

**Taller Centroamericano de Capacitación
sobre la Gestión Ambientalmente
Responsable de Residuos de Aparatos
Eléctricos y Electrónicos**

**Implementing Regional ULAB Recycling
Strategies for Central America, Venezuela,
Colombia and the Caribbean**

Impacts and Consequences

**San Salvador
El Salvador
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Participating Countries

The initial Project began in 2002 and ten countries participated in the implementation phase of the Pilot study, namely; Mexico, Guatemala, 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 Secretariat in Geneva (SBC). Assistance was also given by the University of the West Indies (UWI) in Trinidad and the International Lead Management Center (ILMC).

Regional Recycling Project

Initial Study Objectives

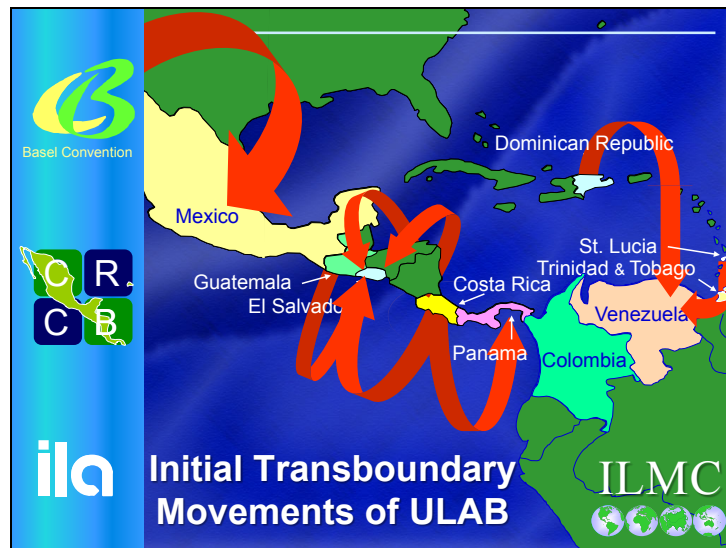
1. Review National Practices
2. Classify Recyclers with ESM
3. Identify policy measures to:
 - Improve ULAB recovery
 - Reduce Lead exposure
 - For a Regional Strategy

Regional Recycling Project

The Objectives of the initial study were to:

- Review National domestic practices for recovering and recycling ULAB, including any “informal sector” recycling.
- To inspect, assess and categorize all facilities for ESM, that is, collection centres and recyclers for compliance with national legislation and conformance to the Basel Technical Guidelines for the Environmentally Sound Management of ULAB.

- Then when all the data and information is collated to identify Policy measures to:
 - Improve the rates for ULAB recovery nationally and regionally
 - Where necessary to examine ways and means to reduce environmental contamination and population exposure to Lead.
 - To utilize synergies in the participating countries to develop and agree a Regional Strategy for the ESM of ULAB.



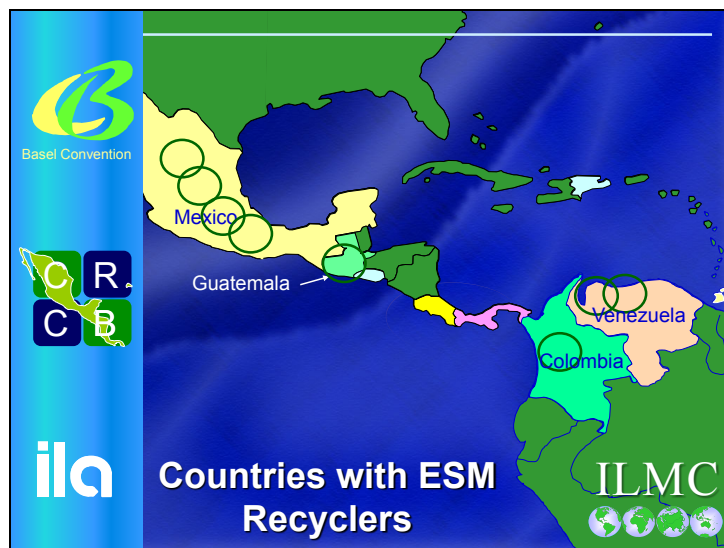
Initial Trans-boundary Movements of ULAB

At the start of the Project ULAB were traded across the region. ULAB were imported into Mexico from the USA under NAFTA; into El Salvador from most of the countries in Central America, including Guatemala, Honduras, Nicaragua and Costa Rica; into Panama from Costa Rica; into Venezuela from Trinidad, St. Lucia and the Dominican Republic. However, only the Governments of Mexico, Trinidad and Venezuela were in compliance with the Basel Convention for the transboundary movement of the ULAB.



Recycling Plant Visits

During the first phase of the Project the ILMC inspected all the known Lead Smelters in the Region that were recycling ULAB. That is, four plants in Mexico, one in Guatemala, El Salvador, Costa Rica, Panama and Colombia, two in Venezuela and one in both Trinidad and the Dominican Republic.



Countries with Environmentally Sound Recyclers

Regrettably, the smelters in El Salvador, Costa Rica, the Dominican Republic and Panama were not operating to the required standards and because improvements at that time were not possible, recycling operations were either restricted or the plants shut down. However, the recycling plants in Mexico, Guatemala, Colombia and Venezuela were assessed to be environmentally sound and these plants were nominated to be Regional ULAB Recycling "Hubs".



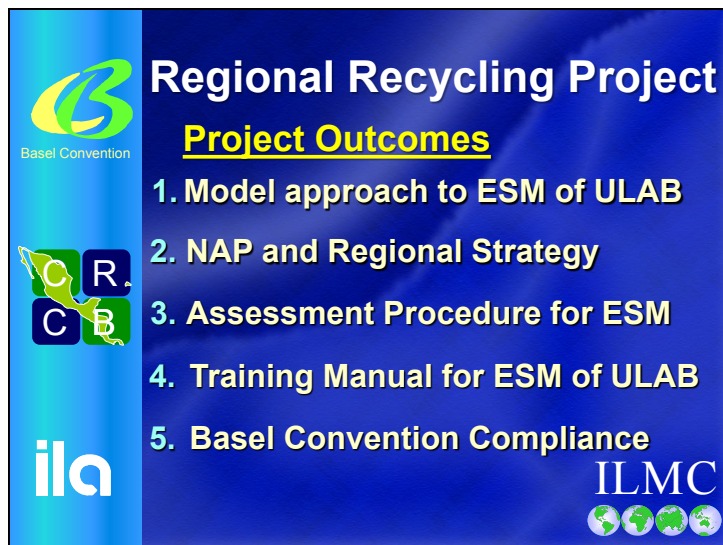
Countries without Environmentally Sound ULAB Recycling Plants

Although there were only 10 countries initially participating in the Pilot Study, such was the interest in this project in the region that in total 20 countries contributed to the data and information collated. As expected, there were far more countries identified without environmentally sound recycling plants, in fact, 16 in total.



Regional Strategy

The Regional Strategy was now apparent and would build on the synergies established during the study, so that those countries without environmentally sound ULAB recycling plants, would collect and export their ULAB in compliance with the Basel Convention to the nearest and most convenient recycler listed as environmentally sound. So ULAB generated in Central America would, for the most part, be sent to Guatemala and ULAB from the Caribbean Island States would be exported to Venezuela.



Project Outcomes

- The outcomes from the initial phases were:
- A Model seven step process to achieve Environmentally Sound Management (ESM) of Used Lead Acid Batteries (ULAB).
 - National Action Plans for each participating country were completed and a Regional Strategy was agreed by all ten Countries for the Environmentally Sound Recovery of Used Lead Acid Batteries in accordance with the Basel Technical Guidelines.

- An Assessment Tool to determine conformance to the Basel Technical Guidelines and the level of Environmentally Sound Management was devised and adopted by the Project Steering Committee and the SBC.
- 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 was prepared and published in English and Spanish.
- Compliance with the Basel Convention was achieved for the Transboundary movement of ULAB in the context of the implementation of the Regional Strategy.

Project Outcomes

Model approach to ESM of ULAB

1. Inventory –
 - *ULAB & Recyclers*
2. Public education/awareness
3. Policy development
 - *Regulations/instruments*
4. Consolidation of “informals”
5. Collection & storage
6. Transport & shipping
7. Recycling

Seven Step Model Approach to the ESM of ULAB

I will just take a moment to explain the 7 stage Model for the ESM of ULAB

- The first stage is to complete an inventory of the likely sources of ULAB and the methods of recovery.
- Secondly Public awareness of the risks associated with poor ULAB recovery must be established.
- Current regulations and instruments need to be critically reviewed to highlight shortcomings in legislation or enforcement.
- Because of the persistent environment and health risks posed by illegal recovery operations it is important to track down all such operations.
- Current practices for the collection and storage of ULAB have to be observed and compared to the procedures published in the Basel Technical Guidelines.
- The transport or shipping of ULAB has to be checked for compliance with safe working practices and the Basel Convention for the transboundary movement of ULAB.
- For those countries without smelting capacity the model ends at step number 6, but those countries with smelters proceed to the final stage to consider the environmental performance of the recyclers.

SBC ULAB Project – Training Manual

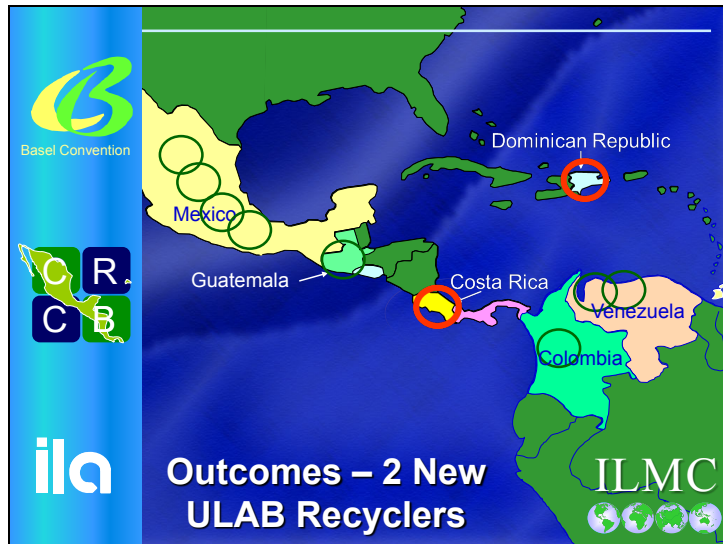
I will just take a moment to give you an insight into the eight chapters of the Training Manual, because the manual complements the Technical Guidelines.

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



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.



Outcomes – Two New Recycling Plants

In 2012 two new recycling plants were commissioned in Costa Rica and the Dominican Republic with investments from the private sector exceeding US\$ 25M.

These two plants replaced the operations inspected in 2002 and are environmentally sound. No effluent is discharged to the environment, plant emissions are within Government Limits and both employ the Green Slag process that produces an inert solid residue.



Costa Rica – Pb Metals SA



Industrias Meteoro S.A. - Dominican Republic

Project Outcomes

Basel Convention

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Dedicated ULAB Collection Vehicles

ILMC

Outcomes – Dedicated ULAB Collection Vehicles

Not only that, companies involved with the recovery of ULAB have introduced dedicated vehicles to the collection of ULAB from retailers and garages. They display hazard warning decals and have specially training drivers.

Outcomes – Improved Packaging

Throughout Central America and the Caribbean there has been a dramatic improvement in packaging thereby minimizing the risk of electrolyte leakage or damage during transit to a recycling plant.

Outcomes – Improved Storage Facilities

Likewise the standards in the intermediate storage facilities have been raised in compliance with the Basel Technical Guidelines.



Outcomes – Cambodian Project

The Training Manual has since been used by the Cambodian Ministry of the Environment to prepare a national inventory of ULAB and formulate a National Action Plan for the ESM of the recovery process.

Senegal ULAB Collection

Agreed Plan:

- Agree MOU with Gravita Senegal
- Set up Fair Pricing for ULAB
- Set up Collection Centre at TSM
- Recruit local Staff
- Train Staff and start collecting

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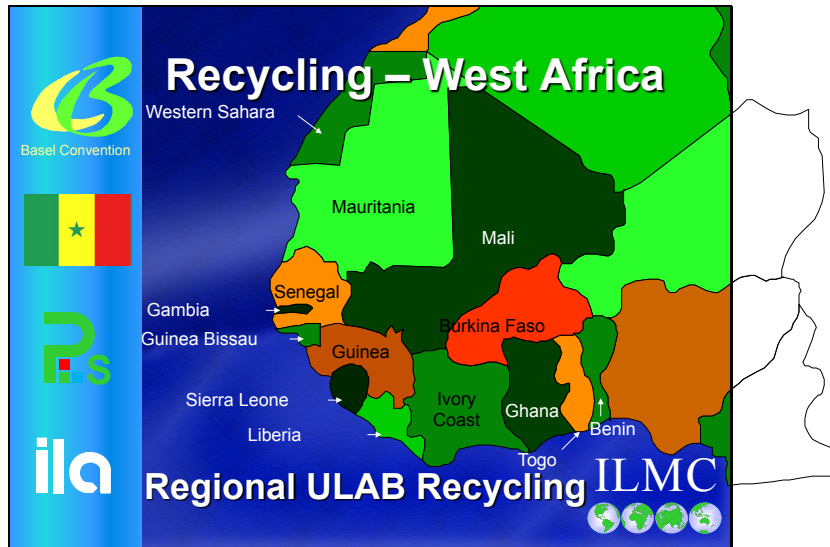
ILMC

Outcomes – Senegal -ULAB Collection Center Project

The 7 step model for the ESM of ULAB is also the basis for a Project in Senegal

- Firstly the Government, the Basel Convention Regional Center (BCRC) in Dakar, the ILMC and Gravita, a private sector recycler, have signed an MOU that sets out the responsibilities for each party in the development of ULAB Collection Centre and Recycling plant.
- The MOU contains rules applicable to Gravita to ensure that a fair market price is paid for ULAB collected at TSM and brought to the Center.

- A suitable location for the Collection Center has been found by the Government and a portable shop is being installed to receive ULAB.
- Local people from TSM will be recruited by the Government and the BCRC to manage and staff the collection centre.
- Staff will be trained by Gravita to test and service Lead Acid Batteries, and to package ULAB for collection and dispatch to the Recycling plant.



Outcomes –Regional ULAB Recycling Project for West Africa

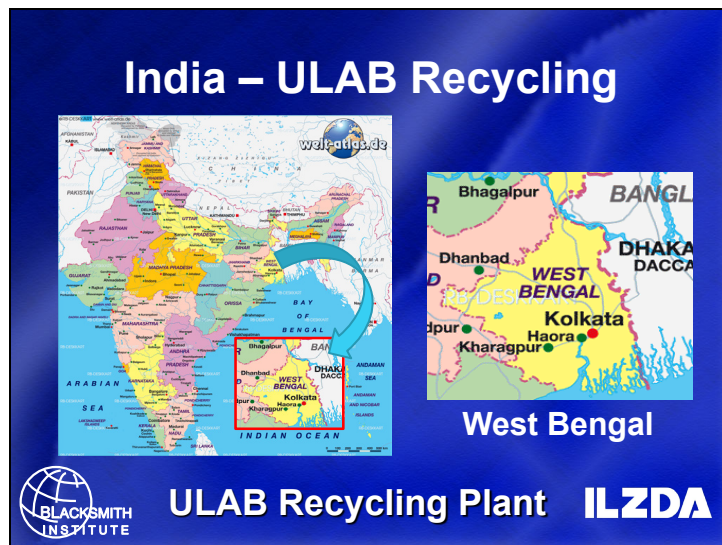
What does this Project mean for the future?

Of course the situation in Dakar is not an isolated case and the ILMC has been providing expertise for a ULAB Recycling Project in Ghana sponsored by the Government of the Netherlands.

The Gravita Group also have a Lead Smelter in Ghana and would be pleased to participate in a ULAB recycling project.

So a proposal has been submitted to the Dutch Government for funding to initiative a ULAB regional recycling project with hubs in Senegal and Ghana.





Outcomes – India ULAB Recovery and Recycling

Adopting the principles established in Central America and the Caribbean, and at the instigation of the India Lead Zinc Development Association in conjunction with the Blacksmith Institute, the ILMC is now involved with setting up ULAB recovery and recycling projects in the Provinces of Tamil Nadu and West Bengal.



Outcomes – Indonesia - ULAB Recovery and Recycling

At the invitation of the Blacksmith Institute and the BCRC for Indonesia, the ILMC is looking to participate in a ULAB Recovery and Recycling Project in Indonesia and at the invitation of the China Non-ferrous Metals Industry Association (CNIA) and the Basel Convention Coordinating Centre for Asia and the Pacific the ILMC has just started a project in China.