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ENVIRONMENTAL LAW AND POLICY

Lecture 8. Basel Convention on the Control of Transboundary
Movements of Hazardous Wastes and their Disposal

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Characteristic Wastes

- ▶ A hazardous waste characteristic is a property which, when present in a waste, indicates that the waste poses a sufficient threat to merit regulation as hazardous.
- ▶ Basically, there are four hazardous waste characteristics:
 - ▶ ignitability,
 - ▶ corrosivity,
 - ▶ reactivity and
 - ▶ toxicity.

Ignitability

- ▶ Wastes that are hazardous due to the ignitability characteristic include liquids with flash points below 60° C, non-liquids that cause fire through specific conditions, ignitable compressed gases and oxidizers.



Corrosivity

- ▶ Wastes that are hazardous due to the corrosivity characteristic include aqueous wastes with a pH of less than or equal to 2, a pH greater than or equal to 12.5 or based on the liquids ability to corrode steel.



Corrosive

Reactivity

- ▶ Wastes that are hazardous due to the reactivity characteristic may be unstable under normal conditions, may react with water, may give off toxic gases and may be capable of detonation or explosion under normal conditions or when heated.



Toxicity

- ▶ Wastes that are hazardous due to the toxicity characteristic are harmful when ingested or absorbed. Toxic wastes present a concern as they may be able to leach from waste and pollute groundwater. The toxicity of a waste is determined by the Toxicity Characteristic Leaching Procedure (TCLP)



Some key hazardous wastes

- ▶ **Arsenic:** Used as an alloy in lead shot and electrical circuits, as a pesticide, and as a preservative for wood. Highly toxic and carcinogenic.
- ▶ **Asbestos:** Once widely employed in construction primarily for insulation. Still used in gaskets, brakes, roofing and other materials. When inhaled can cause lung cancer and mesothelioma.
- ▶ **Cadmium:** Used in batteries, pigments, metal coatings, and plastics. Exposure risks include workplace activities, cigarette smoke and contaminated foods. Damages the lungs, causes kidney disease, and irritates the digestive tract.

Some key hazardous wastes

- ▶ **Chromium:** Combines easily with other metals to form alloys such as stainless steel. Used as a rust-resistant coating on other metals, a pigment in paint, and in wood preservatives and liquids for tanning hides.
- ▶ **Clinical wastes:** Hospitals must dispose of large quantities of syringes, medication bottles and other materials that can be infectious and spread pathogens and harmful micro-organisms.
- ▶ **Cyanide:** A poison that in large doses can cause paralysis, convulsions and respiratory arrest. Chronic exposure to low doses can cause fatigue and weakness. Compressed hydrogen cyanide gas is used to exterminate rodents and insects on ships and to kill insects on trees.

Some key hazardous wastes

- ▶ **Lead:** Used in the production of batteries, ammunition, paints, metal products such as solder and pipes, and devices to shield X-rays. If ingested or inhaled can harm the nervous system, kidneys, and reproductive system.
- ▶ **Mercury:** Used to produce chlorine gas, caustic soda, thermometers, dental fillings, and batteries. Exposure occurs through contaminated air, water and food and through dental and medical treatments. High levels may damage the brain, kidneys, and developing fetuses.
- ▶ **PCBs:** Compounds used in industry as heat exchange fluids, in electric transformers and capacitors, and as additives in paint, carbonless copy paper, sealants and plastics. Pose risks to nervous systems, reproductive systems, immune systems, and livers

Some key hazardous wastes

- ▶ POPS: Persistent organic pollutants are a class of chemicals and pesticides that persist for many years in the environment, are transported great distances from their point of release, bioaccumulate (thus threatening humans and animals at the top of the food chain), and cause a range of health effects.
- ▶ Strong acids & alkalis: Highly corrosive liquids used in industry that can corrode metals and destroy tissues of living organisms.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

- ▶ Awakening environmental awareness and corresponding tightening of environmental regulations in the industrialized world in the 1970s and 1980s had led to increasing public resistance to the disposal of hazardous wastes - in accordance with what became known as the NIMBY (Not In My Back Yard) syndrome - and to an escalation of disposal costs.
- ▶ This in turn led some operators to seek cheap disposal options for hazardous wastes in Eastern Europe and the developing world, where environmental awareness was much less developed and regulations and enforcement mechanisms were lacking.

Objective of the Basel Convention

- ▶ The overarching objective of the Basel Convention is to protect human health and the environment against the adverse effects of hazardous wastes. Its scope of application covers a wide range of wastes defined as “hazardous wastes” based on their origin and/or composition and their characteristics, as well as two types of wastes defined as “other wastes” - household waste and incinerator ash.

Aims and provisions of the Basel Convention

- ▶ The provisions of the Convention center around the following principal aims:
 - ▶ the reduction of hazardous waste generation and the promotion of environmentally sound management of hazardous wastes, wherever the place of disposal;
 - ▶ the restriction of transboundary movements of hazardous wastes except where it is perceived to be in accordance with the principles of environmentally sound management; and
 - ▶ a regulatory system applying to cases where transboundary movements are permissible.

“Environmentally sound management”

- ▶ Drawing on the principles of “environmentally sound management”, the Convention seeks to protect human health and the environment from the dangers posed by hazardous wastes.
- ▶ This will require changing the economic equation for wastes in order to motivate the producers of hazardous wastes and people who benefit from the associated goods to take action.
- ▶ To do this, the Convention sets out a **three-step strategy** for minimizing the generation of wastes, treating wastes as near as possible to where they were generated, and reducing international movements of hazardous wastes.

Step ONE: Minimize the generation of hazardous wastes

- ▶ All of the Basel Convention's efforts to push responsibility for treating wastes further up the supply chain are geared to promoting the environmentally sound management of hazardous wastes. ESM involves taking all practical steps to protect human health and the environment from hazardous wastes.
 - ▶ In an ideal world, this would mean reducing the generation of hazardous wastes to zero.
 - ▶ In practice, ESM means strictly controlling the storage, transport, treatment, reuse, recycling, recovery and final disposal of wastes that, despite best efforts to minimize their generation, occur nevertheless.
- ▶ Also called the “integrated life-cycle approach”, this strategy provides incentives to companies to monitor and control every step in their production processes, thereby gaining a more realistic understanding of the true costs of generating hazardous wastes.

Step ONE: Minimize the generation of hazardous wastes

- ▶ The Convention seeks to encourage this kind of innovation by strengthening its partnerships with industry.
 - ▶ Industry shares responsibility for the wastes that are generated, and only industry has the tools, technologies and financial resources for minimizing these wastes, managing them better, and helping to destroy old stocks.
 - ▶ It is time to engage industry - especially those companies that are effectively tackling their own hazardous waste generation - more fully in solving the global problem of hazardous waste.
- ▶ Consumers: One of the most critical aspects of ESM is lowering consumer demand for products and services that result in hazardous by-products.
 - ▶ Consumers need to educate themselves about the methods used in production processes and to think about what they buy every day.
 - ▶ Everyone that consumes manufactured goods must consider himself or herself as part of the problem - and as a vital part of the solution.

Step TWO: Treat and dispose of hazardous wastes as close as possible to where they were generated

- ▶ With current production technologies, generating at least some hazardous wastes remains unavoidable. The preferred option for disposing of these wastes is to do so locally. Local disposal has two important benefits.
 - ▶ First, it reduces the risks of accident or spillage during transport.
 - ▶ Second, it ensures that the costs of hazardous wastes disposal are borne by the generators of these wastes.

Step TWO: Treat and dispose of hazardous wastes as close as possible to where they were generated

- ▶ By improving the safety and effectiveness of the local treatment of hazardous wastes, the Basel Convention's Technical Guidelines will help reduce pressure for transporting these wastes elsewhere.
- ▶ Meanwhile, governments must also address the toxic heritage created by the unsafe procedures of the past.
- ▶ The Convention operates a major worldwide programme to dispose of large quantities of obsolete pesticide stocks and to prevent any further accumulation.

Step THREE : Minimize international movements of hazardous wastes

- ▶ The Basel Convention seeks to minimize the movement of wastes across international borders through an agreed regime of rules and procedures.
- ▶ This regime starts by rigorously identifying the kinds of wastes that are considered hazardous and are thus subject to the rules on transboundary movement.

Step THREE : Minimize international movements of hazardous wastes

- ▶ The Convention currently addresses 27 specific categories of waste and 18 waste streams that make hundreds of waste materials.
 - ▶ These “List A” wastes all exhibit one or more carefully defined hazardous characteristics. Radioactive wastes and wastes from normal ship operations are excluded because they are covered by other international agreements.
 - ▶ A second list, List B, contains wastes that are normally considered to be non-hazardous. Drawing up these lists is not as easy as it might seem.
- ▶ National definitions vary, some chemicals are hazardous in some circumstances and not others, and many wastes are a mix of different substances and may contain only very small amounts of toxic chemicals.

Step THREE : Minimize international movements of hazardous wastes

- ▶ The Convention requires every company or broker wishing to export hazardous wastes to ask the Government of the exporting State to provide prior written notification to the competent authorities in the State of import and in any transit States.
- ▶ The importing and transit States must then give prior written consent before any export can take place.
- ▶ Each approved shipment must be accompanied by a “movement document” with a detailed description of the contents and their disposal requirements, from the point at which the export begins to the point of disposal.
- ▶ Hazardous waste shipments made without such documents are illegal.

Step THREE : Minimize international movements of hazardous wastes

- ▶ The Convention provides guidance on how to draft and implement national legislation to prevent and punish illegal traffic.
 - ▶ When a shipment is judged to be illegal as a result of the exporter's or generator's conduct, the State of export must ensure that the wastes are taken back or, if this is no longer practical, disposed of in an environmentally sound manner.
 - ▶ If the illegality results from actions taken by the State of import, this State becomes responsible for ensuring that the wastes are disposed of in an environmentally sound manner by the importer, disposer or by the Government itself.
- ▶ In cases where responsibility cannot be assigned, the States concerned, perhaps with the help of others, must cooperate on finding an environmentally sound solution.



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→ Trade is no longer a cheap and easy outlet that countries can use to avoid addressing their domestic hazardous waste problems.