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Guidelines on legislative means to ensure safe and secure management of hazardous chemical waste

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Summary

The European Union's (EU) Chemical, Biological, Radiological and Nuclear (CBRN) Risk Mitigation Centres of Excellence (CoE) initiative aims to strengthen international and regional security by targeting the risks posed by CBRN materials. Its projects focus on legal, regulatory, enforcement and technical issues in 62 Partner Countries to strengthen their institutional capacity in CBRN risk mitigation.

EU CBRN CoE Project 61 (Project 61) was created to address outstanding chemical safety and security issues in areas of legislation/regulation, prevention, detection, preparedness and response in Southeast Asia.

The project's activities are divided in five work packages and carried out by a consortium, comprising of Sustainable Criminal Justice Solutions (SCJS), United Kingdom; the UK Health Security Agency (UKHSA), United Kingdom; the International Security and Emergency Management Institute (ISEMI), Slovakia; the National Institute for Public Health and the Environment/Rijksinstituut voor Volksgezondheid en Milieu (RIVM), the Netherlands; and the Verification Research, Training and Information Centre (VERTIC), United Kingdom.

These guidelines were compiled under Work Package 1 of Project 61, which focuses on the legislative aspects of chemicals management to support future efforts to strengthen national legal frameworks. Under Work Package 1, VERTIC and the Project 61 Partner Countries carry out extensive analyses of Partner Countries' legislation for the implementation of international instruments relating to the sound management of chemicals and chemical waste. The Partner Countries in question are Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, the Philippines and Viet Nam. Work Package 1 also focuses on the development of both manuals and guidelines relating to chemicals management legislation.

These guidelines focus on the safe and secure management of hazardous chemical wastes and aim to be used as a basis for new or improved national directives in Project 61 Partner Countries. More specifically, they focus on the legislative means to strengthen hazardous chemical waste management, while acknowledging that other non-legal measures are needed.

They start with preliminary considerations on the challenges associated with hazardous chemical waste management and the need to address them through legal measures. The guidelines then provide an overview of the international and regional legal frameworks which aim to ensure hazardous chemical waste management - their understanding and implementation are therefore means to strengthen hazardous chemical waste management. Finally, the guidelines outline the main legal measures for hazardous chemical waste management that should be included in the national legal frameworks of the Project 61 Partner Countries, and emphasise how Project 61 Work Package 1 deliverables, especially legislation surveys, can be used as a tool to strengthen national legislation on hazardous chemical waste management.

The guidelines refer to Project 61 Work Package 1 completed deliverables, first and foremost legislation surveys, questionnaires, and discussions with Project 61 Partner

Countries during in-country visits and training activities. Information and suggestions regarding the safe and secure management of hazardous chemical wastes mentioned in these guidelines also come from open sources as referenced in the “Useful resources” section and footnotes. Such sources include the *Handbook on chemical and biological waste management* developed in 2014 the context of EU CBRN CoE Project 6 on “Knowledge development and transfer of best practice on chemical and biological waste management”, carried out in Southeast Asia with the participation of representatives from Brunei Darussalam, Cambodia, Lao PDR, Myanmar, the Philippines, Singapore, Thailand and Viet Nam.

1. Hazardous chemical waste management: definitions, challenges and the need for legal measures

In their 2019 statement on illegal transboundary movement of hazardous waste and other wastes in Southeast Asia,¹ the ASEAN Foreign Ministers expressed their “serious concern on the growing threat and adverse effects to human health and the environment posed by the increased illegal transboundary movement of hazardous waste and other wastes in Southeast Asia.” Hazardous waste can be broadly defined as waste or a combination of wastes which has to potential to damage human health, living organisms or the environment.² Hazardous waste is often defined with reference to lists or categories of waste or properties.

Hazardous chemical waste is by definition hazardous waste composed of chemical substances. In other words, it is a chemical waste that due to specific parameters (e.g. quantity, concentration, physical and chemical properties) shows a real or potential hazard to human health and the environment.³ The hazardous properties considered for chemicals focus on explosivity, flammability, toxicity and corrosivity.⁴

During the Project 61 training activities including workshops and in-country visits, the following challenges related to the management of hazardous chemical wastes were identified:

- the lack of complete data on the generation of hazardous waste;
- the illegal disposal of waste oils, electronic waste and chemical discharges to surface waters;
- untreated hazardous wastes;
- empty contaminated pesticide containers being subsequently used for drinking water;
- how to manage mining tailings appropriately;
- how to segregate hazardous waste appropriately, noting that waste is often mixed and there is little to no segregation;
- identifying and classifying waste material;
- the lack of disposal facilities combined with a prohibition to re-export; and
- other issues such as fire hazard and waste transportation.

For technical guidance on issues such as method of waste collection, waste storage management, treatment and disposal techniques, see the “Useful Resources” section below.

A number of policy but also legally binding international and regional instruments have been adopted to regulate hazardous waste, including chemical waste, management. Their comprehensive implementation through appropriate national legal frameworks

¹<https://asean.org/asean2020/wp-content/uploads/2021/01/FINAL-ASEAN-FMs-Statement-on-Illegal-Transboundary-Movement-of-Hazardous-Waste-and-Other-Waste-in-Southeast-Asia.pdf>.

²See <https://leap.unep.org/knowledge/glossary/hazardous-waste>; <https://www.epa.gov/hw/learn-basics-hazardous-waste-hwid>.

³ UNICRI (2014), *Handbook on chemical and biological waste management*, p21.

⁴ UNICRI (2014), *Handbook on chemical and biological waste management*, pp. 97-98.

helps address the challenges identified above. Adopting implementing legislation to give effect to international commitments is an obligation, but also the way to give national (and sub-national/local) authorities the legislative means to ensure effective hazardous chemical waste management; such means range from prohibitions of certain activities with hazardous chemical wastes, regulation and control of the collection, transport and disposal of hazardous wastes and appropriate sanctions, to the facilitation of international cooperation in hazardous waste management. It is therefore important to consider the international, regional and national legal frameworks for hazardous chemical waste management. Non-legal measures are also necessary to strengthen hazardous chemical waste management, such as improving institutional, financial and technical capacity – they are not, however, addressed in these guidelines.

2. International standards on the safe and secure management of hazardous chemical waste

The *Handbook on chemical and biological waste management* developed in 2014 in the context of EU CBRN CoE Project 6 provides an overview of the international instruments on hazardous waste managements including hazardous chemical waste. It is important to refer to this international framework because it includes measures to ensure the safe and secure management of hazardous chemical wastes which are obligations that states need to comply with and implement at the national level through appropriate legal, administrative and other measures.

Of most relevance regarding hazardous waste, including chemical waste, management is the 1989 *Basel Convention on the control of transboundary movements of hazardous waste and their disposal*. Entered into force in 1992, it is legally binding on its States Parties. It defines hazardous waste in its article 1 as:

- (a) Wastes that belong to any category contained in Annex I of the Convention, unless they do not possess any of the characteristics contained in Annex III; and
- (b) Wastes that are not covered under paragraph (a) but are defined as, or are considered to be, hazardous wastes by the domestic legislation of the Party of export, import or transit.

Annex VIII of the Convention includes a list of wastes that are considered hazardous (List A), while Annex IX is a list of wastes that are not considered hazardous (List B).

As its title indicates, the Convention first regulates the transboundary movement of hazardous waste. States Parties are prohibited from exporting hazardous wastes to States Parties that have prohibited their import. Where a State Party has not prohibited their import, other States Parties are prohibited from exporting to them unless consent of the importing State Party has been obtained. Following concerns that the Convention did not go far enough, the 'Ban Amendment' was introduced in 1995, banning all forms of hazardous waste movements from members of the Organisation for Economic Co-operation and Development (OECD) and the European Union, as well as Liechtenstein, to the remaining states. The Ban Amendment entered into force in 2019. The Basel Convention also requires the criminalisation of illicit trafficking –

which it defines at its article 9 - in hazardous wastes or other wastes. The Convention further provides for the reduction and environmentally sound management of hazardous wastes. It defines “environmentally sound management of hazardous wastes or other wastes” as taking all practicable steps to ensure that hazardous wastes or other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes. “Management” means the collection, transport and disposal of hazardous wastes or other wastes, including after-care of disposal sites.

Another relevant international instrument is the *Stockholm Convention on persistent organic pollutants* which entered into force in 2004 and is legally binding on its States Parties. Article 6 of the Convention provides for measures to reduce or eliminate releases from stockpiles but also wastes including products and articles upon becoming wastes consisting of, containing or contaminated with a chemical listed in Annex A, B or C. States Parties to the Convention are required to develop strategies for identifying wastes consisting of, containing or contaminated with a chemical listed in Annex A, B or C. They shall also take appropriate measures so that such wastes, including products and articles upon becoming wastes, are:

- handled, collected, transported and stored in an environmentally sound manner;
- disposed of in such a way that the persistent organic pollutant content is destroyed or irreversibly transformed so that they do not exhibit the characteristics of persistent organic pollutants; or
- otherwise disposed of in an environmentally sound manner when destruction or irreversible transformation does not represent the environmentally preferable option or the persistent organic pollutant content is low, taking into account international rules, standards, and guidelines, including those that may be developed by the Convention’s Conference of the Parties in cooperation with appropriate bodies of the Basel Convention, and relevant global and regional regimes governing the management of hazardous wastes;
- not permitted to be subjected to disposal operations that may lead to recovery, recycling, reclamation, direct reuse or alternative uses of persistent organic pollutants; and
- not transported across international boundaries without taking into account relevant international rules, standards and guidelines.

Both the Basel and Stockholm Conventions are reference instruments of the 2006 *Strategic Approach to International Chemicals Management (SAICM)*, a non-binding policy framework to guide efforts towards the goal of ensuring that by 2020 the production and use of chemicals has a minimal adverse impact on the environment and human health.⁵ SAICM seeks to reduce the generation of hazardous waste, both in quantity and toxicity, and to ensure the environmentally sound management of hazardous waste, including its storage, treatment and disposal; as well as to promote the environmentally sound recovery and recycling of hazardous materials and waste. SAICM also aims to prevent illegal international traffic in chemicals and hazardous wastes.

⁵ <https://www.saicm.org/About/Documents/tabid/5460/language/en-GB/Default.aspx>.

SAICM does not refer to the *Minamata Convention* on Mercury which entered into force in 2017 and is legally binding on its States Parties. Its Article 11 requires States Parties to the Convention to take appropriate measures for the environmentally sound management of mercury waste.

Project 61 Partner Countries can review their status with regard to the abovementioned instruments by looking at the relevant sections of the legislation surveys developed in the context of Work Package 1, which indicate the date of signature/ratification/accession and entry into force as appropriate.

3. Regional approach on the safe and secure management of hazardous chemical waste

3.1. ASEAN

Strengthening hazardous chemical waste management, in line with relevant international instruments, is a priority for ASEAN. A number of declarations identify relevant measures and actions towards that goal, which Project 61 Partner Countries should also refer to. The *ASEAN socio-cultural community blueprint 2025* envisions the achievement of a sustainable environment in the face of social changes and economic development. Related strategic measures include “adopting good management practices and strengthen policies to address the impact of development projects on coastal and international waters and transboundary environmental issues, including pollution, illegal movement and disposal of hazardous substances and waste, and in doing so, utilise existing regional and international institutions and agreements.”⁶

Further, in the *2017 Joint Declaration on Hazardous Chemicals and Waste Management*, the ministers responsible for environment of the ASEAN Member States reaffirmed the importance of the instruments for the management of chemicals and their wastes including the Basel, Stockholm and Minamata Convention, and Strategic Approach to International Chemicals Management, as milestones in the international sound management of hazardous chemicals and wastes. They called for their ratification and implementation. They also stated that they continue to implement an environmentally sound management of hazardous chemicals and wastes throughout their life cycle and substantial reduction of waste through prevention, reduction, reuse recycle and recovery; and to continue their efforts, in accordance with agreed international frameworks and agreements, to significantly minimise the adverse impacts on human health and the environment caused by the release of hazardous chemicals and wastes to air, water and soil, in the ASEAN region.⁷ This strong political will was reaffirmed in the *2019 ASEAN Foreign Ministers’ statement on illegal transboundary movement of hazardous waste and other wastes in South East Asia*. The statement emphasised that all states take necessary measures to ensure the environmentally sound management of hazardous waste and chemical waste, and reiterated the readiness to work with the international community to enhance cooperation in preventing illegal traffic of transboundary movement of hazardous chemicals and wastes in line and, as appropriate, with agreed international frameworks.⁸

A *Working Group on Chemicals and Waste (AWGCW)* was established to “serve as a consultative platform among ASEAN Member States to further strengthen regional

⁶ <https://www.asean.org/wp-content/uploads/2012/05/8.-March-2016-ASCC-Blueprint-2025.pdf>, p. 11, para. 16, C.1, iv).

⁷ https://asean.org/wp-content/uploads/2017/11/Annex-2_Joint-Declaration-HCWM-Adopted-by-AMME.pdf.

⁸ <https://asean.org/asean2020/wp-content/uploads/2021/01/FINAL-ASEAN-FMs-Statement-on-Illegal-Transboundary-Movement-of-Hazardous-Waste-and-Other-Waste-in-Southeast-Asia.pdf>.

coordination and cooperation in addressing chemicals-related issues under relevant multilateral environmental agreements” including the Basel, Stockholm and Minamata Conventions.⁹ It held its first meeting in 2016,¹⁰ and sixth meeting in 2021.¹¹ It could nevertheless serve as a useful platform to promote the implementation of the international and regional instruments for hazardous chemical waste management and the sharing of best practices in doing so.

3.2. European Union

The European Union developed a specific legally binding regime for EU Member States in the so-called 2008 “EU Waste Framework Directive”. The Directive defines “hazardous waste” as waste which displays one or more of the hazardous properties listed in its annex III. Under article 7, the EU Commission establishes and reviews a list of waste which includes hazardous waste. EU Member States may consider waste as hazardous waste where, even though it does not appear as such on the list of waste, it displays one or more of the properties listed in Annex III. The directive defines ‘waste management’ as the collection, transport, recovery (including sorting), and disposal of waste, including the supervision of such operations and the after-care of disposal sites, and including actions taken as a dealer or broker.

Article 17 of the Directive focuses specifically on the control of hazardous waste. It requires EU Member States to take the necessary action to ensure that the production, collection and transportation of hazardous waste, as well as its storage and treatment, are carried out in conditions providing protection for the environment and human health in order to meet the provisions of Article 13,¹² including action to ensure traceability from production to final destination and control of hazardous waste in order to meet the requirements of Articles 35 and 36. Article 35 sets out record keeping obligations for any establishment or undertaking intending to carry out waste treatment, producers of hazardous waste, and the establishments and undertakings which collect or transport hazardous waste on a professional basis, or act as dealers and brokers of hazardous waste. Article 36 requires the prohibition of the abandonment, dumping or uncontrolled management of waste, including littering, and the establishment of appropriate penalties.

Article 17 further bans, save some derogations, the mixing of hazardous waste with other categories of hazardous waste or with other waste, substances or materials. Article 18 requires the packaging and labelling of hazardous waste during collection,

⁹ <https://asean.org/our-communities/asean-socio-cultural-community/environment/>.

¹⁰ <https://environment.asean.org/event/20th-1st-meeting-of-the-asean-working-group-on-chemical-and-waste-awgcw/>.

¹¹ [https://asean2021.bn/meeting/2021/07/01/default-calendar/6th-meeting-of-asean-working-group-on-chemicals-and-waste-\(awgcw\)](https://asean2021.bn/meeting/2021/07/01/default-calendar/6th-meeting-of-asean-working-group-on-chemicals-and-waste-(awgcw)).

¹² According to Article 13, Member States shall take the necessary measures to ensure that waste management is carried out without endangering human health, without harming the environment and, in particular: (a) without risk to water, air, soil, plants or animals; (b) without causing a nuisance through noise or odours; and (c) without adversely affecting the countryside or places of special interest.

transport and temporary storage. Article 19 foresees the separate collection for hazardous waste fractions produced by households and provides for exceptions of the abovementioned requirements for such wastes.

The European Commission publishes information and guidance on the implementation of the Directive.¹³

4. Strengthening legal frameworks for hazardous chemicals waste management in Partner 61 countries

The 2017 UNEP report on Waste Management in ASEAN countries provides an overview of the regulatory frameworks for waste management, including hazardous wastes and thereby hazardous chemical wastes.¹⁴ It further includes a gap analysis of the technology, institutional and policy/regulatory profile for each country as well as programmes and plans for hazardous waste management.¹⁵ While the report indicates that hazardous waste is being regulated at the national level in all ASEAN countries,¹⁶ it identifies a number of implementation gaps in certain countries. Similarly, the 2017 Regional study on mercury waste management in ASEAN countries contains country specific information and assessments, taking into account the relevant provisions of the Basel and Minamata Conventions. The study notes that some ASEAN Member States, “may need to review their legal and regulatory framework in order to identify any deficiency in addressing the specific aspects of mercury and mercury management in their jurisdictions, e.g. mercury trade, households mercury waste disposal, and mercury-contaminated sites management.”¹⁷ The surveys of national legislation for the Basel, Stockholm and Minamata Conventions developed under Work Package 1 of Project 61 provide such a detailed analysis of the legal measures in place in each Project 61 partner country, and identify gaps.

The P61 legislation surveys show that legal measures on hazardous chemicals waste management are usually found in legislation regarding:

- chemical management;
- environment protection;
- hazardous waste;
- pesticides;
- mercury and mercury compound;
- industrial activities, factories;
- pollution control;
- import and exports and other movements, trade and customs.

Such measures are included in primary legislation which include laws, acts, statutes, etc. or secondary legislation such as regulations, decrees and orders. The latter are usually easier to amend and may therefore be more appropriate for waste lists and

¹³ See for example https://ec.europa.eu/environment/pdf/waste/framework/guidance_doc.pdf.

¹⁴ Page 24.

¹⁵ Pp. 36-41.

¹⁶ Page 22.

¹⁷ Page 121.

hazardous characteristics that are regularly updated.¹⁸ The technical details of issues such as disposal systems may also be best placed in regulations and technical guidance.

Regardless of the approach chosen, which depends on each country's circumstances, the P61 legislative surveys as well as guidance developed for the implementation of the Basel, Stockholm and Minamata Conventions (referenced in the "Useful resources" section of this document) identify the aspects that should be covered in legislation. Those include:

- the objective and scope of legislation;
- definitions of key terms such as "hazardous wastes", "hazardous chemical wastes", "environmentally sound management", and related list, categories and classifications in line with those of the applicable international instruments;
- regulatory framework for hazardous (chemical) waste management; the regulatory framework should reflect obligations and requirements in the international conventions including to reduce the generation of hazardous wastes and to ensure the availability of adequate disposal facilities, for the environmentally sound management of hazardous wastes and other wastes;
- regulatory framework for the control of the transboundary movement of hazardous (chemical) wastes;
- institutional framework for hazardous waste management including the designation of authorities responsible for hazardous (chemical) waste and national focal points for the various conventions;
- offences and penalties;
- enforcement measures including monitoring tools such as inspections;
- international cooperation, information exchange and reporting;
- public awareness and education.

Comparing the P61 legislative surveys for the Basel, Stockholm and Minamata Conventions will help countries identify current gaps and possible strategies to strengthen national legislation on hazardous waste management. They could do so through new or amending primary or secondary legislation completing existing measures on hazardous wastes, and/or specific measures for hazardous chemical wastes or certain hazardous chemical wastes.

While the scope of Project 61 does not include legislative drafting support, the documents on the implementation of the Basel, Stockholm and Minamata Conventions provide further details on drafting provisions for those conventions, including country-specific examples and generic example legislation. They also include useful guidance on the process to draft legislation including involving relevant stakeholders. Project 61 interested Partner Countries are therefore invited to consult such guidance to strengthen their national legal frameworks for hazardous chemicals management.

¹⁸ On this, see Secretariat of the Basel Convention (2019), *Basel Convention. Guide for the Development of National Legal Frameworks to Implement the Basel Convention*, p. 14.

Useful resources

Implementation Guides

Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal Eleventh meeting (2013), *Framework for the environmentally sound management of hazardous wastes and other wastes*

available at

<<http://www.basel.int/Implementation/CountryLedInitiative/EnvironmentallySoundManagement/ESMFramework/tabid/3616/Default.aspx>>

Secretariat of the Basel Convention (2019), *Basel Convention. Guide for the Development of National Legal Frameworks to Implement the Basel Convention*

available at <<http://www.basel.int/Implementation/Publications/GuidanceManuals>>

D. Lennett, Gutierrez R. (2014, last updated 2018), *Minamata Convention on Mercury. Ratification and Implementation Manual*

available at

<https://leap.unep.org/sites/default/files/2020-09/Minamata_Convention_on_Mercury_Ratification_and_Implementation_Manual.pdf>

Developing National Legal Frameworks to Implement the Stockholm Convention on Persistent Organic Pollutants – A Guide

available at

<<http://chm.pops.int/Implementation/Publications/GuidanceManuals/tabid/3071/Default.aspx>>

Technical Guides

UNICRI (2014), *Handbook on chemical and biological waste management*

Available at <https://www.researchgate.net/publication/281106561_Handbook_on_chemical_and_biological_waste_management>

UNEP (2017), *Regional Study on Mercury Waste Management in ASEAN countries*

available at

<<https://environment.asean.org/wp-content/uploads/2020/03/Regional-Study-on-Mercury-Waste-Management-in-ASEAN-Countries-UNEP.pdf>>

Basel Convention Technical Guidelines, available at <http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/TechnicalGuidelines/tabid/8025/Default.aspx>