
ASSESSMENT OF EXISTING USEFUL
TRAINING AND INFORMATION MATERIAL ON
POLICIES, LEGISLATION, AND BEST
PRACTICES ON ENVIRONMENTALLY SOUND
MANAGEMENT

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List of acronyms

Acronym	Description
Asian Network	<i>The Asian Network for Prevention of Illegal Transboundary Movement of Hazardous Wastes</i>
BAT	<i>Best Available Technique</i>
BC	<i>Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal</i>
BCRCs	<i>Basel Convention Regional and Coordinating Centres</i>
BIR	<i>Bureau for International Recycling</i>
BREF	<i>Best Available Technique Reference document</i>
CEC	<i>Commission for Environmental Cooperation</i>
CLI	<i>Country Led Initiative</i>
ESM	<i>Environmentally Sound Management</i>
EU	<i>European Union</i>
FAO	<i>Food and Agricultural Organization of the United Nations</i>
ICC	<i>International Crime Court</i>
IMO	<i>International Maritime Organization</i>
ISWA	<i>International Solid Waste Association</i>
MedPartnership	<i>The UNEP/MAP GEF Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem</i>
MPPI	<i>Mobile Phone Partnership Initiative</i>
MS	<i>Member States</i>
OECD	<i>Organisation for Economic Co-operation and Development</i>
PACE	<i>Partnership for Action on Computing Equipment</i>
PCBs	<i>Polychlorinated Biphenyls</i>
POPs	<i>Persistent Organic Pollutants</i>
SLABs	<i>Spent Lead Acid Batteries</i>
Stockholm Convention	<i>The Stockholm Convention on Persistent Organic Pollutants</i>
TAB	<i>Technical Assistance Branch</i>
UNEP	<i>United Nations Environment Programme</i>
UNIDO	<i>United Nations Industrial Development Organization</i>
WHO	<i>World Health Organization</i>

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1. INTRODUCTION

By decision BC-11/1, the eleventh meeting of the Conference of the Parties to the Basel Convention adopted the 'Framework for the environmentally sound management (ESM) of hazardous wastes and other wastes'¹ (hereafter referred to as the ESM Framework) which establishes a common understanding of what ESM encompasses; identifies tools to support and promote the implementation of ESM; and identifies strategies to implement ESM. By the same decision, an expert working group was mandated to further elaborate and implement actions on initial short-term work items and to develop a work programme for additional priorities and key work and actions for the implementation of ESM.

The expert working group on ESM met in December 2013 and decided on several short-term activities to implement ESM. This report deals with the request of COP 11 and the expert working group to assess existing useful training and information material on policies, legislation and best practices on ESM.

¹ <http://www.basel.int/Portals/4/Download.aspx?d=UNEP-CHW.11-3-Add.1-Rev.1.English.pdf>

2. METHOD AND SCOPE

The ESM Framework and the 'Compilation of environmentally sound management criteria and core performance elements under the work of the Basel Convention and other relevant organisations'², already include lists of available information material and resources on ESM. In order not to duplicate this work, this exercise will mainly refer to these materials related to policies, legislation and best practices on ESM; and where useful, add new references focusing on training material.

In principle only open sources have been used; i.e. material openly available on the web. Some documents, such as materials on hazardous waste management from the International Solid Waste Association (ISWA) and the 'Extended Producer Responsibility - A Guidance Manual for Governments' from the Organization for Economic Co-operation and Development (OECD), could not be assessed as they could only be accessed with a login and password or purchased.

Other information, not assessed in the main part of this paper, but deemed relevant to mention, is made available in annex I.

During the inventory phase it became clear that a lot of material is available on (hazardous) waste management and on chemicals management in general, mentioning ESM. In order to keep this paper brief, at least at this stage, only material that focuses specifically on ESM and its principles has been taken into account.

The structure of the report and the assessment centred on the following questions:

1. What resources can Parties use to provide training on ESM?
2. How to access this information? (weblinks to all listed material is made available in footnotes)
3. Where are possible gaps in training and information material?
4. What are possible actions to address certain gaps?

The report is meant as a practical tool to guide Parties wishing to deliver training on ESM to key stakeholders playing a role in ESM; although the main focus is on governments and related authorities.

² <http://archive.basel.int/meetings/tegm/tegm1/i04e.pdf>

3. INVENTORY AND ASSESSMENT OF EXISTING TRAINING MATERIAL ON ESM

3.1 ASSESSMENT CRITERIA

For the assessment of the material, the following aspects were reviewed (random order):

- Date of publication / actuality;
- User-friendliness;
- The extent to which ESM is elaborated on in the information material concerned;
- Target group(s);
- Scope (waste streams and recovery/disposal operations, but also technical, policy or legislation);
- Provider or developer of the material:
- Level: national, regional or global;
- Possible gaps.

3.2 OVERVIEW OF TRAINING AND REFERENCE MATERIAL

United Nations Environment Programme (UNEP)

Under the Basel and Stockholm Conventions a wide range of material has been developed on the matter of ESM. Key documents include:

- Basel Convention technical guidelines.** Although not legally-binding, technical guidelines provide for the foundation upon which countries can operate at a standard that is not less environmentally sound than that required by the Basel Convention. These guidelines are aimed at assisting developing countries and countries with economies in transition, in particular, in ensuring the environmentally sound management of hazardous and other wastes.
 - In 1994 a 'Framework document on the preparation of technical guidelines for the environmentally sound management of wastes subject to the Basel Convention³' was drafted. The document has been prepared in such a way as to address the need for guidance in developing national or regional hazardous waste management strategies as well as in managing such wastes in an environmentally sound way. Overall it gives a general overview of ESM, but does not go into much detail being a framework document. Its purpose is to:
 - Provide information to the Parties to the Basel Convention on waste avoidance and the management of wastes, in particular hazardous wastes, produced within their national territory;
 - Provide guidance to the national Competent Authorities in making a decision whether to consent or reject a proposed transboundary movement of waste subject to the Basel Convention into, out of or through their country;
 - Provide a framework for the further preparation of technical guidelines for the wastes subject to the Basel Convention.

³ <http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/framework.doc>

This document lists 5 criteria to assess ESM and is still being used as a reference document for technical guidelines currently being developed. Positive about this framework document is the specific mentioning of having a regulatory infrastructure and enforcement in place. The document is a bit out of date on certain areas (i.e. on the principles). The more recent adopted ESM Framework would serve as better reference material for countries wishing to develop an ESM strategy.

- b. As of July 2014 a total of 20 technical guidelines have been developed⁴ and adopted by the Conference of the Parties. They either focus on specific waste streams or recovery/disposal operations. The package of guidelines is a valuable source of detailed and technical information for training purposes. However, in terms of user-friendliness they are not always easy to read, lengthy documents.
- ii. **Basel Convention guidance documents.** The website of the Basel Convention contains the following guidance documents related to ESM:
- a. The Revised PACE guidance document on the environmentally sound management of used and end-of-life computing equipment⁵ (2013) developed by the Partnership for Action on Computing Equipment (PACE). This document provides general guidance pertaining to the environmentally sound management of used computing equipment that may not be waste and end-of-life computing equipment that is waste and addresses such matters as ESM criteria; transboundary movement procedures; testing, refurbishment and repair; and material recovery and recycling. The information provided can be used to transfer current know-how on the refurbishment and repair of used computing equipment and best practices for material recovery and recycling. The document therefore provides a foundation for a training programme (e.g., in the form of workshops) aimed at helping to implement the recommendations and actions developed by the project groups established under PACE. The material found in the document can also be used by the Basel Convention Regional Centres (BCRCs) in developing training materials on the topics that it covers.
 - b. The PACE Guidelines and Glossary of Terms⁶:
 - Guideline on environmentally sound testing, refurbishment and repair of used computing equipment (2013);
 - Guideline on environmentally sound material recovery and recycling of end-of-life computing equipment (2013);
 - Glossary of terms;
 - Report with ESM criteria recommendations (2011);
 - Guidance on procedures for transboundary movement of used and end-of-life computing equipment (2011).

⁴ <http://www.basel.int/TheConvention/Publications/TechnicalGuidelines/tabid/2362/Default.aspx>

⁵ <http://www.basel.int/Portals/4/download.aspx?d=UNEP-CHW.11-6-Add.1-Rev.1.English.pdf>

⁶ <http://www.basel.int/Implementation/PartnershipProgramme/PACE/PACEGuidelinesandGlossaryofTerms/tabid/3247/Default.aspx>

- c. Guidance document on the environmentally sound management of used and end-of-life mobile phones⁷ (2012), which was prepared by the Mobile Phone Working Group under the Mobile Phone Partner Initiative (MPPI). The objective of the document is to provide guidance for the environmentally sound management of used and end-of-life mobile phones with an emphasis on reuse and recycling, thereby diverting such end-of life products from final disposal operations such as landfills or incinerators. It is suggested as training material, for example during awareness raising events organised by the BCRCs.
- d. MPPI Guidelines and Glossary of Terms⁸:
 - Guideline on the Refurbishment of Used Mobile Phones (Revised and Approved Draft, 2009);
 - Guideline on the Collection of Used Mobile Phones (Approved Draft, 2009);
 - Guideline on Material Recovery and Recycling of End-of-Life Mobile Phones (Approved Draft, 2009);
 - Guideline on the Awareness Raising - Design Considerations (Revised and Approved Draft, 2009);
 - Guideline for the Transboundary Movement of Collected Mobile Phones (Approved Final Draft, 2009);
 - Glossary of Terms (Final Draft, 2009).
- e. Guidance Document on Transboundary Movements of Hazardous Wastes destined for Recovery Operations⁹ (2002). This document is at some parts out-dated (i.e. the waste hierarchy). It includes a list with general criteria to evaluate ESM recovery operations, but otherwise the information relates more to recovery operations.
- f. Model National Legislation¹⁰ and Checklist for the Legislator¹¹ (1995); designed to assist Parties in developing and/or up-dating their national legislation and institutional arrangements to ensure the environmentally sound management of hazardous wastes and their disposal and to facilitate and ensure the compliance of Contracting Parties with the provisions of the Convention. Part A of this document includes elements for inclusion on the management of hazardous wastes and other wastes. However, under III. Definitions, the definition of ESM is not mentioned. Comparing the elements in part A to the suggested eight provisions of part V, paragraph B.17(a) under Legislation of the ESM Framework, there are some gaps. The Checklist is a complement to the Model National Legislation that seeks to identify the most fundamental matters that should be addressed in national implementing legislation. It does not, however, address all matters that a legislator could choose to address in national legislation. The checklist underlines that the promotion of ESM should fall under the scope of national legislation, that ESM should be one of the criteria to assess import/export applications and that illegally trafficked waste should be disposed of in an environmentally sound manner. The checklist can be used both during training, as well as reference material afterwards.

⁷ <http://www.basel.int/Portals/4/download.aspx?d=UNEP-CHW-EWASTE-GUID-PUB-MobilePhones-201302.English.pdf>

⁸ <http://www.basel.int/Implementation/PartnershipProgramme/MPPI/MPPIGuidelinesandGlossaryofTerms/tabid/3251/Default.aspx>

⁹ <http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/old%20docs/guidelns.pdf>

¹⁰ <http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/modlegis.pdf>

¹¹ <http://www.basel.int/Portals/4/Basel%20Convention/docs/legalmatters/natleg/chklst210706%20.doc>

- iii. **Basel Convention training materials.** ESM is mentioned in some training material developed under the Basel Convention.
 - a. Training manuals on Destruction and Decontamination Technologies for PCB's and other POPs Wastes (Persistent Organic Pollutants)– Volume A¹², B¹³ and C¹⁴ (including annexes¹⁵) (2002), on 'Preparing national environmentally sound management plan for PCBs and PCB contaminated equipment'¹⁶ (2003) and 'Used Acid Lead Batteries'¹⁷ (2004) in the context of the implementation of the Basel Convention.
 - b. Two sets of train-the-trainer materials developed based on a case study elaborating models of compliant ship recycling facilities¹⁸:
 - for management and supervisors at ship recycling facilities¹⁹ and,
 - for the competent authority(ies) assuming the responsibility for regulating the industry²⁰.
- iv. **Stockholm Convention guidance documents.** A 'Guide to Developing National Legal Frameworks to Implement the Stockholm Convention on Persistent Organic Pollutants'²¹. The Guide is intended for use by countries that are Parties to the Stockholm Convention in designing, establishing and implementing effective and efficient legal frameworks that will ensure the environmentally sound management of chemicals. The guide does not go into much detail on ESM; especially not concerning ESM of wastes. This guide is therefore not considered a key piece of reference material for training purposes.
- v. **Stockholm Convention Training Tool on the Technical Guidelines for the Environmentally Sound Management (ESM) of Persistent Organic Pollutants (POPs) wastes**²². This electronic Training Tool provides information on the technical guidelines on POPs wastes in a simple and interactive manner. The target audience are persons involved in the management of POPs wastes that already have a basic knowledge on the subject. These include handlers of hazardous chemical waste, treatment and destruction industries, owners of POPs wastes, relevant Government regulators and trainers on hazardous waste management. Over the recent years various training workshops²³ were held in developing countries and countries with economies in transition in order to support relevant personnel on the implementation of the technical guidelines on POPs wastes and to consider areas that require further work for managing and eliminating wastes. The training tool is highly recommended for training purposes, especially to cover the basics, as it clearly explains the principles of ESM and it is very well presented. Links are included for further reading as well as tests after each module.

¹² <http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/TM-A.pdf>

¹³ <http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/TM-B.pdf>

¹⁴ <http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/TM-C.pdf>

¹⁵ <http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/TM-C%20Annexes.pdf>

¹⁶ <http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/pcbManualE.pdf>

¹⁷ http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/tm-ulab/tm_ulab.pdf

¹⁸ <http://www.basel.int/Portals/4/download.aspx?d=UNEP-CHW-SHIPS-CASES-CompliantShipsRecyclingFacilities-201207.English.pdf>

¹⁹ <http://www.basel.int/Portals/4/download.aspx?d=UNEP-CHW-SHIPS-GUID-RecyclingFacilityOperators.English.pdf>

²⁰ <http://www.basel.int/Portals/4/download.aspx?d=UNEP-CHW-SHIPS-GUID-CompetentAuthorities.English.pdf>

²¹ <http://chm.pops.int/TheConvention/LegalMatters/LegalMattersAdditionalResources/tabid/2245/Default.aspx>

²² <http://chm.pops.int/Implementation/WasteStockpiles/TrainingTool/TrainingToolEnglish/tabid/387/Default.aspx>

²³ <http://chm.pops.int/Implementation/WasteStockpiles/Workshops/tabid/448/Default.aspx>

- vi. **Rotterdam Convention Resource Kit.** This section of the Rotterdam Convention website²⁴ contains many information material; some of which referring to sound chemicals management. It however deals more with the sound use of chemicals, rather than the ESM of chemicals wastes and does not mention in further details ESM of chemicals under the Rotterdam Convention.
- vii. **MedPartnership trainings.** The UNEP/MAP GEF Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem (MedPartnership) organised a series of trainings and workshop on the ESM of PCBs as part of the project 'Environmentally Sound Management of equipment, stocks and wastes containing or contaminated by PCBs in national electricity companies of Mediterranean countries'²⁵. Limited information is however available on-line; references to used training materials are missing.
- viii. **IETC Documents.** Under their Waste Management programme, the UNEP International Environmental Technology Centre (IETC) developed various documents to support governments in improving their waste management strategies and build capacity. List of relevant publications²⁶:
 - a. Guidelines for National Waste Management Strategies (2013);
 - b. Compendium of Technologies for Treatment/Destruction of Healthcare Waste (2012);
 - c. Compendium of Recycling and Destruction Technologies for Waste Oils (2012);
 - d. Developing Integrated Solid Waste Management Plan; Training Volumes 1-4 (2009);
 - e. E-waste Volume I - III (2007 - 2013);
 - f. Training Module – Closing an Open Dumpsite and Shifting from Open Dumping to controlled Dumping and to Sanitary Landfilling (2005).

The IETC material is very detailed, covering both technical aspects as well as policies/strategies.

Overall the UNEP material is valued as highly relevant, aiming at most stakeholders in the ESM process and at different levels. However, due to the presentation of some materials and the in-depth, lengthy information, some publications serve more as references rather than actual training materials. Only one tool is interactive. Some documents should be assessed on up-to-date information.

United Nations Industrial Development Organization (UNIDO)

Under the umbrella of UNIDO a series of Polychlorinated Biphenyls (PCBs) projects²⁷ were carried out in various countries; some of which are ongoing. These PCB management and disposal projects aim to create fundamental capacities within government, institution and PCB owners for complying with the PCB-related obligations under the Stockholm Convention on POPs. The projects enhance the regulatory and legislative infrastructures and strengthen institutions at national, regional and local level to manage PCB-containing equipment and waste in an environmentally sound manner. Of each project, a description is available on-line. However, links to for instance reports, case studies, methodologies and best practices are not provided.

²⁴ <http://www.pic.int/Implementation/ResourceKit/tabid/1064/language/en-US/Default.aspx>

²⁵ <http://www.themedpartnership.org/med/pfpublish/p/doc/d9027efc6f53a69379cfa7b97c62191a>

²⁶ <http://www.unep.org/ietc/InformationResources/Publications/tabid/56265/Default.aspx>

²⁷ <http://www.unido.org/en/what-we-do/environment/capacity-building-for-the-implementation-of-multilateral-environmental-agreements/the-stockholm-convention/post-nips/pcb-management-and-disposal-projects.html>

Food and Agricultural Organization of the United Nations (FAO)

The Obsolete Pesticide Programme of the FAO generated a comprehensive series of manual, reports and technical guidelines for management of obsolete pesticides; the FAO Pesticides Disposal Series 1-16²⁸. The series covers the main steps in the management of obsolete stockpiles from initial inventory to the use of inventory data to allow the development of environmental risk assessments and management plans covering aspects such as storage and transport. The series continues with practical guidance on the development and implementation of safeguarding strategies. The final guideline in the series provides a waste management structure for the selection of disposal options for all obsolete pesticide wastes including contaminated containers and soils. FAO Pesticide Disposal Series 15: Environmental Management Tool Kit for obsolete pesticides (EMTK) - Volume 3, Tool H 'Disposal Strategy'²⁹ is of special interest when dealing with ESM disposal of pesticides. The document uses clear figures, schemes and practical examples, including pictures.

The package of material developed under the Obsolete Pesticide Programme seems to contain documents developed between 1994 and 2009. In some cases the information is outdated / and or not referring to the most recent disposal techniques. The documents rightly stress the need for ESM of obsolete pesticides, but refer to the Basel Convention for further details on what ESM entails. Overall, the FAO Pesticide Disposal Series, especially number 15, is suitable for training purposes.

World Health Organisation (WHO)

In 1999 the WHO published the handbook 'Safe management of wastes from health-care activities'³⁰ which recommends safe, efficient, sustainable, and affordable and culturally acceptable methods for the treatment and disposal of health-care waste, both within and outside health-care establishments. Particular attention is paid to basic processes and technologies; more sophisticated or advanced methods, many of which have been undergoing major developments, are often addressed in less detail.

The teacher's guide: management of wastes from health-care activities³¹ accompanies the WHO publication Management of wastes from health-care activities. It provides teaching materials and recommendations for a three day training course, designed mainly for managers of health-care establishments, public health professionals and policy makers.

²⁸ <http://www.fao.org/agriculture/crops/obsolete-pesticides/resources0/en/>

²⁹ http://www.fao.org/fileadmin/templates/obsolete_pesticides/Guidelines/EMTK3web_nov_small.pdf

³⁰ <http://whqlibdoc.who.int/publications/9241545259.pdf>

³¹ http://www.who.int/water_sanitation_health/medicalwaste/wsh9806/en/

Organisation for Economic Co-operation and Development (OECD)

The OECD published three key documents on ESM. The first document published was the 'Technical guidance for the environmentally sound management of specific waste streams: used and scrap personal computers'³² (2003). In 2004 the OECD adopted a 'Recommendation on Environmentally Sound Management of Waste – C(2004)100 of the Council on the Environmentally Sound Management of Waste, as amended by C(2007)97'³³. In 2007 they published the 'Guidance Manual for the Implementation of the OECD Recommendation C(2004)100 on Environmentally Sound Management (ESM) of Waste'³⁴. This publication aims at facilitating the implementation of an environmentally sound waste management policy by governments on one hand, and by waste treatment facilities on the other hand.

The Recommendation is clearly drafted, contains practical recommendations and lists six core performance elements, which are further elaborated in the Guidance Manual. The documents cover both hazardous as well as non-hazardous wastes and are intended for OECD member countries. The key target group would be governments, as the focus is on developing a policy on the environmentally sound management of waste and the recommendations are addressed to governments; and persons responsible for operating waste management facilities which are addressed through the core performance elements. Both documents are easy accessible through the OECD website. It is likely that the technical guidance is not totally aligned with the developments and insights from recent activities, such as the ones under PACE. The technical guidance is therefore not considered relevant for training purposes.

European Union (EU)

Over the recent years the European Union and its Member States have adopted an elaborate pack of measures and legislation covering the ESM of waste. Two pieces of legislation seem most relevant concerning ESM. The first one being the Directive 2008/98/EC on Waste³⁵ (hereafter referred to as the "Waste Framework Directive"), which defines the principles of ESM. Based on the Waste Framework Directive, further EU legislation³⁶ in the form of Regulations and Directives, have been developed targeting specific waste streams and waste treatment operations. Unlike EU Regulations, which have binding legal force throughout every Member State and enter into force on a set date in all the Member States, Directives have to be transposed first into national law in the individual EU member states. In order to assess how individual member states have transposed EU Directives into national law, the European Commission carries out frequent studies. Two of these studies are discussed below.

The Compilation of environmentally sound management criteria and core performance elements under the work of the Basel Convention and other relevant organisations³⁷ refers to the European Waste Shipment Regulation, among other sources; especially recital 33 and

³²<http://search.oecd.org/officialdocuments/displaydocumentpdf/?doclanguage=en&cote=ENV/EPOC/WGWPR%282001%293/FINAL>

³³<http://webnet.oecd.org/OECDACTS/Instruments/ShowInstrumentView.aspx?InstrumentID=51&InstrumentPID=48&Lang=en&Book=>

³⁴ <http://www.oecd.org/env/waste/39559085.pdf>

³⁵ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008L0098&from=EN>

³⁶ <http://ec.europa.eu/environment/waste/index.htm>

³⁷ See foot note 2

Article 49 on ESM (see annex II). In 2011 a study³⁸ was published which assessed how EU Member States (MS) implemented and enforced Article 49.

In 2012 a report on existing minimum waste treatment requirements³⁹ in several EU MS was published. This report provides detailed insight in inter alia various waste treatment techniques standards used for, for example air and water emissions.

The second piece of legislation is the Directive 2010/75/EU on Industrial Emissions⁴⁰ (integrated pollution prevention and control) which includes the application of Best Available Techniques (BAT) by industrial installations. In order to provide guidance on BATs, the European Commission develops so-called BREFs⁴¹ (Best Available Techniques Reference documents). BREFs are mainly used by the operators of installations (e.g. during the preparation of an application for a permit) and Environmental Authorities (Permit writers, Policy makers).

The two pieces of legislation provide examples of measures adopted in legislative frameworks; especially at sub-regional level. They can therefore be used as reference material for capacity building exercises. The reports referred to offer detailed insight into how individual countries dealt with the implementation of the provisions in practical terms and at national level. The BREFs are technical documents, but also a good source of information, which can be used during in-depth technical trainings.

Regional and sub-regional initiatives

The Asian Network for Prevention of Illegal Transboundary Movement of Hazardous Wastes⁴²

The Asian Network for Prevention of Illegal Transboundary Movement of Hazardous Wastes (hereafter referred to as the Asian Network) issued a study on ESM standards in Asia. The Study on Criteria and Requirement on Environmentally Sound Management of Hazardous Wastes and Other Wastes⁴³ (2011) identified recommendable ESM components in view of the current status of a legal system, technologies and other relevant matters in Asia.

Commission for Environmental Cooperation (CEC)⁴⁴

The CEC Report 'Practices and Options for ESM of Spent Lead Acid Batteries within North America'⁴⁵ (2007) provides background material on the ESM of Spent Lead Acid Batteries (SLABs), and possible options and criteria to ensure the ESM, including tracking and transportation, of SLABs in North America. To support North American small and medium-size businesses that recycle and refurbish used and end-of-life electronics in the creation and maintenance of green jobs, the CEC also has completed an online training course on ESM practices⁴⁶.

³⁸ <http://ec.europa.eu/environment/waste/shipments/pdf/Annex%20VII.pdf>

³⁹ http://www.mmediu.ro/beta/wp-content/uploads/2012/07/2012-07-17_minimum_waste_treatment_requirements.pdf

⁴⁰ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010L0075&from=EN>

⁴¹ <http://eippcb.jrc.ec.europa.eu/reference/>

⁴² http://www.env.go.jp/en/recycle/asian_net/

⁴³ https://www.env.go.jp/en/recycle/asian_net/Project_N_Research/PDF/asia%20ESM%20paper.pdf

⁴⁴ http://cec.org/Page.asp?PageID=1115&AA_SiteLanguageID=1

⁴⁵ <http://www3.cec.org/islandora/en/item/2323-practices-and-options-environmentally-sound-management-spent-lead-acid-batteries-en.pdf>

⁴⁶ <http://www.cec.org/Page.asp?PageID=1226&SiteNodeID=1282>

Basel Convention Regional and Coordinating Centres (BCRCs)⁴⁷

The BCRC China conducted several projects on ESM of e-waste; for instance the 'Survey of the import and the environmentally sound management of electronic wastes in Asia-Pacific Region'⁴⁸ and the project 'New partnership with local authorities for the environmentally sound management of hazardous and other wastes in the Asia-Pacific region'⁴⁹.

The BCRC Slovakia coordinated the project 'Development of Instrumental Framework, Implementation Schedule and Guidelines for Environmentally Sound Management of Waste Oils in Bosnia and Herzegovina'⁵⁰. The report is a good example of a case study at national level and includes practical points for the ESM of waste oils.

Under the auspices of the BCRC South Africa, Regional Policy Guidelines Economic Instruments for the Environmentally Sound Management of Used Lead Acid Batteries⁵¹ and Regional Policy Guidelines Economic Instruments for the Environmentally Sound Management of Waste Oils⁵² were developed. Both reports cover various aspects of ESM of these two waste streams from a regional perspective.

The BCRC Latin America and the Caribbean carried out a number of projects related to the matter of ESM. In 2008 The Regional Strategy for the Environmentally Sound Management of Used Lead Acid Batteries in Central America, Columbia, Venezuela and the Caribbean Island States was prepared under the auspices of the Basel Convention Partnership Initiative to assist developing countries in planning for and adopting policies, programs and measures to support a cooperative and coordinated approach to ensuring the environmentally sound management (ESM) of ULAB in the region. This project produced a regional strategy⁵³ and an implementation plan⁵⁴. The focus is not so much on the technical part, but underlines the need for a regional approach and includes options and criteria for financial and economic mechanisms. It provides a good example of a regional strategy.

The Latin American and Caribbean region further developed the Practical Guideline on Environmentally Sound Management of Obsolete Pesticides in the Latin America and Caribbean Countries⁵⁵ (2004). This publication aims to provide a practical guideline on the environmentally sound management of obsolete pesticides within the Latin America and Caribbean countries, and takes into consideration related aspects such as identification and stockpiles management, their handling as hazardous wastes, treatment alternatives, exportation, generation prevention and the obligations laid down by the international conventions of Basel, Stockholm and Rotterdam. The guideline is addressed to experts from different public or private agencies who are related to several aspects deriving from obsolete pesticides management. It includes practical information on safety and security aspects in dealing with POPs and lists possible treatment and disposal operations. Again, this guideline is useful material during training sessions.

⁴⁷ <http://www.basel.int/Partners/RegionalCentres/Overview/tabid/2334/Default.aspx>

⁴⁸ <http://en.bcrc.cn/col/1257152616046/2010/01/21/1276071007091.html>

⁴⁹ <http://en.bcrc.cn/col/1257152616046/2010/01/21/1276071007426.html>

⁵⁰ <http://www.sazp.sk/bcrc/script/detaily/upcom9.php>

⁵¹ <http://africainstitute.info/reports/AI%20-%20Regional%20Policy%20Guidelines%20for%20ULAB.pdf>

⁵² <http://africainstitute.info/reports/AI%20-%20Regional%20Policy%20Guidelines%20for%20Waste%20Oil.pdf>

⁵³ http://www.basel.int/Portals/4/Basel%20Convention/docs/centers/proj_activ/stp_projects/21-01.pdf

⁵⁴ http://www.basel.int/Portals/4/Basel%20Convention/docs/centers/proj_activ/stp_projects/21-03.pdf

⁵⁵ http://www.basel.int/Portals/4/Basel%20Convention/docs/centers/proj_activ/tctf_projects/013.pdf

On the websites of some BCRCs, brief information can be found on projects, workshops and training activities that were delivered related to ESM. Reference materials, such as power point presentations, project reports and used tools, are unfortunately in most cases not online available.

Examples include:

- The implementation of “Pilot Project and Technical Training on Environmental Sound Management of Asbestos Waste”⁵⁶ by the BCRC China;
- A regional workshop of experts to review Lead Batteries’ Environmentally Sound Management Guidelines organised by the BCRC Slovakia in April 2014.

The report from the Asian Network provides a clear and detailed overview and comparison of the various ESM components in relevant guidelines. The report on SLABs, even though it leans heavily on the Basel Convention Technical Guidelines for ESM of Waste Lead-acid Batteries, gives a good overview of possible different regulatory frameworks dealing ESM of SLABs. The online training tool, is one of the new tools aiming at small to medium enterprises (SMEs). Even though some BCRCs set up a variety of activities around the matter of ESM, limited information is available and easy accessible. The reports that are available provide helpful information on various countries dealing with ESM.

Country level

India

In 2008 India issued Guidelines⁵⁷ for the ESM of e-waste. The objective of these Guidelines is to provide guidance for identification of various sources of waste electrical and electronic equipment (e-waste) and prescribed procedures for handling e-waste in an environmentally sound manner. These Guidelines apply to all those who handle e-waste which includes the generators, collectors, transporters, dismantlers, recyclers and stakeholders of e-wastes irrespective of their scale of operation. In 2012 the E-waste (Management and Handling) Rules, 2011⁵⁸, came into force. Related to the E-waste rules, a capacity building programme⁵⁹ was undertaken for nine State Pollution Control Boards in India in May 2013. The programme aimed to capacitate the State Pollution Control Boards with the knowledge around E-waste issues. The programme covered the entire spectrum starting from E-waste basics, E-waste Rules, Roles and Responsibilities of various actors, awareness and implementation. Various courses and papers were developed to support this capacity building programme.

United Kingdom

In 2010 a policy document was issued by the Department for Environment, Food and Rural Affairs (DEFRA). The document, A Strategy for Hazardous Waste Management in England⁶⁰, is aimed at the environmentally sound management of hazardous waste.

⁵⁶ <http://en.bcrc.cn/col/1257152616046/2011/01/24/1295832610007.html>

⁵⁷ <http://www.cpcb.nic.in/latest/27.06.08%20guidelines%20for%20E-Waste.pdf>

⁵⁸ http://www.moef.nic.in/sites/default/files/1035e_eng.pdf

⁵⁹ <http://www.igep.in/e48745/e49512/e54648/>

⁶⁰ <http://archive.defra.gov.uk/environment/waste/topics/hazwaste/documents/policy.pdf>

Industry

The Bureau for International Recycling (BIR) published the report Tools for Environmentally Sound Management⁶¹ (2006). This publication provides the necessary information for companies in the recovery and recycling sector (scrap collectors, sorters, processors and consumers) to implement an ISO-compliant Environmental Management System with OECD Core Performance Elements.

⁶¹ <http://www.bir.org/assets/Documents/publications/brochures/GuideESM-English.pdf>

4. CONCLUSIONS

In reviewing the assessed documents, it can be concluded that the information available on ESM is quite extensive; and even more information is available on (hazardous) waste management and chemicals management. However, a small part is directly suitable for training purposes; most material rather serves as reference material. This is mainly due to the way the information is presented, the length of the materials and the level of detail, and the extent to which ESM is covered.

The information, which is developed by a wide range of organisations at the global, regional and national level, seems to cover most key stakeholders, ranging from governments to operators. Permit writers and inspectors are among the least addressed target groups.

Not all available information is up-to-date; especially in relation to the waste hierarchy, principles and to the matter of e-waste. This is due to recent changes in policies and technologies and ongoing discussions on developing common standards concerning classification and standards for certain waste streams. Hence, for example the work from the PACE group and the activities under the CLI.

The main gaps in training material on ESM are considered the following

- Case studies and best practices. Few materials are openly available on how at country level or regional level ESM is laid down in policy frameworks, legislation and provisions;
- Standard power point presentations;
- Inter-active training material, for instance e-learning tools, webinars, exchange fora and videos;
- Formats or examples of legislative texts, policy frameworks on ESM at national level and of permits for waste treatment companies meeting the ESM criteria.

The information is widely scattered on the web, missing a central point to access relevant information.

5. SUGGESTIONS FOR FOLLOW UP

It has to be noted that this chapter merely lists suggestions for possible follow-up actions based on the compilation and assessment exercise only. It does not take into account possible parallel or relevant initiatives, for example by the Technical Assistance Branch (TAB) when it comes to providing technical assistance and training.

- 1) As relevant information is widely spread on the web, it could be considered to establish a portal where all relevant information is made through available (e.g. page under the Basel Convention website). In a portal material can be grouped for example around topics, but also around geographical areas or other common elements; e.g. similar national legal frameworks/systems;
- 2) If the wish is to create awareness and build capacity on the matter of ESM as defined under the Basel Convention, it should be considered to develop a standard training curriculum or a toolbox based on the criteria as defined in the ESM Framework. Parts of a toolbox could for instance be formats, model texts, power point presentations, case studies and practical exercises. Target groups should be clearly identified, but one could think of permit writers and inspectors;
- 3) Compile best practices for example in the form of a 'white paper' to provide an overview of how countries dealt with the issue of ESM and how they implemented it in national policy and legislative frameworks;
- 4) Consider developing more inter-active material; for example in the form of training videos, on-line training tools and webinars.

Titel	Description	Date	By	Source
Case Study to Develop Models of Compliant Ship Recycling Facilities	This case study describes models for compliant ship recycling facilities in consideration of the requirements of the Basel Convention and the Hong Kong Convention	2012	UNEP	http://www.basel.int/Portals/4/download.aspx?d=UNEP-CHW-SHIPS-CASES-CompliantShipsRecyclingFacilities-201207.English.pdf
Guidelines for safe and ESM ship recycling	These guidelines provide stakeholders, particularly Ship Recycling Facilities, with recommendations for the safe and environmentally sound recycling of ships and implementation of the Hong Kong Convention	2012	IMO	http://www.basel.int/Portals/4/Basel%20Convention/docs/ships/IMO-Safe-ES-Ship-Recycling-Guidelines.pdf
Safety and Health in Ship breaking – Guidelines for Asian Countries and Turkey	The guidelines are designed to assist shipbreakers and competent authorities alike to implement the relevant provisions of ILO standards, codes of practice and other guidelines on occupational safety and health and working conditions, and the provisions of instruments of other relevant international organizations, aiming at progressive improvement	2004	ILO	http://www.basel.int/Portals/4/Basel%20Convention/docs/ships/ILO-Guidelines.pdf
ISO 30000:2009 Ships and marine technology -- Ship recycling management systems -- Specifications for management systems for safe and environmentally sound ship recycling facilities	ISO 30000:2009 specifies requirements for a management system to enable a ship recycling facility to develop and implement procedures, policies and objectives in order to be able to undertake safe and environmentally sound ship recycling operations in accordance with national and international standards. The management system requirements take into account the relevant legal requirements, safety standards and environmental elements that the ship recycling facility needs to identify and comply with in order to carry out safe and environmentally sound ship recycling.	2009	ISO	http://www.iso.org/iso/catalogue_detail.htm?csnumber=51244
Extended Producer Responsibility A Guidance Manual for Governments	This guidance manual represents one means to inform national governments about the potential benefits and costs associated with EPR.	2001	OECD	http://www.oecdbookshop.org/oecd/display.asp?sf1=identifiers&lang=EN&st1=972001041p1 (manual has to purchased)
Improving Recycling Markets	This report presents the case for the use of 'industrial' policies which address such market failures and barriers as complements to more traditional environmental policies. Indeed, encouraging ever-higher recycling rates in the absence of such complementary measures may impose very high social welfare costs.	2006	OECD	http://www.oecd.org/env/waste/improvingrecyclingmarkets.htm

Titel	Description	Date	By	Source
Guidelines for National Waste Management Strategies	The objective of this guidance document is to improve upon the approach to waste management, which in most developing countries is disorganised, haphazard and under-resourced. This document aims to remedy the problem by establishing a clear rationale for making waste management a national priority, and by providing an organised, logical set of steps to tackle that priority through the creation and implementation of a national strategy.	2013	UNEP/ UNITAR	http://www.unep.org/ietc/Portals/136/Publications/Waste%20Management/UNEP%20NWMS%20English.pdf
Ecolex	ECOLEX is an information service on environmental law, operated jointly by FAO, IUCN and UNEP. Its purpose is to build capacity worldwide by providing the most comprehensive possible global source of information on environmental law.	-	-	www.ecolex.org

ANNEX II – REGULATION (EC) NO 1013/2006 ON SHIPMENTS OF WASTE

Recital 33) *The necessary steps should be taken to ensure that, in accordance with Directive 2006/12/EC and other Community legislation on waste, waste shipped within the Community and waste imported into the Community is managed, throughout the period of shipment and including recovery or disposal in the country of destination, without endangering human health and without using processes or methods which could harm the environment. As regards exports from the Community that are not prohibited, efforts should be made to ensure that the waste is managed in an environmentally sound manner throughout the period of shipment and including recovery or disposal in the third country of destination. The facility which receives the waste should be operated in accordance with human health and environmental protection standards that are broadly equivalent to those established in Community legislation. A list of non-binding guidelines should be established in which guidance may be sought on environmentally sound management.*

Article 49 - Protection of the environment

1. *The producer, the notifier and other undertakings involved in a shipment of waste and/or its recovery or disposal shall take the necessary steps to ensure that any waste they ship is managed without endangering human health and in an environmentally sound manner throughout the period of shipment and during its recovery and disposal. In particular, when the shipment takes place in the Community, the requirements of Article 4 of Directive 2006/12/EC and other Community legislation on waste shall be respected.*

2. *In the case of exports from the Community, the competent authority of dispatch in the Community shall:*

(a) require and endeavour to secure that any waste exported is managed in an environmentally sound manner throughout the period of shipment, including recovery as referred to in Articles 36 and 38 or disposal as referred to in Article 34, in the third country of destination;

(b) prohibit an export of waste to third countries if it has reason to believe that the waste will not be managed in accordance with the requirements of point (a).

Environmentally sound management may, inter alia, be assumed as regards the waste recovery or disposal operation concerned, if the notifier or the competent authority in the country of destination can demonstrate that the facility which receives the waste will be operated in accordance with human health and environmental protection standards that are broadly equivalent to standards established in Community legislation.

This assumption shall, however, be without prejudice to the overall assessment of environmentally sound management throughout the period of shipment and including recovery or disposal in the third country of destination.

For the purposes of seeking guidance on environmentally sound management, the guidelines listed in Annex VIII may be considered.

3. *In the case of imports into the Community, the competent authority of destination in the Community shall:*

(a) require and take the necessary steps to ensure that any waste shipped into its area of jurisdiction is managed without endangering human health and without using processes or methods which could harm the environment, and in accordance with Article 4 of Directive 2006/12/EC and other Community legislation on waste throughout the period of shipment, including recovery or disposal in the country of destination;

(b) prohibit an import of waste from third countries if it has reason to believe that the waste will not be managed in accordance with the requirements of point (a).

- *End* -