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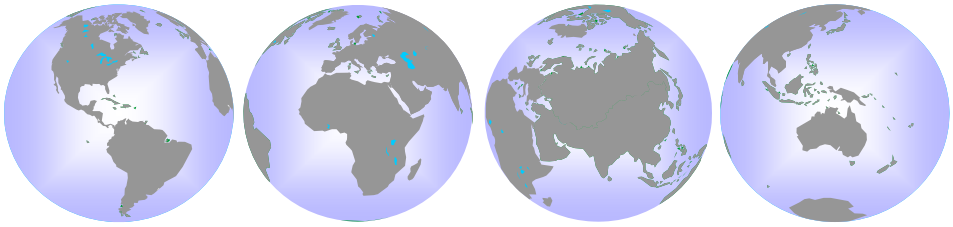


International Lead Management Center

Regional Recycling Model in the Context of the Basel Convention

International Lead Zinc Study Group
Economic & Environment Committee
Seventeenth Meeting
Lisbon, Portugal
8 - 9 October 2009

Brian Wilson
ILMC

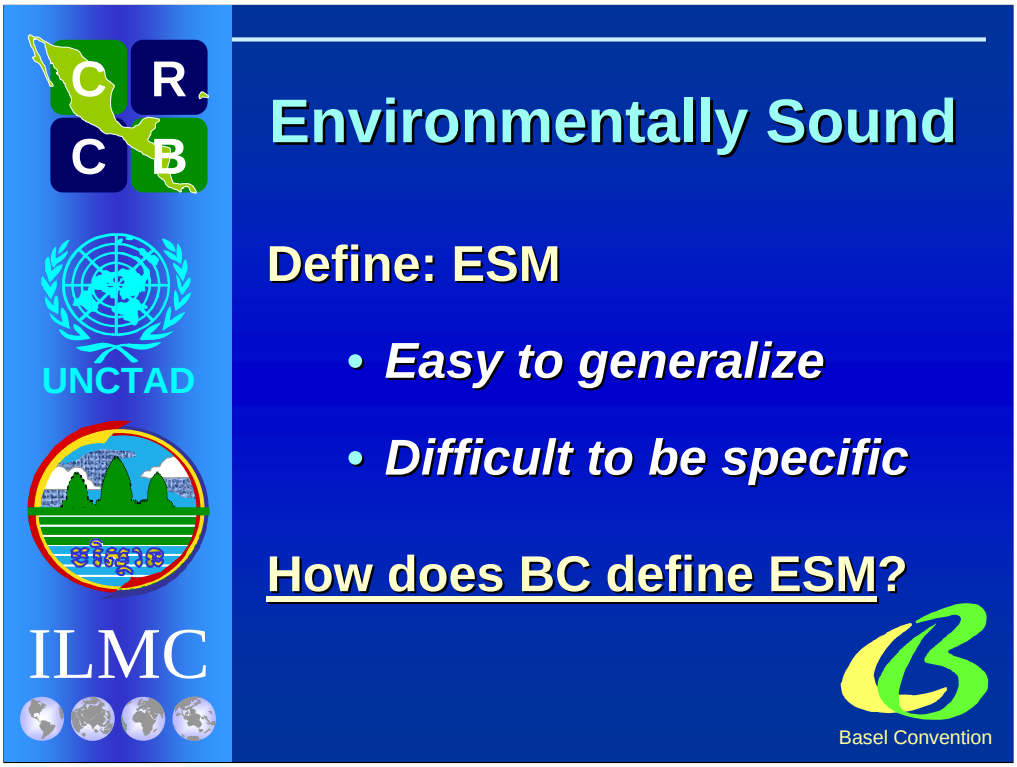
Waste Management

The Basel Convention is an International Control mechanism for Waste Stream, hazardous and non-hazardous.

But under the Basel Convention what is, “Environmentally Sound Management” in the context of Recycling Used Lead Acid Batteries?

The Basel Convention defines Used Lead Acid Batteries as a Hazardous Waste.

But, The Basel Convention does not define Environmentally Sound Management specifically for Used Lead Acid Batteries or for that matter, any other hazardous waste.



Environmentally Sound Management

There are few general definitions of the term, “Environmentally Sound Management”, but as we know hazardous waste includes ships and ULAB, making it difficult to be specific about all the waste streams in one sentence or even one paragraph.

So how does the Basel Convention define Environmentally Sound Management?

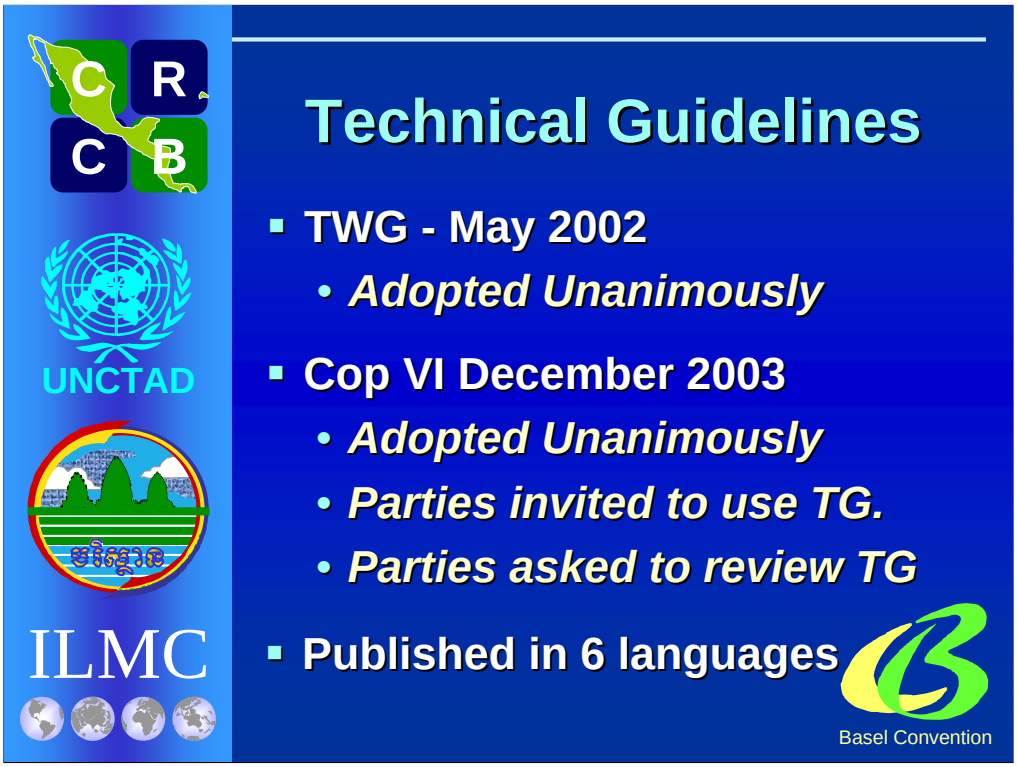
Environmentally Sound Management

The Conference of Parties to the Basel Convention asked the Basel Convention Secretariat to establish a number of specialist Technical Working Groups charged with the responsibility of producing Technical Guidelines that define the term, "Environmentally Sound Management" for specific waste streams. To date there are 23 Technical Guidelines including, for example:

- Persistent Organic Pollutants (POPs)
- Biomedical and Hospital Waste
- Ships destined for dismantling
- ULAB

And many more……..

The Secretariat also produces Training and Guidance Manuals that supplement the Technical Guidelines, providing very detailed descriptions of environmentally sound procedures, processes and case studies.



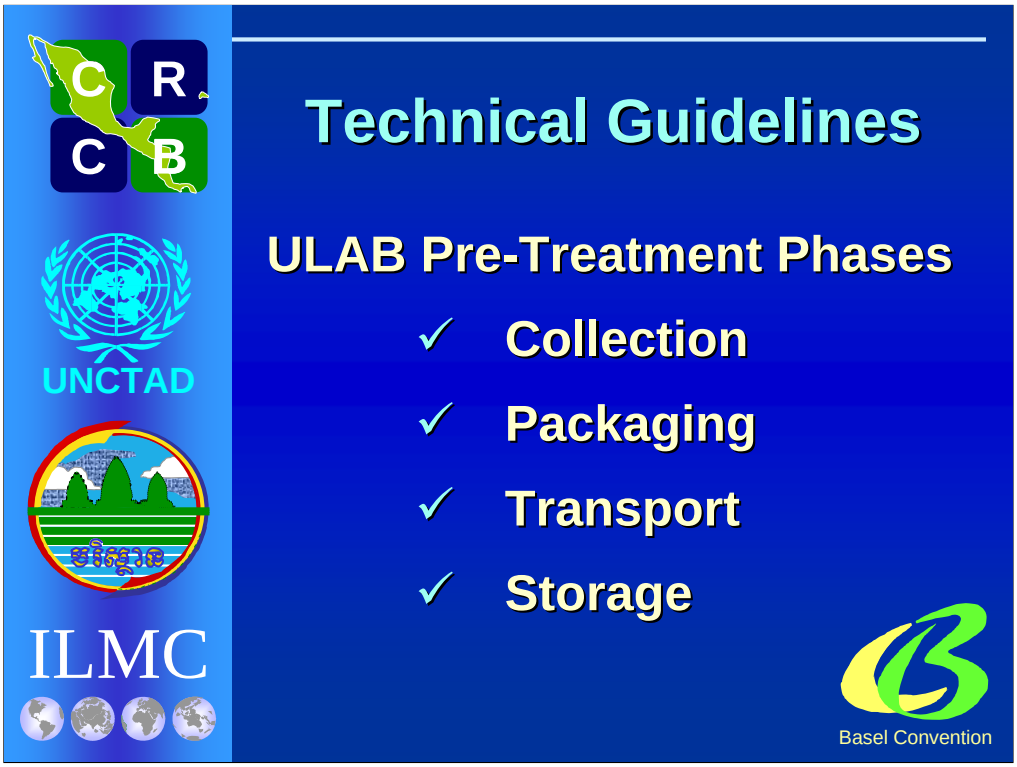
Basel Technical Guidelines

The Basel Technical Working Group (TWG) for ULAB Recycling took about two years to prepare and finalize the Technical Guidelines. The International Lead Management Center was a member of a small team that prepared and revised the Guidelines up to the adoption of the final text by the TWG in May 2002.

To this day the document represents the most comprehensive guide to ULAB recovery,

In December 2003 at the sixth meeting of the Conference of the Parties (COP VI) the Guidelines were adopted and the Chair of the COP invited the parties to use the Technical Guidelines so that their practical application could be tested and subsequently reviewed at a later stage. This means that the Basel Technical Guidelines have been adopted by 170 countries around the world, including all the participants in the ULAB Recovery Project in Central America.

The Technical Guidelines are available in the six languages of the United Nations.



Basel Technical Guidelines

So I will give you an overview of the content of the Guidelines.

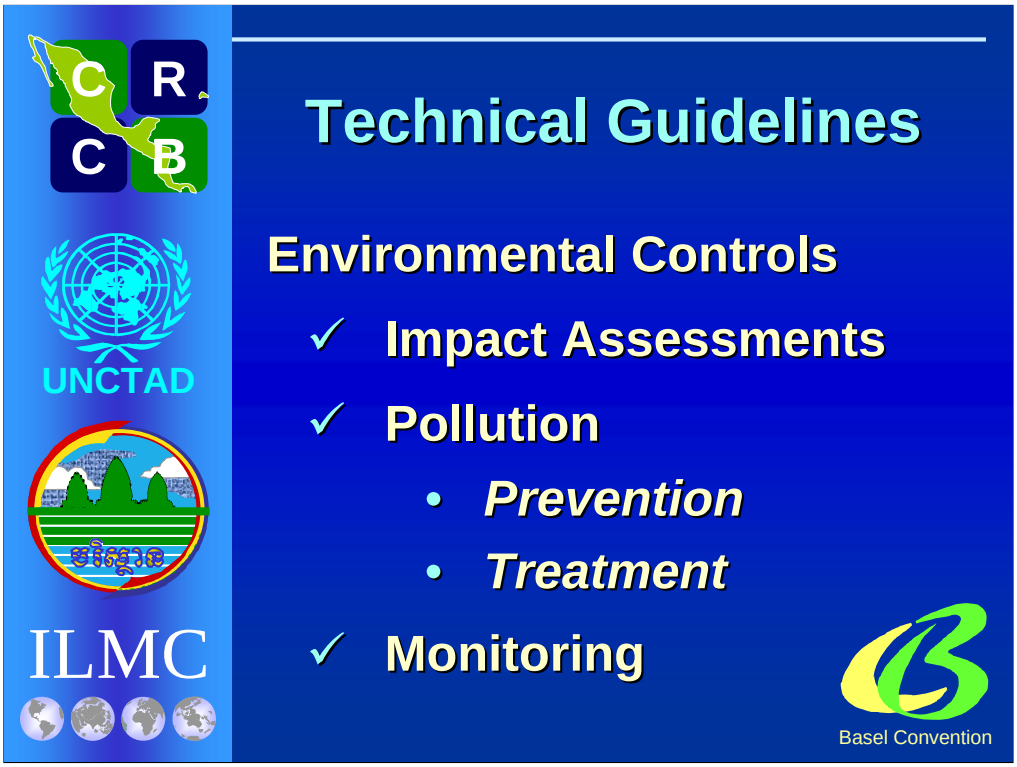
Not surprisingly the Guidelines start with the Pre-Treatment Stages of ULAB Recovery, that is:

- Collection
- Packaging
- Transport
- Storage

Basel Technical Guidelines

Guidance about the Recycling Processes includes:

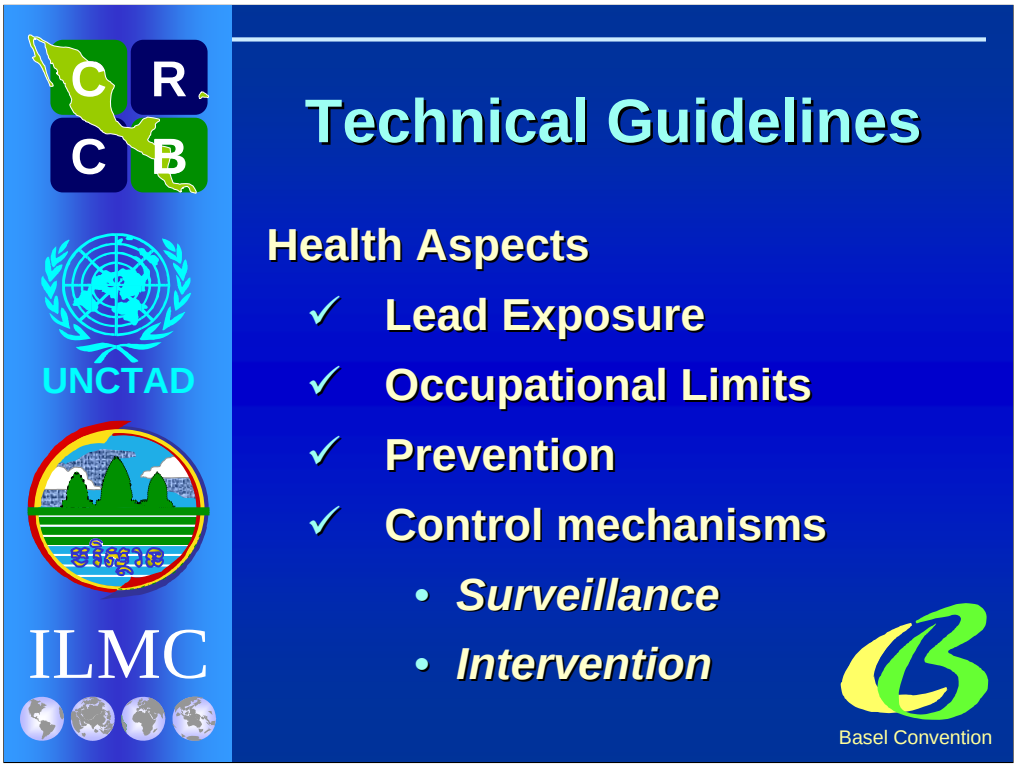
- ULAB breaking
  - Manual
  - Mechanical
- Lead Recovery using:
  - Pyro-metallurgical processes
  - Hydro-metallurgical technologies
- Lead Refining



Basel Technical Guidelines

The chapter about Environmental Controls explains how to:

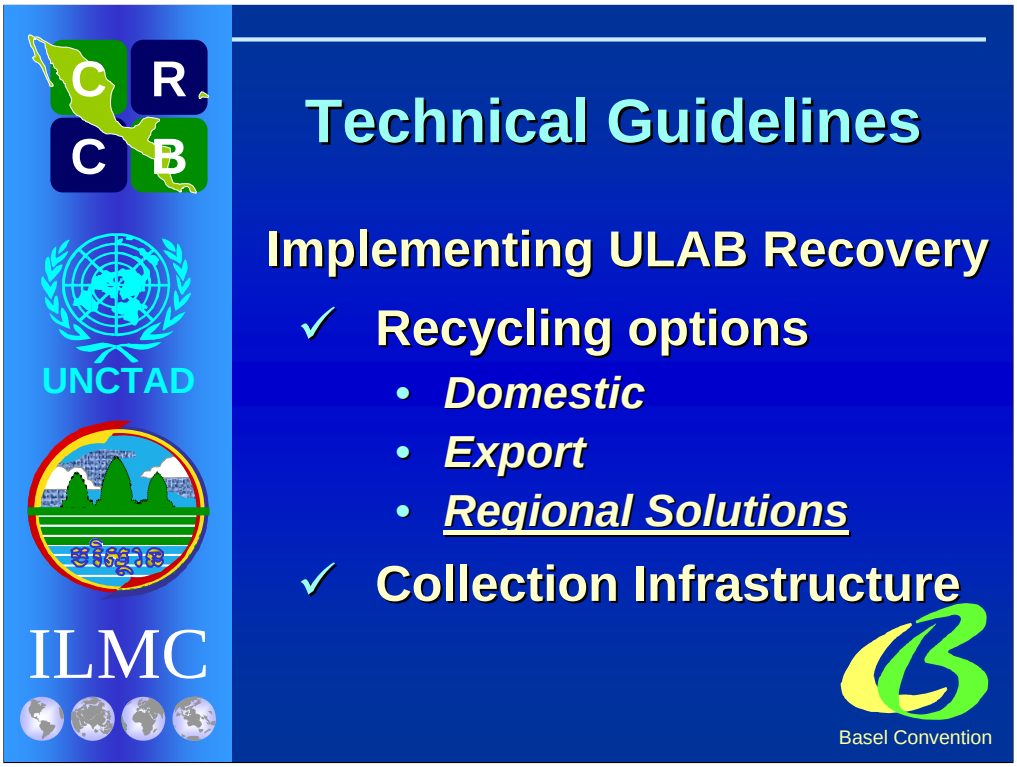
- Undertake an Environmental Impact Assessment of a Recycling Plant
- Maintain control regimes to minimize the risks of adverse:
  - Effluent Discharges
  - Fugitive Emissions
- Apply process treatments to eliminate certain pollutants, such as sulfur dioxide
- Set up atmospheric and effluent monitoring stations to record environmental performance



Basel Technical Guidelines

Maintaining high standards of Occupational Health in a Lead Recovery operation is vital and the Guidelines explain:

- The adverse health effect of lead exposure
- How to apply the recommended limits for occupational exposure
- The measures necessary to prevent elevated levels of lead exposure
- The Control mechanisms to monitor employees' lead exposure, including medical surveillance and intervention.



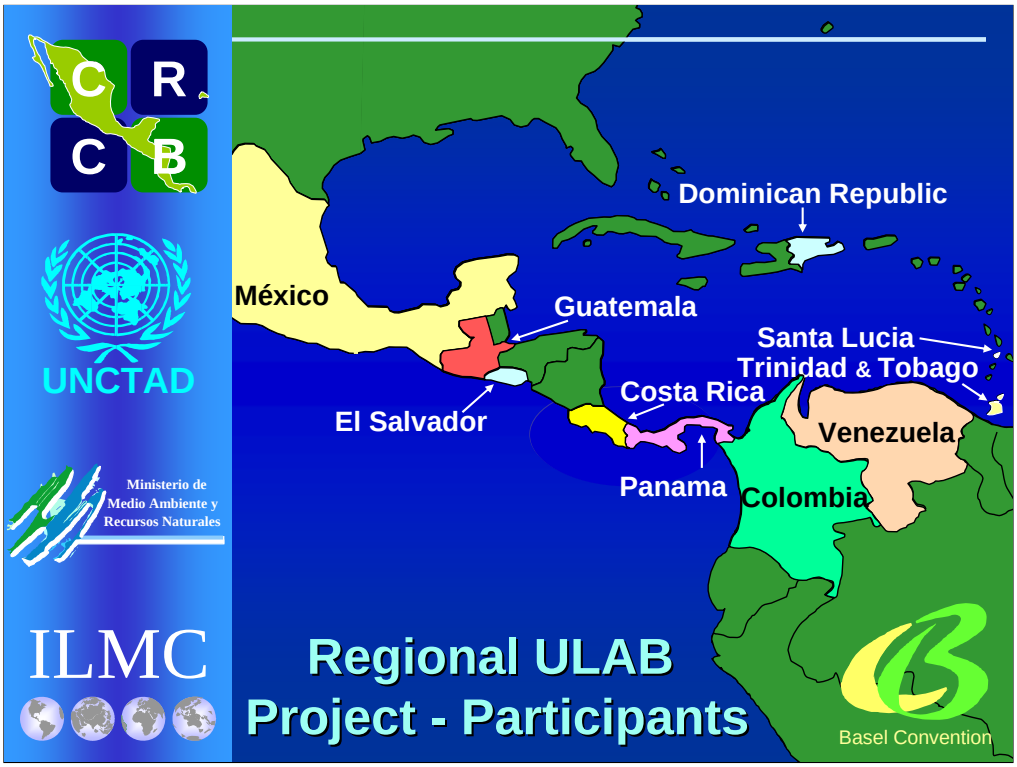
Basel Technical Guidelines

Finally, I will just mention that the Guidelines also have a Chapter that provides a framework for the implementation of a program for the environmentally sound recovery of ULAB.

The various recycling options are considered in the context of ensuring environmentally sound recycling, such as:

- Domestic Recycling if there are suitable facilities with capacity
- Export to a country with environmentally sound recycling capacity
- Regional solutions that build on complementary synergies

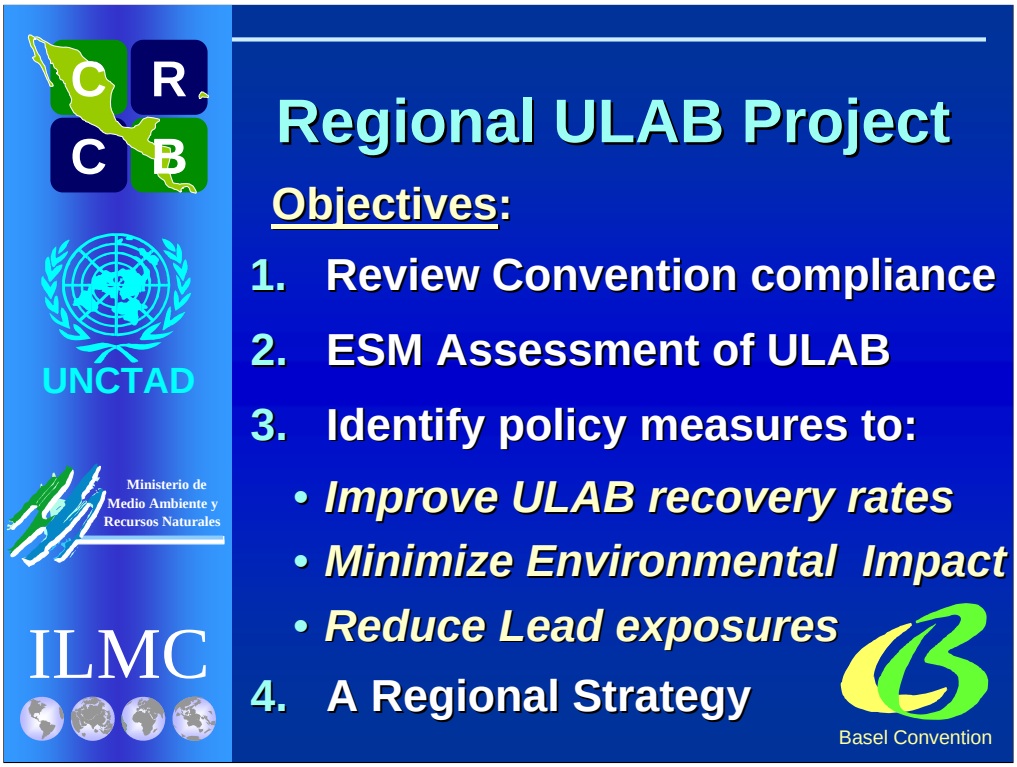
There is also a section that examines ULAB collection options and the different infrastructure required in each case, depending on whether it is market driven or incentive based.



Regional ULAB Recovery Project

To test whether the Technical Guidelines facilitated the transboundary movement of ULAB in the context of the Environmentally Sound Recovery of ULAB on a Regional Basis where some countries had recycling facilities and some did not, a Pilot program was implemented in Central and South America and the Caribbean Island States. Nine Countries participated in the Pilot Scheme, Mexico, El Salvador, Costa Rica, Panama, Colombia, Venezuela, Trinidad and Tobago, St Lucia and the Dominican Republic.

Project activities were coordinated by the Basel Convention Regional Centers for Training and Technology Transfer (BCRCs) in San Salvador (MARN) (for Central America) and Trinidad and Tobago (for the Caribbean) with support from the Basel Convention Secretariat (SBC). Assistance was also given by the University of the West Indies (UWI) through its Department of Chemistry in Trinidad, the United Nations Conference on Trade and Development (UNCTAD) and the International Lead Management Center (ILMC).



Regional ULAB Recovery Project

The objectives of the Regional ULAB Project were:

1. Review compliance with the Basel Convention
2. Devise a scheme to undertake assessments to determine the standard of environmentally sound management of ULAB recovery
3. Identify policy measures to:
    - Improve ULAB recovery rates in an environmentally sound manner
    - Minimize any environmental impacts associated with ULAB recovery
    - Reduce the risk of population and occupational lead exposure
4. Prepare a Regional Strategy based on synergies

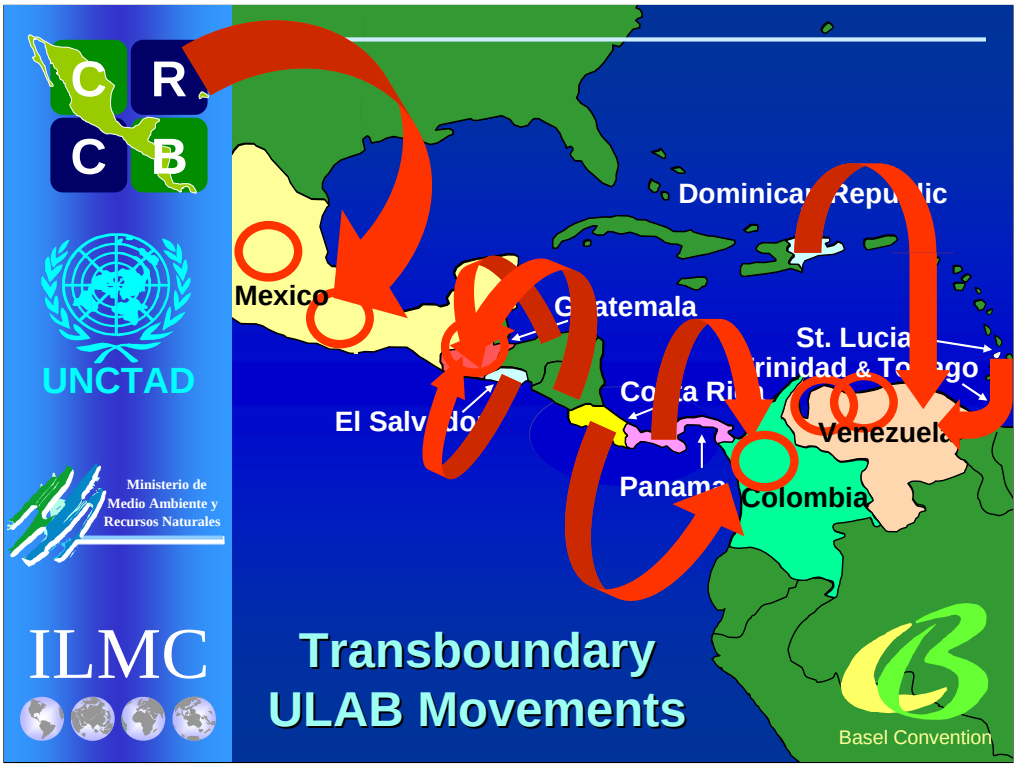
Regional ULAB Recovery Project

But the Basel Secretariat is not an accredited Auditor and under the present charter it cannot be a Certification Body. So the Basel Secretariat follows the agreed definition of the term “Environmentally Sound”, but it is not mandated to assess or evaluate the management of a waste stream for conformance with the appropriate Technical Guidelines.

Furthermore, at the start of the ULAB Recovery Project there was no suitable Assessment Tool applicable to the Technical Guidelines.

Regional ULAB Recovery Project

Consequently the Basel Secretariat decided to partner the Green Lead Work Group that were developing an Assessment Tool specifically for the Environmentally Sound Management of ULAB in the context of Life Cycle Management. Both parties agreed to work together to develop the Assessment Tool in a way that would be compatible with the Basel Technical Guidelines, thereby enabling the Tool to be used to assess conformance and facilitate the compilation of list of Environmentally Sound ULAB Recyclers.

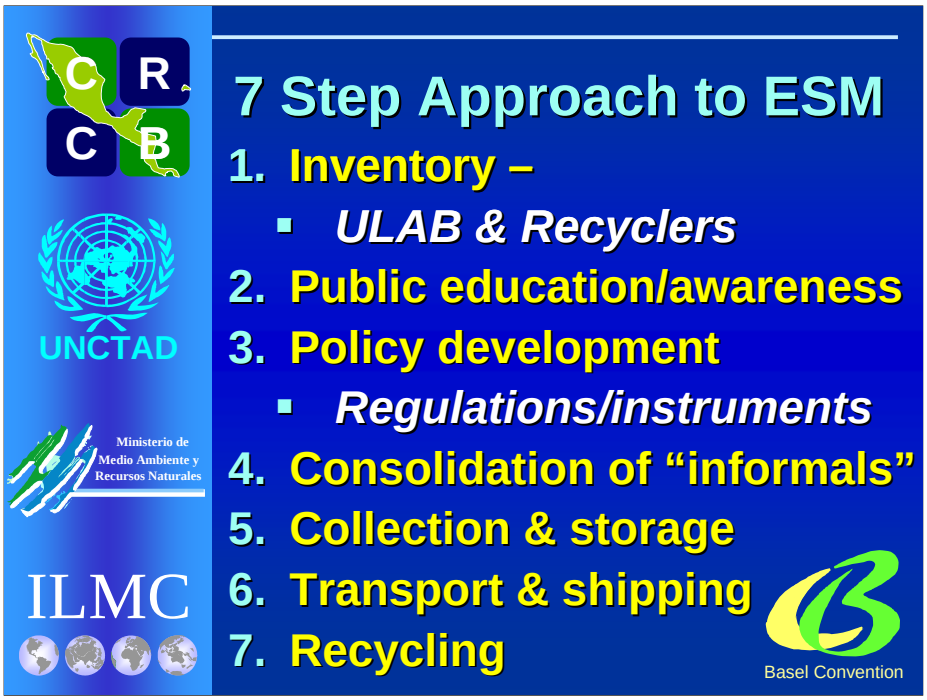


Recycling Plant Visits

In the course of the Project, Recycling Plant Assessments for compliance with the Basel Technical Guidelines were carried out in Mexico Guatemala, Colombia, Venezuela and the Dominican Republic.

Only the smelter in the Dominican Republic failed to meet the necessary criteria, but this smelter is in the process of being rebuilt and will be assessed again next year.

The synergies between those countries in the Region with environmentally sound recycling plants and those countries without such facilities was now clear and the strategy for a Regional recycling policy within the context of the Basel Convention and the Transboundary movement of ULAB was apparent.



SBC ULAB Project – Outcomes

There have been some significant outcomes from this project, namely:

1. A Model seven step process to achieve Environmentally Sound Management (ESM) of Used Lead Acid Batteries (ULAB).

i. The first stage is to complete an inventory of the likely sources of ULAB, with particular attention to the quantities, collection mechanisms, collection rates and possible trends in ULAB generation. The inventory should also include a list of licensed secondary lead plants,

ii. ULAB collection schemes will only be effective if the public is aware of them and the benefits of recycling together with an appreciation of the dangers of allowing ULAB to be dumped into the environment or recycled by unlicensed operators.

iii. There is an emphatic need for regulation and enforcement of environmental and occupational health standards. Current regulations and instruments need to be critically reviewed and strengthened where necessary.

iv. A persistent threat to the environment and the population are the recovery operations of many unlicensed battery reconditioners and smelters. These operations consistently flout environmental regulations, but are notoriously difficult to close down and will demand the utmost ingenuity to change their ways.

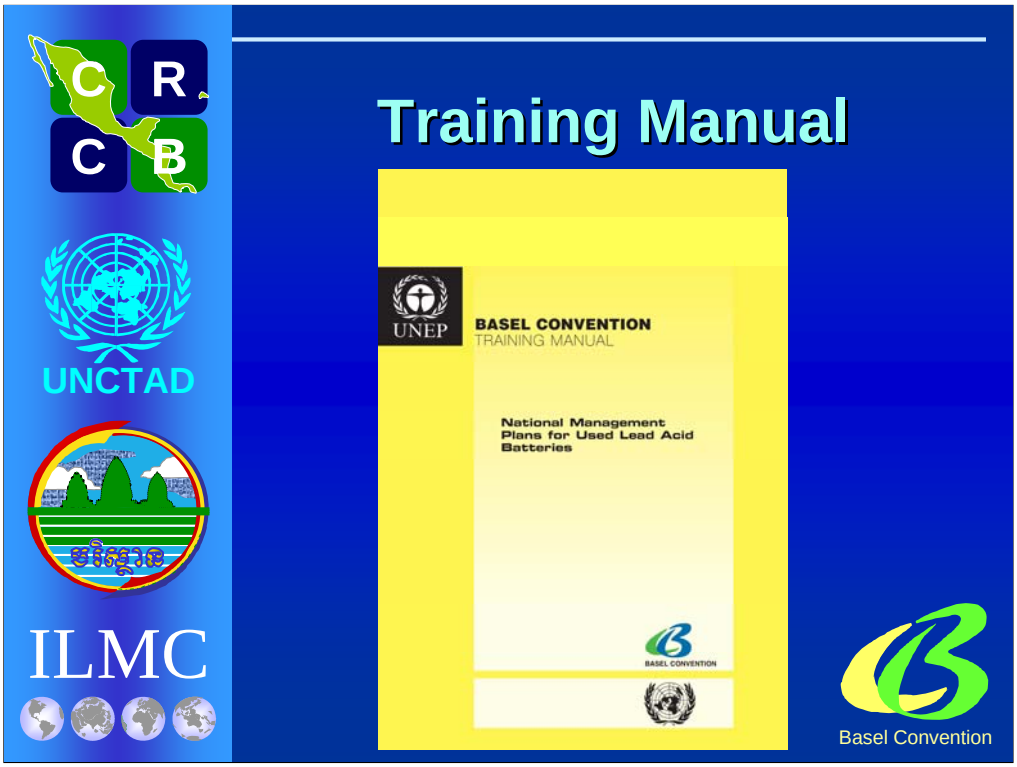
v-vi The SBC's Guidelines provide a practical approach to facilitate the preparation of procedures for collection, storage, transport and shipping of ULAB.

vii For those countries without smelting capacity this model will end at step number 6, but those countries with environmentally sound smelters proceed to the final stage and recycle ULAB from Domestic and imported sources.

SBC ULAB Project – Outcomes

There have been some significant outcomes from this project, namely:

1. A Model seven step process to achieve Environmentally Sound Management (ESM) of Used Lead Acid Batteries (ULAB).
2. A strategy to restrict the illicit activities of the *"informal sector",* whilst providing them opportunities to work in the "*formal sector*" collecting ULAB for shipment to a licensed smelter.
3. A comprehensive Training Manual that covers all the requirements of the Technical Guidelines and the Model seven step approach to achieving environmentally sound management of used lead acid batteries at a National Level.
4. A Regional Strategy agreed by ten Countries as part of the Pilot Project for the Environmentally Sound Recovery of Used Lead Acid Batteries in accordance with the Basel Technical Guidelines.



SBC ULAB Project – Training Manual

I will just take a moment to give you an insight into the eight chapters of the Training Manual, because the manual compliments the Technical Guidelines.

The Guidelines state, “what to do”, and the Manual explains in detail, “How to do it”.

The Manual was complied based on the work undertaken during the Project in Central and South America and the Caribbean, but it was tested in Cambodia by using it as the framework for the development of a National Action Plan.

SBC ULAB Project – Training Manual

Chapter 1 explains precisely how to conduct an accurate national inventory of used lead acid batteries, essential to prepare a National Action Plan.

Chapter 2 provides a range of illustrations, graphics and interactive examples of best practice for Used Lead Acid Battery collection, storage, transport and shipping.

Chapters 3 & 4 deal with the different strategies required to control the environmental performance of the formal sector and restrict the undesirable activities of the “informals”.

Communication, information and education issues, including public awareness and community engagement are covered in Chapter 5.

Of concern to nearly all the governments of Central America is Site Remediation and cost effective options are outlined in Chapter 6.

Chapter 7 covers the essential elements of occupational health and safety at every stage to the Used Lead Acid Battery recovery process.

And finally, Chapter 8 provides a step by step explanation of the Basel Convention’s requirements and obligations concerning the control of Transboundary Movements of used lead acid batteries.