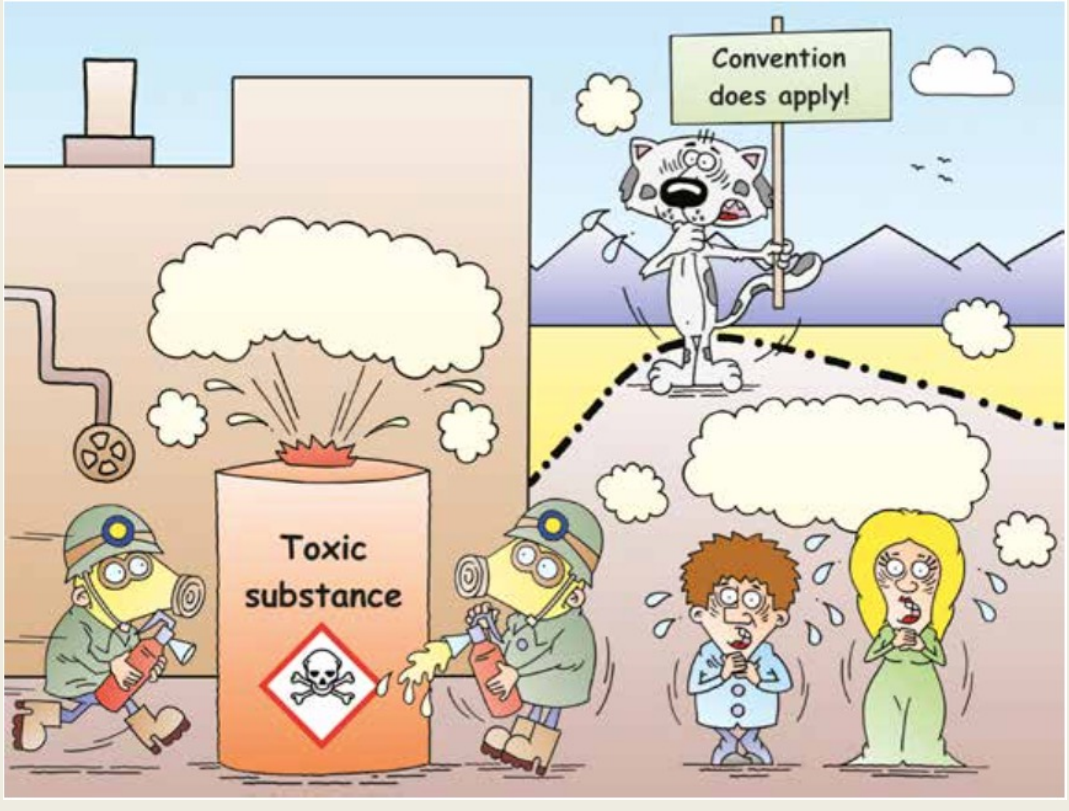
Major content

- **Response:**
  - If an industrial accident does occur, the Convention expects the Parties to take effective steps to minimize its effects, including those of a transboundary nature.
  - If several countries are affected by the accident, they should work together to ease its effects. They should also help one another if asked to do so.
- **Notification:**
  - Parties must be informed as soon as possible.
  - The Convention consequently calls on Parties to set up special notification systems. The UN/ECE Industrial Accident Notification System has been developed with this in mind and accepted by the Conference of the Parties. It includes forms for giving early warning, providing information and requesting assistance.

Major content

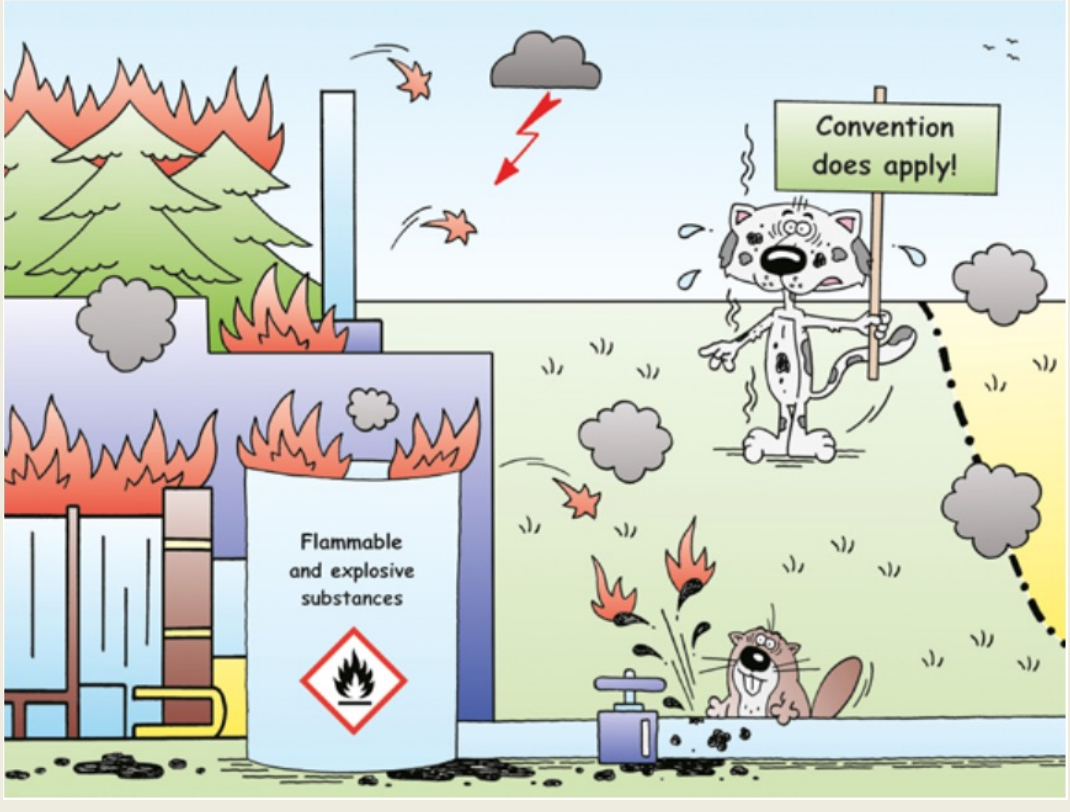
- **Competent authorities and points of contact:**
  - Each Party must designate or set up authorities specifically to deal with industrial accidents, following the Convention's entry into force. Other UN/ECE member countries have nominated focal points.
  - According to the Convention, Parties must also designate points of contact, to whom industrial accident notifications and requests for assistance must be addressed. The network of points of contact now comprises 35 countries and the European Union. The secretariat regularly updates this list; however, access to it is restricted.

When does this Convention apply?



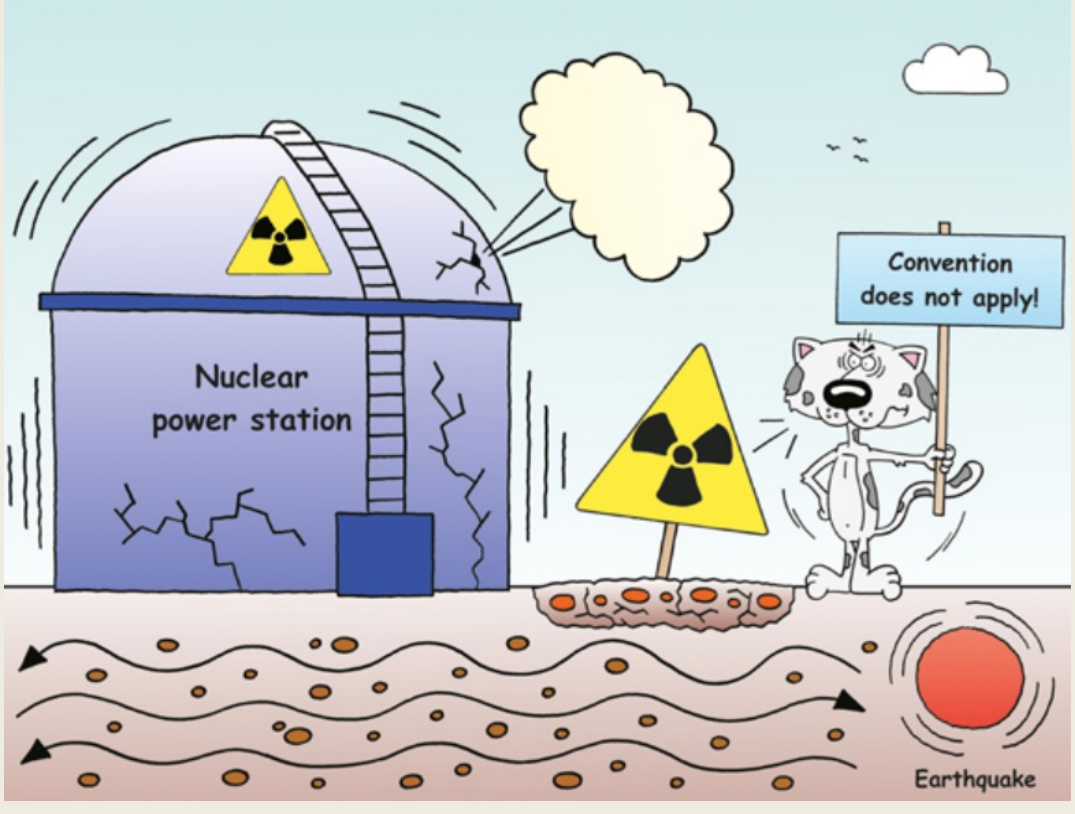
The **release of toxic substances** is one of the most common accidents covered by the Convention. The Convention requirements **apply to hazardous activities** where there are toxic substances in amounts sufficient to threaten human safety (Article 2).

When does this Convention apply?



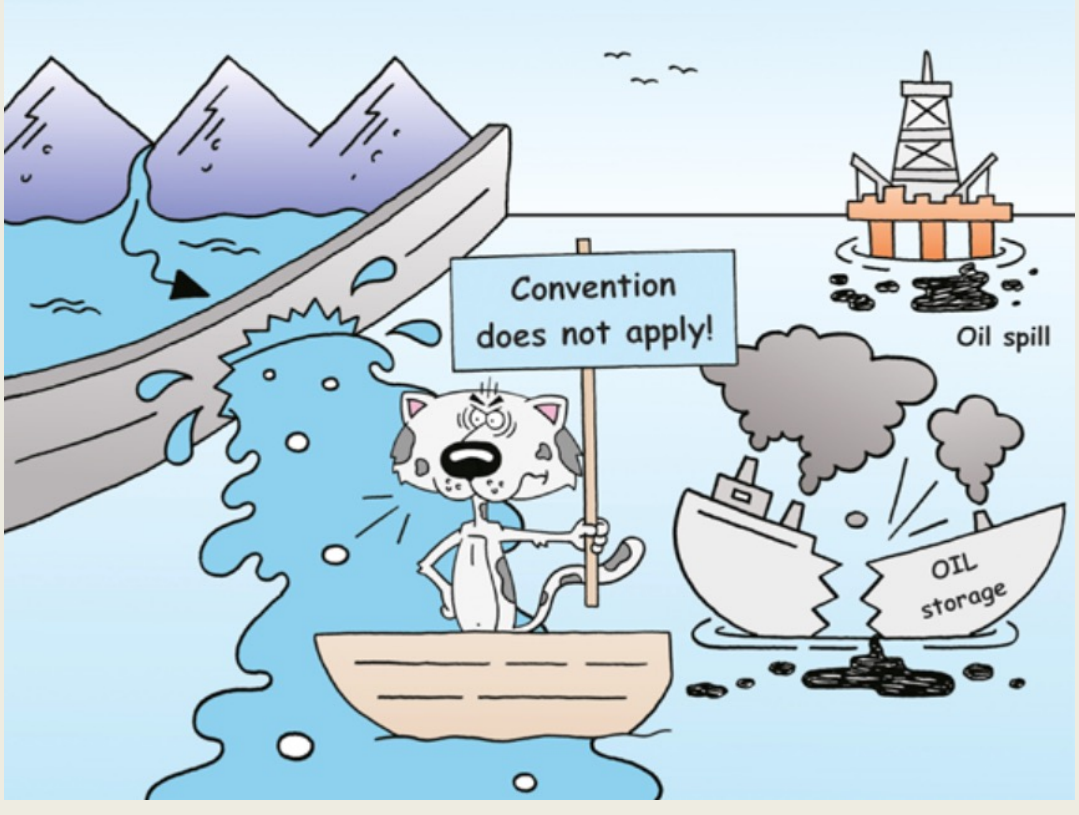
Another common accident covered by the Convention is an **explosion or large fire** that threatens human safety, property or the environment (Article 2). **Natural hazards** could pose a significant risk to industrial installations in some locations and these are also covered by the Convention, with certain exceptions.

When does this Convention not apply?



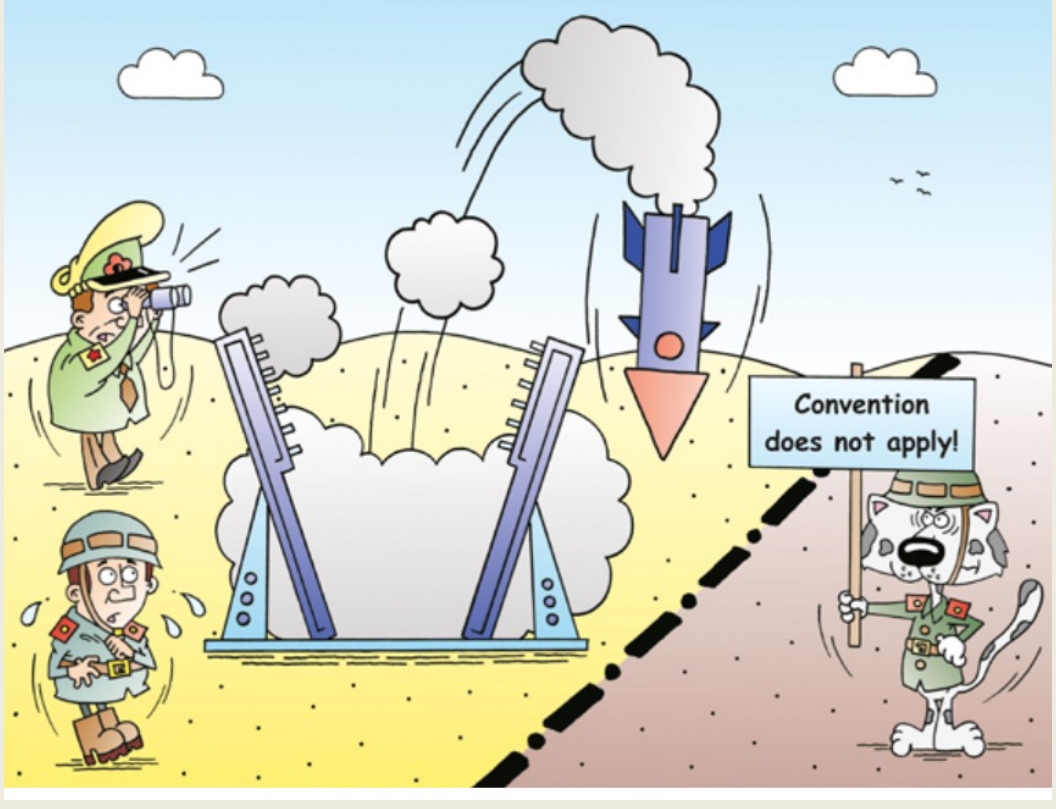
Accidents at nuclear power stations or involving radioactive waste are not covered by the Convention (Article 2, paragraph 2a), even if they are caused by natural disasters.

When does this Convention not apply?



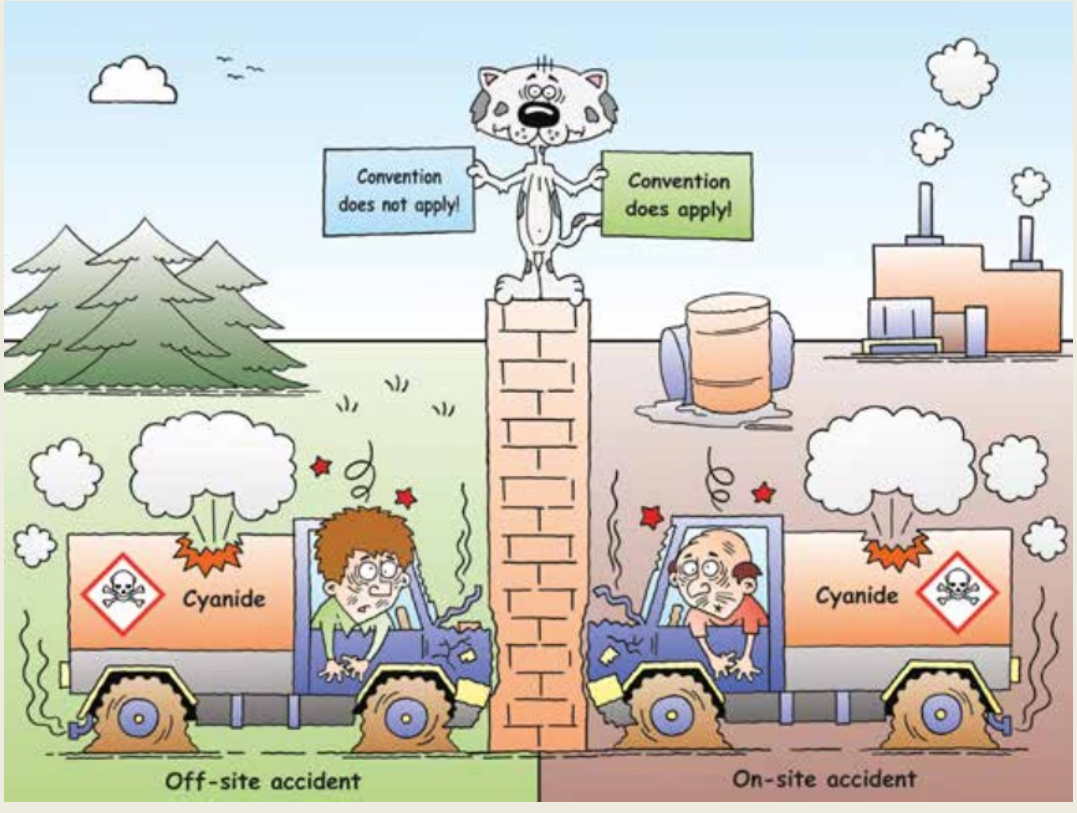
The Convention does not cover dam failures or spills of oil or other harmful substances at sea (Article 2, paragraphs 2c, 2f and 2g).

When does this Convention not apply?



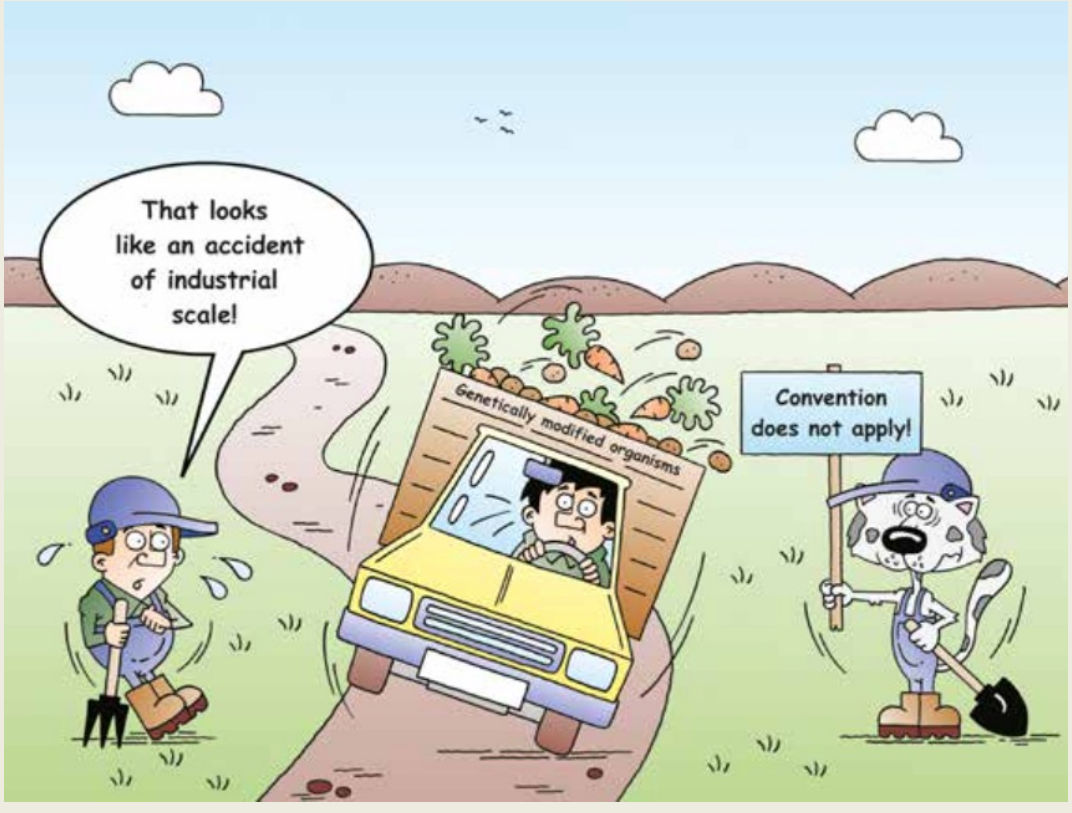
The Convention does not cover military accidents (Article 2, paragraph 2b).

When does this Convention not apply?



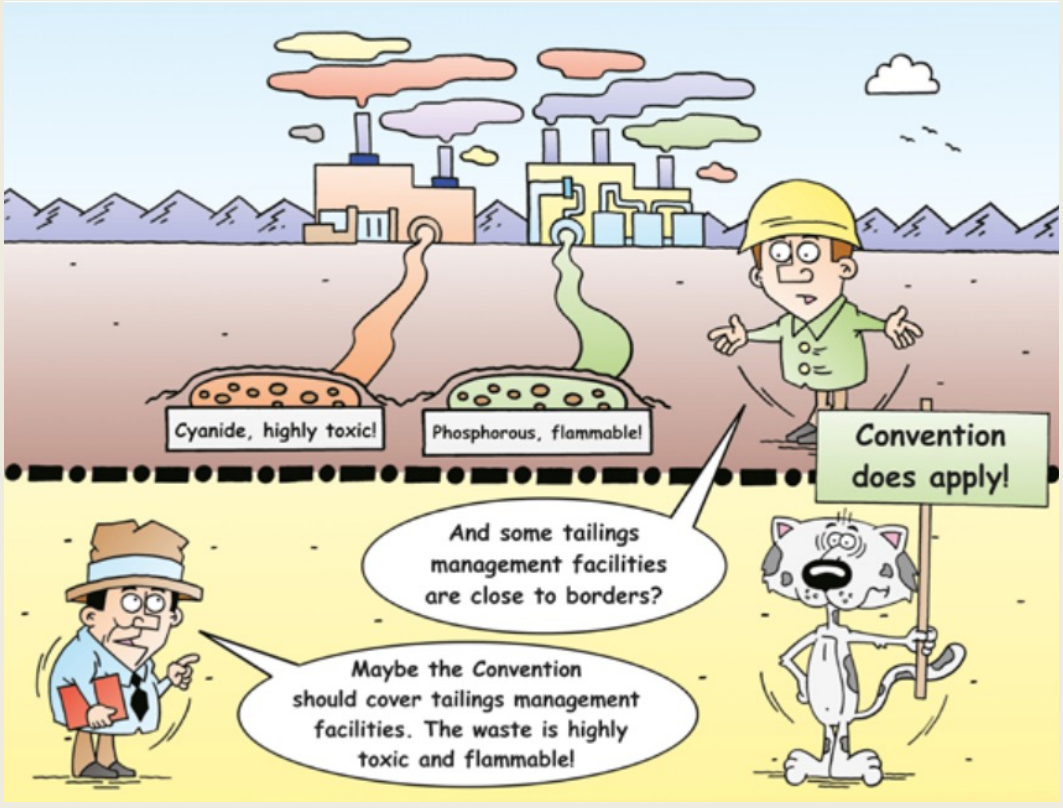
While the Convention does not cover land-based transportation accidents, it does cover transportation at the site of a hazardous activity (Article 2, paragraph 2d). The Convention covers the response to transportation accidents, even if these happened outside an industrial facility.

When does this Convention not apply?



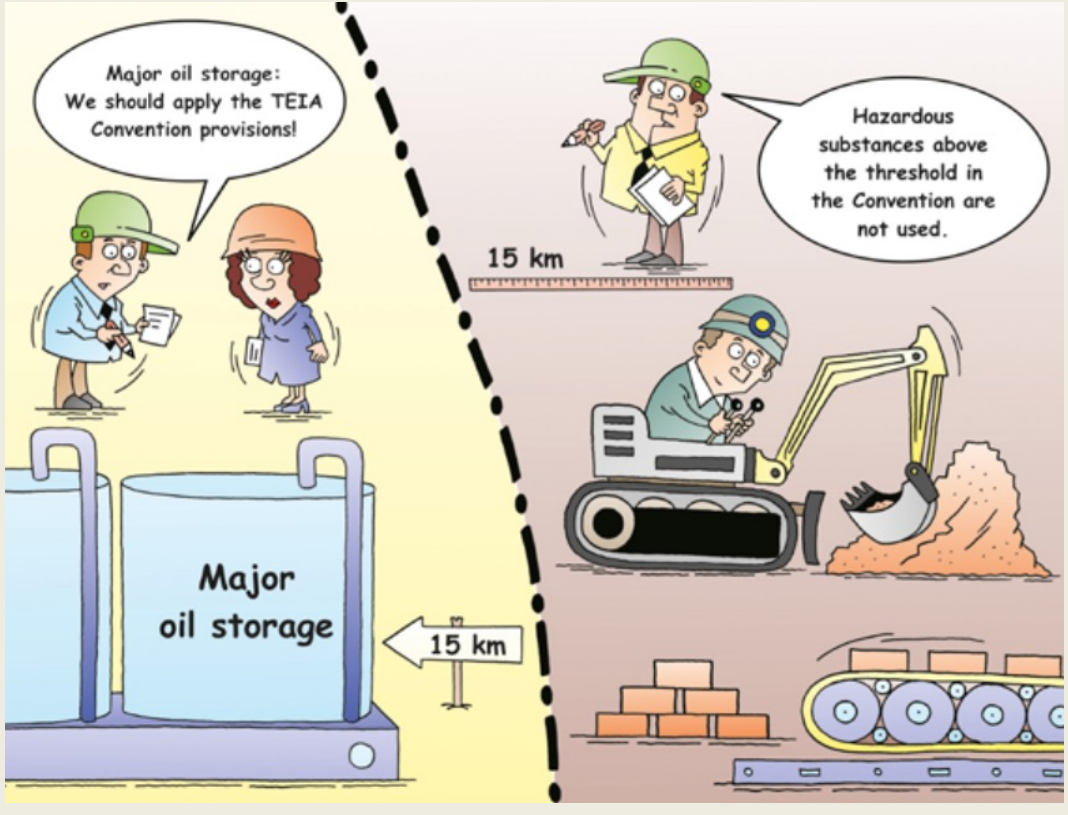
Even though the accidental release of genetically modified organisms may cause serious economic damage to farmers or human health in the long term, the Convention does not cover such releases (Article 2, paragraph 2e).

When does this Convention apply?



Tailing management facilities that are a part of an industrial facility and may be subject to accidents with transboundary implications.

How does the Convention help prevent industrial accidents?

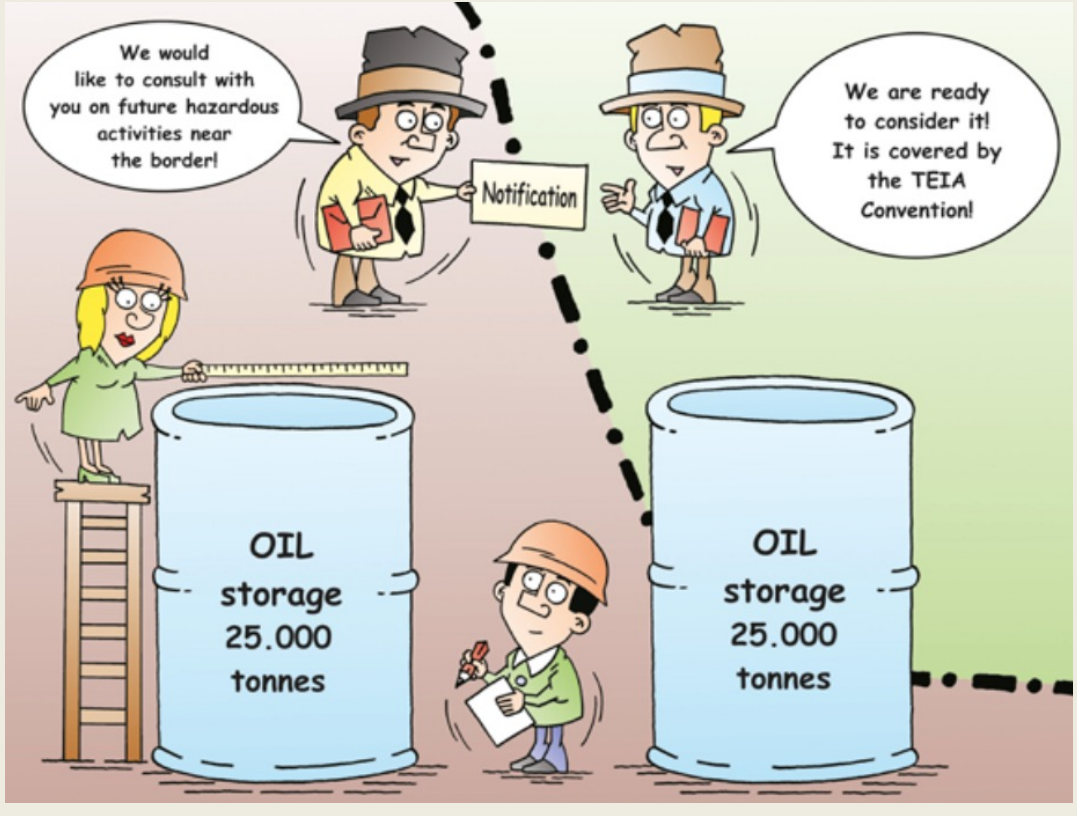


The proximity of industrial facilities to a border, within 15 km, does not necessarily mean that the Convention applies. The quantity and type of substances, listed in Annex I of the Convention, at a facility are important considerations, and many industrial activities are not covered by the Convention (Article 4).

How does the Convention help prevent industrial accidents?

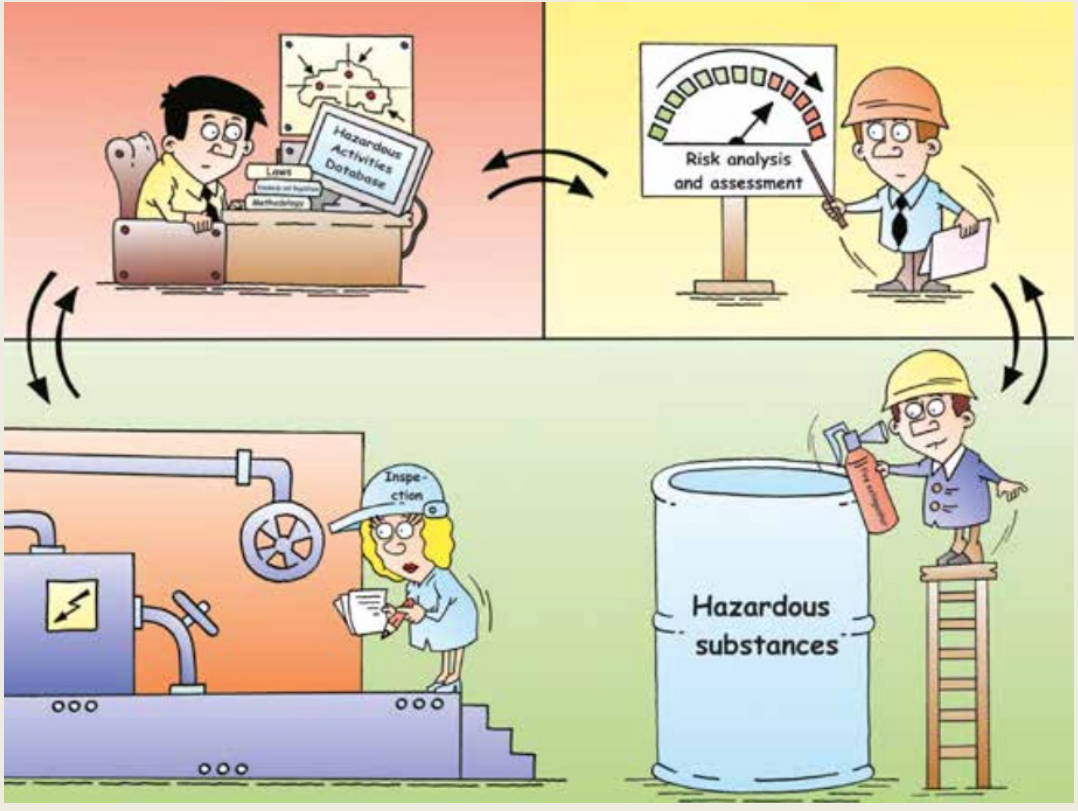
The Convention applies to industrial activities located on or nearby rivers when those activities involve hazardous substances that meet the Convention's criteria for quantity and when the substances may reach the border within 48 hours. Countries can issue their own regulations prescribing the requirements for industrial activities not covered by the Convention (Article 4).

How does the Convention help prevent industrial accidents?



The countries are responsible for identifying existing or proposed hazardous activities in their jurisdictions, and for notifying potentially affected countries of any such activities (Article 4). Together countries can come to the mutual understanding if the industrial activity falls under the Convention or not.

How does the Convention help prepare industrial accidents?



Prevention requires officials to develop legal frameworks and regulations and to maintain records and databases. Qualified professionals evaluate risk and develop action plans. Technical experts apply good practices, provide education and training to those engaged in hazardous activities and periodically inspect facilities. (Article 6).

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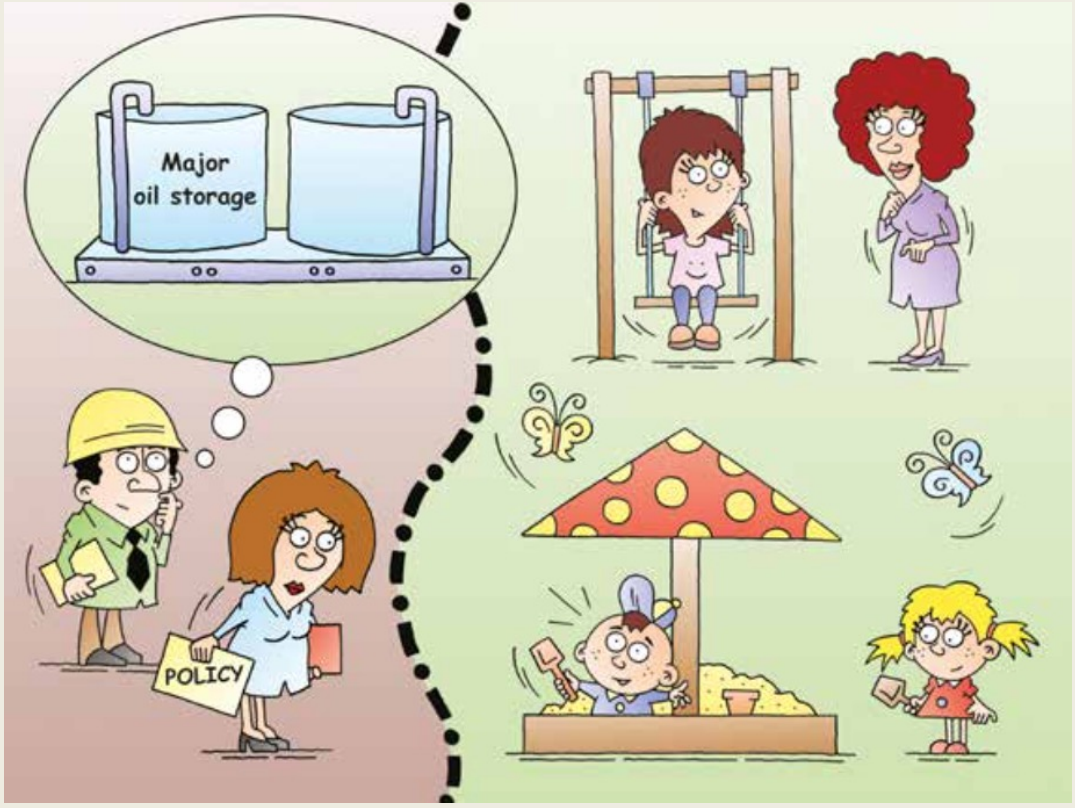
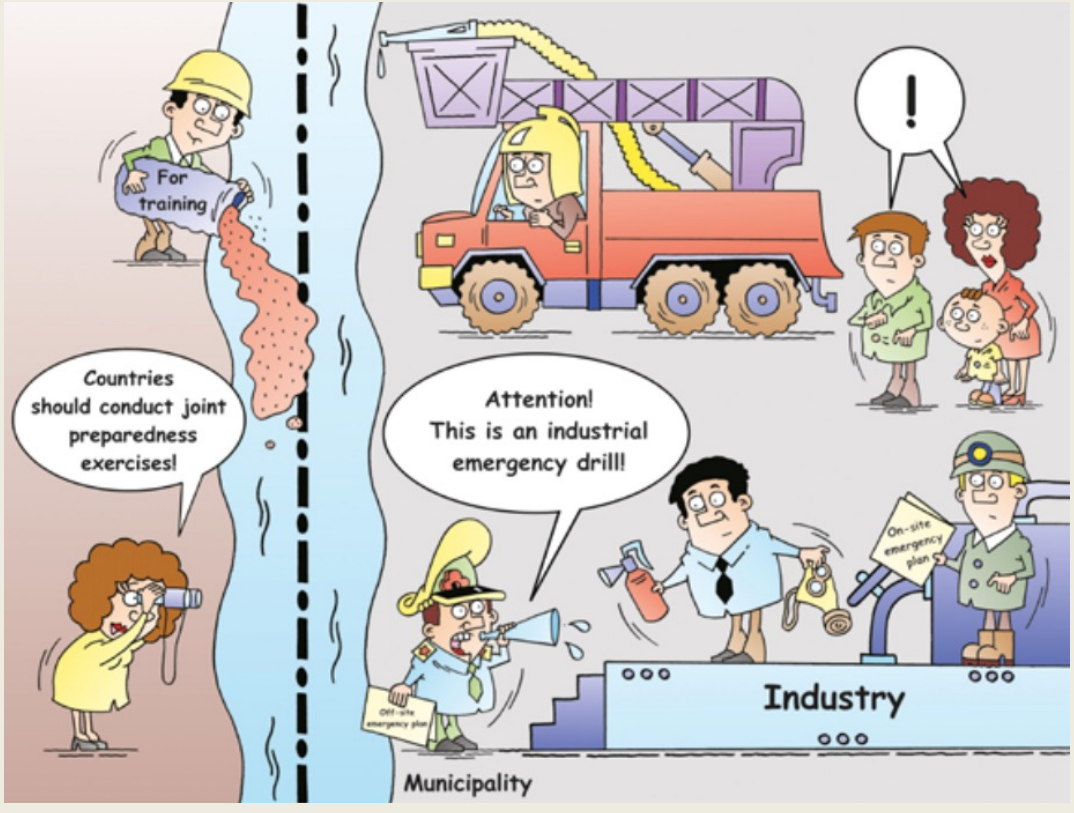
How does the Convention help prepare industrial accidents?



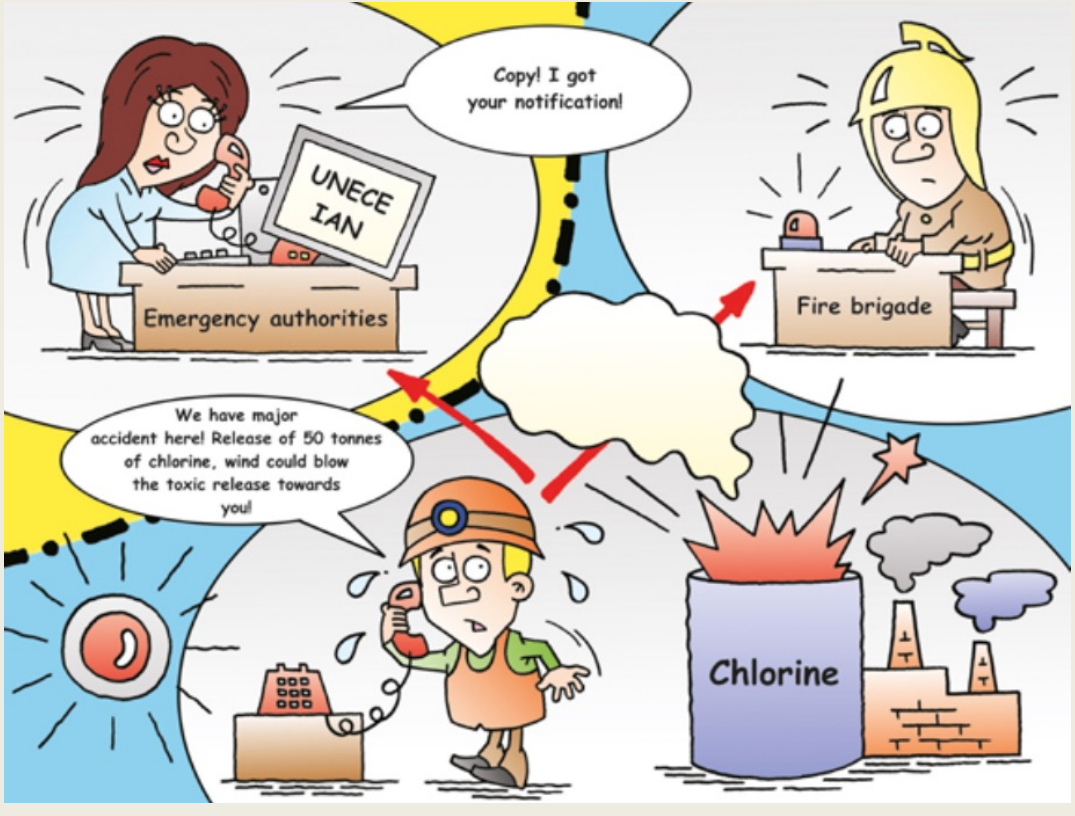
The Convention encourages countries to establish policies for the siting of hazardous activities in ways that minimize the risks of all affected Parties. Similarly, the Convention encourages affected Parties to establish policies that minimize the risks related to significant developments in areas potentially affected by an industrial accident (Article 7).

How does the Convention help respond to industrial accidents?



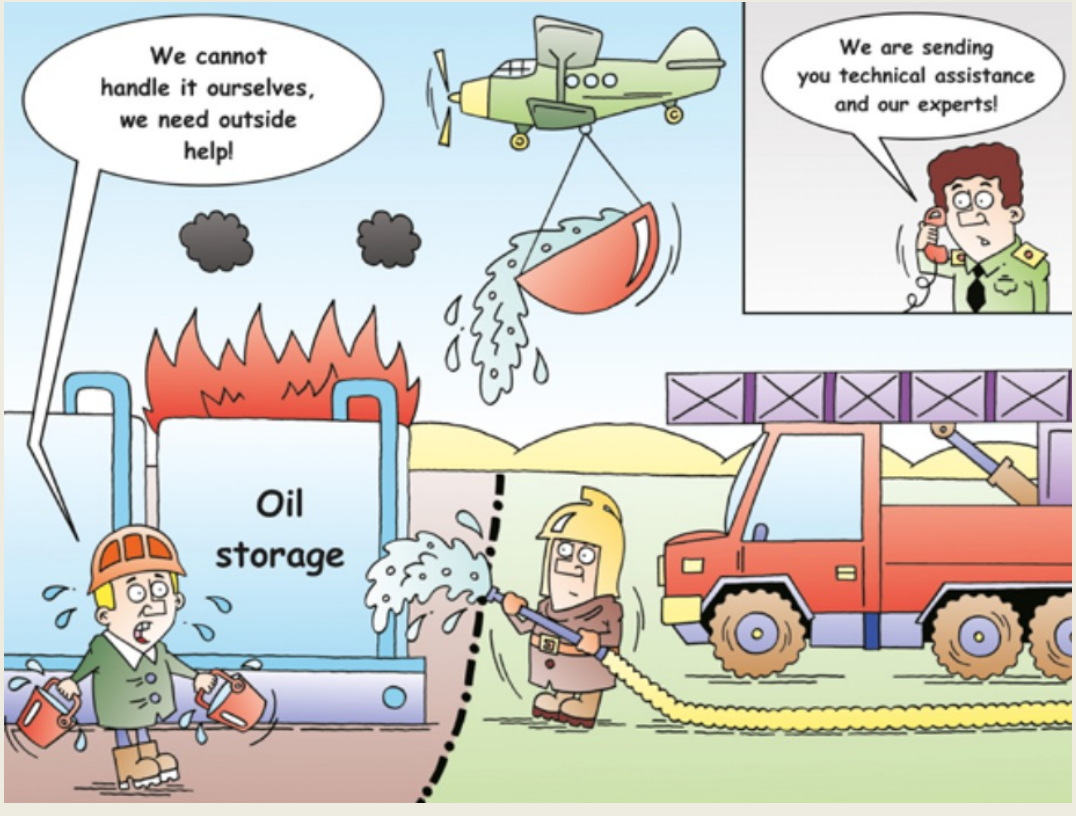
The member countries of the Convention are responsible for maintaining emergency preparedness and for developing on-site and off-site contingency plans to prevent and minimize transboundary effects of industrial accidents. Neighbouring countries make their plans available to each other, try to make the plans compatible and sometimes develop joint plans (Article 8).

How does the Convention help respond to industrial accidents?



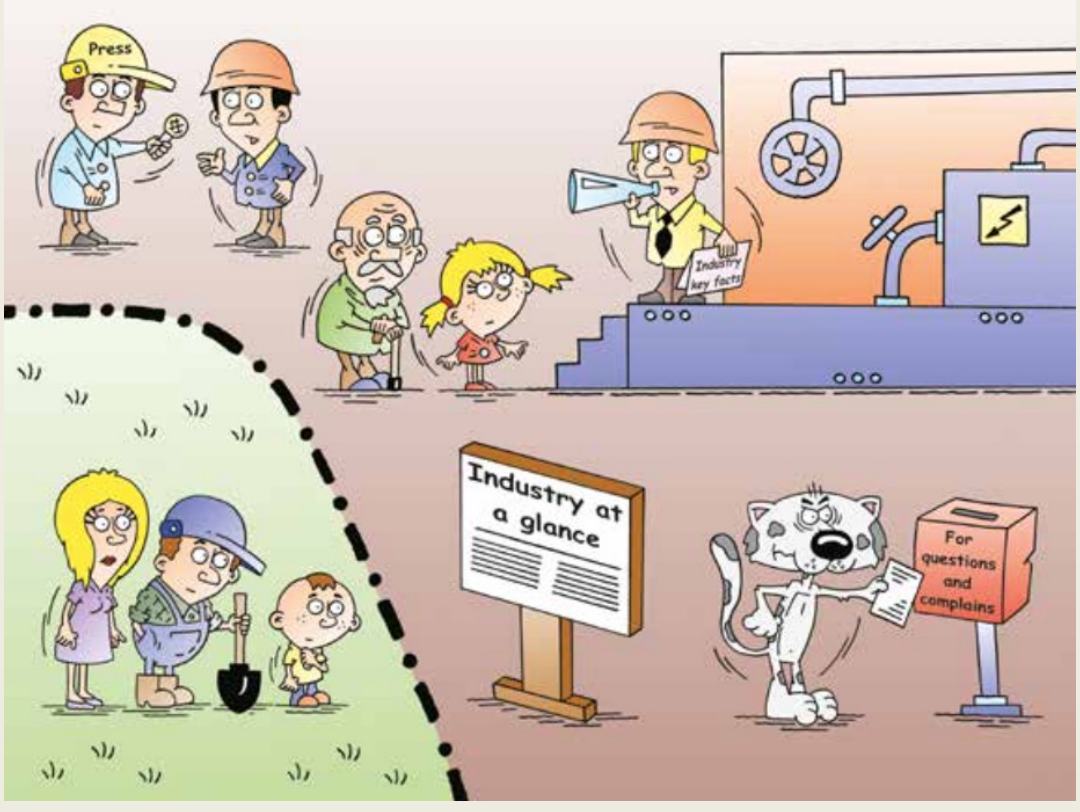
The Convention encourages countries to set up financial and technical plans and procedures for mutual assistance. These mutual assistance plans are especially helpful when one country has special expertise or technology, and when two or more countries share a common resource such as a lake, a river or a forest (Article 12).

How does the Convention help respond to industrial accidents?



In the event or imminent threat of an industrial accident with transboundary implications, countries use established industrial accident notification system to alert other affected countries, and all those concerned activate their contingency plans (Article 10).

When else does the Convention facilitate?



The public may petition industry to consider its concerns. Industry may use such means as the mass media, posters, special hearings and regular public reporting to communicate the risks to the public, and should take specific measures for vulnerable groups as the elderly, the disabled and the young (Article 9).

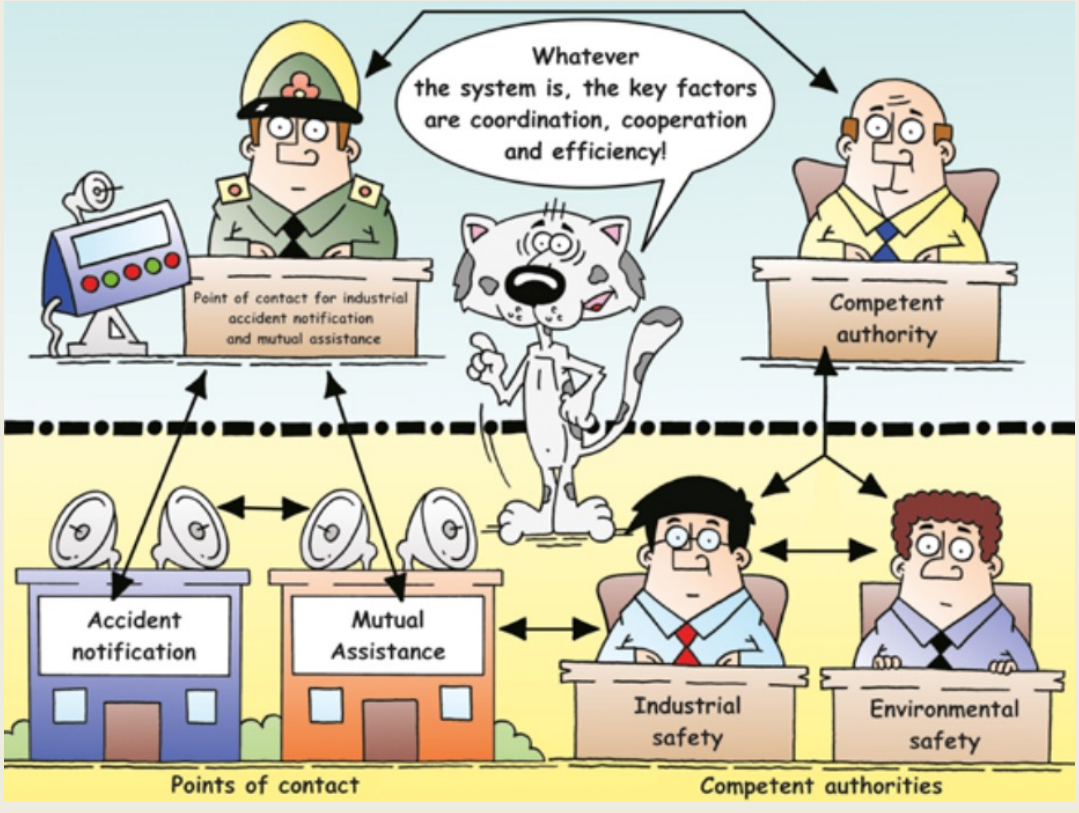
When else does the Convention facilitate?

Exchange of information

Exchange of technology and experience

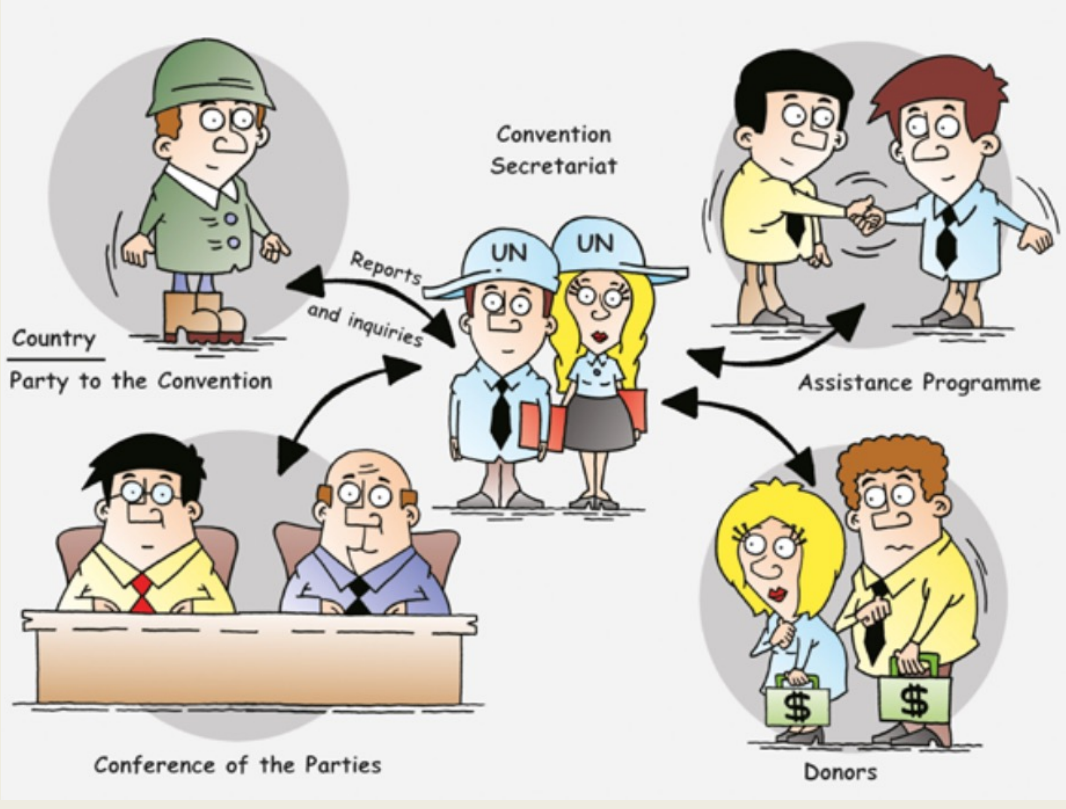
The exchange of information, experience and technology helps the countries understand each other's regulations and specific circumstances, and encourages the adoption of new technology and best practices (Articles 15 and 16).

What are responsibilities of Parties?



Countries appoint one or more competent authorities – usually ministries associated with the environment, disasters, industrial safety or human health – to help implement the Convention, and designate points of contact for notification of accidents and for mutual assistance. Non-Parties to the Convention may find this structure useful (Article 17).

What are responsibilities of Parties?



The responsibility for implementation rests with the countries, the Conference of the Parties and the secretariat (Article 23). The Convention's Assistance Programme and donors offer important support.

THANK YOU !

ANY QUESTION?