

TRANSBOUNDARY MOVEMENTS OF **WEEE IN LATIN AMERICA**



Authors

Carlos A. Hernandez S.
(United Nations Industrial Development Organization - UNIDO)

Daniel Ott
(Reverse Logistics Group - RLG)

Natali Lora Reyes
(Consultant)

Collaborators

Maria Anta (WEEE Forum)

Corey Dehmey (SERI)

Mike Easterbrook (SERI)

Uca Silva (RELAC)

Alfredo Cueva (United Nations Industrial Development Organization- UNIDO)

Keira Ives-Keeler (United Nations Industrial Development Organization- UNIDO)

Daniel Hinchliffe (Deutsche Gesellschaft für Internationale Zusammenarbeit - GIZ)

Heinz Böni (EMPA)

Reyna Ubada (ITU)

Florian Werthmann (Ecologicon)

Elisabeth Smith (StEP Initiative)

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Disclaimer

This StEP document has been developed within the framework of the "Transboundary Movements in Latin America" project of the StEP Working Group for Latin America. The document complies with the basic principles of StEP and contributes to its objectives of solving the WEEE problem. However, not all StEP members necessarily endorse the conclusions of this publication.

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ABBREVIATIONS

EEE: Electrical and Electronic Equipment
EWAM: Electronic Waste Academy
TBM: Transboundary Movement
OECD: Organization for Economic Cooperation and Development
PIC: Prior Informed Consent
WEEE: Waste Electrical and Electronic Equipment
StEP: Solving The E-waste Problem
CRT: Cathode Ray Tubes
EU: European Union

INTRODUCTION

StEP is an international initiative whose acronym in English stands for Solving The E-waste Problem¹, Solving the problem of electronic waste, and which involves a network of organizations committed to the development of sustainable solutions for the management of Waste Electrical and Electronic Equipment - WEEE - from a life cycle perspective. StEP facilitates research, analysis, and dialogue among more than 35 members from various companies, international organizations, governments, NGOs and academic institutions around the world, which aim to enhance cooperation and facilitate communication between members, in order to jointly address the problems that arise around the management of WEEE.

Within StEP, a regional working group for Latin America and the Caribbean, LAC, was formed. This working group, which was created at the end of 2017 and has been active since the beginning of 2018, has the following objectives:

- Collaborate on concrete proposals that provide solutions to priority WEEE-related issues for the region.
- Support knowledge and experience exchange among StEP members and LAC countries on WEEE-related issues.
- Stimulate communication between StEP members with an interest in the region.
- Support information sharing on ongoing projects and activities.

Among the current members of the StEP working group for LAC are: EMPA, DRZ, GIZ, ITU, RELAC, RLG, UNIDO, WEEE FORUM, and SERI, amongst others. This group of actors chose as a priority theme for 2021 Transboundary Movements (TBM) of WEEE in the region, which was developed through the regular meetings of the group, but also through sessions and additional activities, which are described in this publication.

The purpose of this document is to highlight the difficulties reported by WEEE recyclers in the region, as well as the difficulties expressed by government representatives in the implementation of regulations. However, above all, this document seeks to highlight the solutions proposed by each group to facilitate TBM of WEEE and to support actions leading to the circularity of the materials present in this waste.

The first chapter includes a report on the current situation of transboundary movements of WEEE, including the regulatory framework of the Basel Convention, the amendments, and other regional agreements, as well as quantities exported, destinations and current challenges in management of WEEE worldwide. The second chapter includes the results of the project, the methodology developed by the StEP working group for LAC, the surveys developed, and the discussion panels with WEEE recyclers and government representatives of the LAC region in charge of TBM. Chapter three includes the conclusions of this project, as well as some proposed solutions to facilitate TBM in the short and long-term.

Finally, in the fourth chapter is comprised of the questionnaires developed for the two target groups of this work (WEEE recyclers and government representatives) included as annexes.

¹ <https://www.step-initiative.org/>

1.

CURRENT SITUATION OF TRANSBOUNDARY MOVEMENTS OF WEEE

1.1. The Basel Convention

The Basel Convention² on the Control of Transboundary Movements of Hazardous Waste and their Disposal, emerged in the 1980s, following the discovery of toxic waste deposits from other countries in developing countries. The Convention aims to protect human health and the environment against the harmful effects of hazardous waste, safeguarding countries from unwanted imports of this waste and controlling transboundary movements of these and other waste streams. (Listed in Annex II of the Convention)ⁱ, including WEEE. This Convention entered into force on 5 May 1992 and has been signed by 188 States Parties to date.

As a fundamental part of the Basel regulatory system for transboundary movements of hazardous waste, it provides that these movements are subject to notification and the Prior Informed Consent (PIC) procedure, so that such movements are only possible with the consent of the countries of export, transit, and import.

Ban Amendment

The Ban Amendment is an agreement adopted by the Parties to the Basel Convention, which prohibits the member states of the Organization for Economic Co-operation and Development (OECD), the European Union (EU) and Liechtenstein, from exporting hazardous waste as defined by the Convention to other countries, primarily to developing countries or countries with economies in transition. The Ban Amendment entered into force on December 5, 2019, when the required number of signatory countries was reached. However, flows between exporters and importers that have not ratified the amendment remain outside of the agreement and, therefore, are exempt from the ban.

The Ban Amendment includes the regulation of hazardous waste or waste with hazardous characteristics defined by the Basel Convention: electronic waste, obsolete ships, pesticides, flammable liquids, and most toxic heavy metals, among others. However, it does not include scrap metal, paper or plastic waste, unless they are contaminated or contain waste or materials with hazardous characteristics.



² <http://www.basel.int/>

Plastic Waste Amendments to the Basel Convention

At the fourteenth meeting of the governing body of the Basel Convention, the Conference of the Parties (COP-14, May 2019) in its Decision BC-14/12 adopted three amendments to Annexes II, VIII, and IX of the Convention, with the objective of improving the control of transboundary movements of plastic waste and clarifying the scope of application of the Convention for these wastes.

The amendments are concerning changes to the scope of plastic waste covered by the Basel Convention, which have a significant impact on the rules governing the movement of these wastes across international borders. This decision specifies new categories of plastic waste subject to the Convention in terms of:

- Transboundary movement control procedure and the conditions under which this procedure does or does not apply.
- Waste minimisation provisions.
- Provisions on the environmentally sound management of waste.

The amendment to Annex VIII, with the insertion of a new category A3210, clarifies the scope of plastic waste that is presumed to be hazardous and therefore also subject to the PIC procedure.

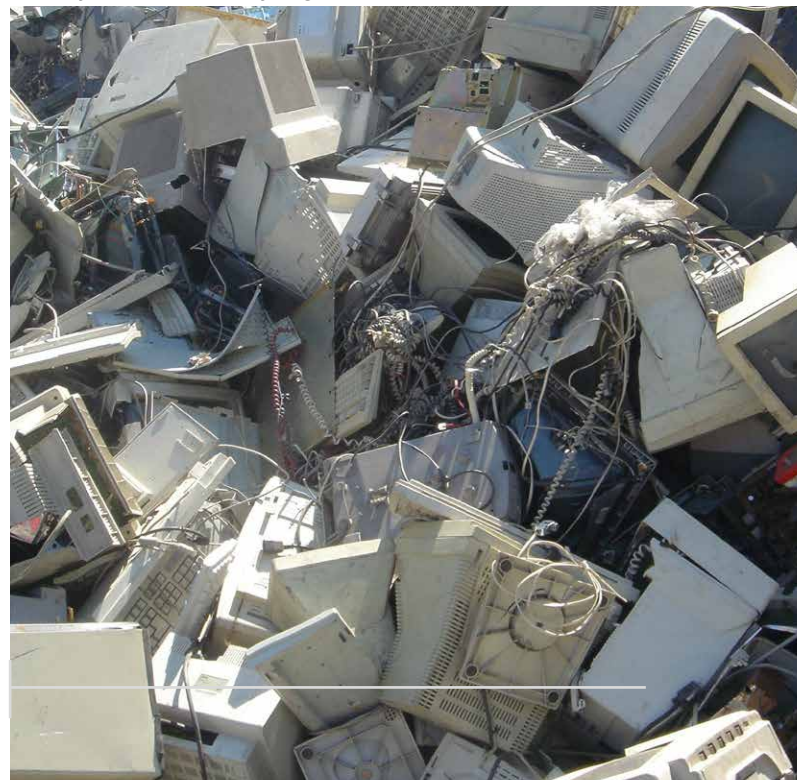
The amendment to Annex IX replaces the existing B3010 category with the new B3011 category, clarifying the types of plastic waste that are presumed non-hazardous and, therefore, not subject to the PIC procedure. This new category includes plastic waste consisting exclusively of a non-halogenated polymer or resin, selected fluorinated polymers or mixtures of polyethylene,

polypropylene and/or terephthalate of polyethylene, provided that the waste is recycled in an environmentally sound manner and almost free from pollution and other types of waste.

The third amendment is the insertion of a new category Y48 in Annex II that covers plastic waste, including mixtures thereof, unless it is hazardous (to be included in category A3210) or presumed non-hazardous (to be included in category B3011). These new amendments are effective as of January 1, 2021.

Regarding plastics from WEEE, the interim guideline *"Technical guidelines on transboundary movements of electrical and electronic waste and used electrical and electronic equipment, in particular with regard to the distinction between waste and non-waste materials within the framework of the Basel Convention"* (Decision BC-12/5) will again generate debate in relation to whether this is a distinction between waste and non-waste and, therefore, whether or not they are affected by the control of transboundary movements.

Courtesy of Sustainable Recycling Industries SRI, 2022.



1.2. Regional Agreements for Transboundary Movements

In accordance with Article 11 of the Basel Convention on bilateral, multilateral, and regional agreements, the following regional agreements have been established around the world, which could be concluded in LAC with State Parties or non-Parties, provided that such agreements or arrangements do not undermine the environmentally sound management of wastes established by the Basel Convention:

Bamako Convention

To complement the Basel Convention, African nations established the Bamako Convention in January 1991, which entered into force in 1998. It prohibits the importation of hazardous materials and waste into **Africa**, as well as dumping into oceans and inland waters, and the incineration of hazardous waste; it establishes the precautionary principle and guides the management of this waste within the continent, as well as cooperation between African nations.

Waigani Convention

This agreement constitutes the regional implementation in the Pacific **island countries** of the international regime for the control of hazardous waste (the Basel, Rotterdam, and Stockholm Conventions). This agreement also covers radioactive waste; and its territorial coverage within the South Pacific region includes the Exclusive Economic Zone of each Party (200 nautical miles) (instead of extending only to the outer limit of each Party's territorial sea (12 nautical miles) as in Basel)². This agreement entered into force in 2001 with twelve (12) States Parties.

OECD Decision

This decision provides a framework for the member countries of this organization to control transboundary movements within the OECD area, facilitating and simplifying the movement process. In November 1998, after the adoption of two detailed lists of new Annexes VIII and IX of the Basel Convention, the revision of Decision C (92) 39 / FINAL of the OECD was promoted in order to harmonize the procedures and requirements, and thus avoid duplicating activities with the Convention. This review resulted in the adoption of Decision C (2001) 107 / FINAL in May 2002, which applies only to transboundary movements of waste that are destined for recovery or recovery operations within the OECD area (OECD, 2009).

As a result of the OECD Decision on transboundary movements of waste for recovery operations, article 14 of European Regulation No. 1013/2006 establishes that the competent authorities of destination that have jurisdiction over specific recovery facilities may decide to issue prior authorizations for these facilities. This means that the destination authority will not object to shipments of certain types of waste to the facility and, consequently, the objection period by the dispatch and transit authorities is reduced to seven (7) business days.

1.3. Amendments to the Basel Convention

In accordance with Article 17 of the Basel Convention, the Parties may propose amendments taking into account scientific and technical considerations, which are evaluated and adopted at the meeting of the Conference of the Parties.³ Table 1 lists the main amendments on WEEE issues for the Basel Convention.

Table 1 Amendments to the Basel Convention

PROPOSAL	SECTION TO BE MODIFIED	¿WHAT IS IT PROPOSED?	¿HOW DOES IT AFFECT?
Russian Federation	Article. 6 parr. 2 (prior consent)	Set a deadline for responding to notifications, as in the current regulation there is no time limit for the importing countries to respond. It is proposed that, "The State of import shall respond to the notifier in writing within 30 days, consenting to the movement with or without conditions or denying permission for the movement, or requesting additional information". This amendment includes modification to the PIC procedure with respect to transboundary movements.	<ul style="list-style-type: none"> ● Contribution to expedite the processing of the PIC, however, it is not clear when the proposed time begins. ● "Only" one term is proposed for the entire PIC procedure, but an important term. ● It would have to be ratified by each individual Party to the Convention, because it is a change to the text of the Convention (and not an annex).
European Union	Annex IV (Disposal operations) and certain entries in Annex II (Waste requiring special consideration - households) and Annex IX (Waste not subject to transboundary movements)	Modify the description of the categories of disposal operations, considering: a) final disposal operations and b) recovery operations listed in Annex IV, where a discussion about electronic waste is presented to include a new recovery operation " <i>R20 Preparation for reuse (e.g., verification, cleaning, repair, reconditioning)</i> "	<ul style="list-style-type: none"> ● Obtaining an updated and modernized list of disposal operations. ● Important for the debate on the definition of electronic waste, as used electrical and electronic equipment that has been classified as waste, has been moved across borders and is destined to be prepared for reuse would be assigned to this new recovery operation R20 . ● It affects transboundary movements primarily through proposed changes to disposal operations in Annex IV. ● The R20 operation only applies when something is already classified as waste, many interpret that if, for example, a used EEE is combined with R20, that used EEE would automatically be classified as waste. This means that the issue of non-waste waste will also come back to the fore with this proposed amendment.
Ghana and Switzerland ³	Annex II (Waste that Requires Special Consideration - households), Annex VIII (Hazardous waste subject to transboundary movements) and Annex IX (Hazardous waste not subject to transboundary movements)	<p>Annex II: Proposal for a new category Y49: <i>Waste electrical and electronic equipment, including scrap, constitutes electronic waste that does not contain or is contaminated with Annex I components to the extent that the waste exhibits an Annex III characteristic</i>, which implies classifying electronic waste as non-hazardous, controlled in Annex II, which requires special consideration around the notification / PIC procedure.</p> <p>Annex VII: Proposal for new wording of category A1180: <i>Waste electrical and electronic equipment, including its scrap with components of Annex I to the extent that the waste presents a characteristic of Annex II</i></p> <p>Annex IX: Proposal for the suppression of entries B1110 and B4030.</p> <p><i>Note: the Swiss-Ghana proposal can be consulted through the following link: https://www.youtube.com/watch?v=hTHenFdcYk4</i></p>	<ul style="list-style-type: none"> ● All electronic waste moving across borders, regardless of whether or not it is characterized as hazardous under the Convention, would be subject to a mandatory PIC notification/procedure. ● More notifications for transboundary movements, but more transparency and control. ● Direct all electronic waste subjected to transboundary movements towards an environmentally sound management with state-of-the-art recycling technology, which guarantees a maximum recovery of resources.

³ At the time of this publication, the Ghana-Switzerland amendment proposal was approved at the Fifteenth Meeting of the Conference of the Parties to the Basel Convention (COP 15 Held in its face-to-face segment in Geneva, Switzerland, from 6 – 17 June 2022)

1.4. Exported amounts - current destinations - problems of illegal movements

All Latin American countries have ratified the Basel Convention and prohibit the importation of hazardous waste into their territories; however, none have specific prohibitions on the export of hazardous and other wastes, including electrical and electronic waste, as long as they are destined for recycling and in accordance with the Basel Convention.

According to the conclusions of the Regional E-Waste Monitor for Latin America: results of the thirteen countries participating in the UNIDO-GEF 5554 project, many countries in the region do not submit reports on transboundary movements to the Basel Convention, which makes it difficult to monitor and control electronic waste and its movements, within and outside the region. Although there is evidence of import and export of used EEE in the region, there is no official data or statistics for any of the countries.

For example, the study mentions that WEEE recyclers in Honduras export valuable parts, such as printed circuit boards, to Panama, Mexico, Canada and the United States, but these exports are not reported to the Basel Convention. The consequence of this lack of reporting is that WEEE can be exported to countries in which its environmentally sound management cannot be guaranteed, and therefore transboundary movements can lead to illegal shipments of this type of waste.

In Chile, CRT glass, connectors, and capacitors are stored until a sufficient volume is reached to be exported to recycling plants in Belgium. A national report on these movements has been provided to the Basel Convention.

According to the e-Waste Monitor, only nine out of the thirteen countries studied (Argentina, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Peru, Uruguay and Venezuela) presented annual national reports to the Basel Convention, in which it was possible to verify that six of them (Argentina, Costa Rica, El Salvador, Nicaragua, Peru and Venezuela) export WEEE fractions or parts, components, and commodities resulting from its disassembly to various destinations for treatment, recovery, and materials recovery.

Argentina made three exports in 2019 to three different EU countries for treatment and final disposal. El Salvador mainly exports materials/components extracted from electronic waste to countries/regions such as the United States, Mexico, and Asia (for example, South Korea, among others) for further processing, but data on quantities is not provided.

According to the reports submitted to the Basel Convention by the countries mentioned above, it is estimated that approximately 7,400 tons of electronic waste are reported as being exported by the countries of Latin America, as shown in Table 2.

Table 2 Imports (t) and Exports (t) of WEEE by Latin American countries

Country	National report available 2016-2019	Statistics available 2016-2019	Calculation of WEEE reported under the Basel Convention 2019-2019 ⁽³⁴⁾	
			Imports (t)	Exports (t)
Argentina	Yes	Yes	-	118
Bolivia (Plurinational State of Bolivia)	No	No	-	-
Chili	No	No	-	-
Costa Rica	Yes	Yes	-	1,287
Ecuador	No	No	-	-
Guatemala	Yes	Yes	-	-
Honduran	Yes	Yes	-	-
Nicaraguan	Yes	Yes	-	100
Panama	No	No	-	-
Peru	Yes	Yes	-	352
El Salvador	Yes	Yes	-	3,978
Uruguay	Yes	Yes	-	-
Venezuela (Bolivarian Republic of Venezuela)	Yes	Yes	-	1,551
Total	9 of 13	9 of 13	-	7,386

³⁴ Fuente: M. Wagner, C.P. Baldé, V. Luda, I. C Nnorom, R. Kuehr, G. Iattoni. Regional monitoring of electronic waste for Latin America: results of the thirteen countries participating in the UNIDO - GEF 5554 project, Bonn (Germany), 2022.

1.5. Current challenges in WEEE management

According to the literature, the management of WEEE in the context of transboundary movements is currently experiencing a series of challenges worldwide, as summarized below:

a) Definition of waste and non-waste

There are different definitions and interpretations of what is waste and what could still be considered used EEE, and waste. According to the Basel Convention (articles 2.1 and 2.4, respectively): **Wastes are "substances or objects which are disposed of, are proposed to be disposed of or are required to be disposed of under the provisions of national legislation" and, "Disposal means" any operation specified in Annex IV of the Basel Convention,"** which includes: incineration in an incineration chamber, co-processing, thermal treatment by controlled incineration and encapsulation and final disposal in a security landfill.

Used EEE can continue to be a product or a waste depending on the management to be applied in the country of destination, that is, depending on whether the transboundary movement is carried out:

- As second-hand goods.
- For reuse.
- For repair or reconditioning.

Therefore, it is necessary to adopt internationally agreed enforcement procedures for transboundary movements of waste for use and waste for disposal.

b) Nomenclature

Due to the definitions of waste or electronic waste and the connotation of hazardousness, there may be several classifications used in the description of electronic waste (lists of wastes in Annexes VIII and IX of the Basel Convention), which are generalized and often not legally defined.

Some examples of classifications used for transboundary movements of WEEE are:

- Entry A1180: Waste from electrical and electronic assemblies or scrap containing components.
- Entry B1110: Electrical and electronic assemblies: (...) intended for direct reuse⁴ and not for use or final disposal.

As part of the solution to this issue, an intersessional working group was established by the eleventh meeting of the Conference of the Parties (COP-11, May 2013), in order to continue the work towards the clarification of the terminology used in the Convention, including the description of e-waste entries. For the thirteenth meeting of the COP, the glossary of terms was adopted and the revision of Annexes I, III, IV and related aspects of Annex IX of the Convention began.⁵

⁴ Reuse may include repair, refurbishment, or upgrade, but not major reassembly.

⁵ <http://www.basel.int/Implementation/LegalMatters/LegalClarity/Glossaryofterms/SmallIntersessionalWorkingGroup/tabid/3622/Default.aspx>

c) Prior Informed Consent Procedure (PIC)

The Basel Convention includes a detailed Prior Informed Consent (PIC) procedure containing the requirements for transboundary movements of waste/hazardous waste. This procedure constitutes the core of the Basel Convention control system, according to which exporters must give prior notification of intended exports of wastes subject to the Basel Convention, so that transboundary movements are only possible with the consent of the countries of export, import and transit involved. For this reason, exporters often perceive or experience the PIC as a burden or inconvenience, because it is a slow, costly administrative process, with poor implementation by some countries, which can hinder or even prevent sensitive cross-border movements of electronic waste.

As a result of these concerns, the North Sea Resources Roundabout (NSRR) International Green Deal called on the European Commission to require all Competent Authorities in the European Union to recognize and implement the concept of "Fast-Track Notifications" and its related procedures, to increase the shipment of hazardous waste based on harmonized rules and procedures. This could be a valuable step towards the elimination of unnecessary barriers to the circular economy in Europe.

This concept aims to make shipments to EU WEEE recyclers easier and faster, so that these secondary raw materials in WEEE flow in the same way as primary inputs, which will promote the production of secondary raw materials for the European circular economy. In addition, this resource is expected to free up time and resources

for the authorities, which can then be used to combat the actual illegal exports of WEEE and its fractions. This fast track concept, once implemented effectively, can have a much greater impact/effect, even from LAC, as it can be used to ship any type of recyclable waste to any previously authorized facility.

Classifying WEEE destined for transboundary movement as hazardous or non-hazardous requires greater clarity in national regulations, as well as the implementation, surveillance, and strict control of such regulations. With that in mind, Marco Buletti, representative of Ecopartner, speaker on the third day of the Electronic Waste Academy (EWAM) 2021, in his conference on October 27, recommended:

- Observe the use of Basel Convention lists of wastes, in particular those in Annexes VIII and IX.
- Develop legally-binding and conclusive national lists of hazardous wastes.
- Consider the possibility for an individual government to classify certain waste streams as merely subject to control for transboundary movements without individual hazardous/non-hazardous testing.
- Develop national test procedures/classifications or use and strengthen existing procedures.
- Cooperate with stakeholders.

2. PROJECT RESULTS

2.1. Methodology

In 2021, the StEP LAC working group for LAC addressed the Transboundary Movements (TBM) of WEEE in the region as a priority issue, considering the need, on the one hand, to promote the use of fractions from WEEE processing, and on the other, the environmentally sound treatment of hazardous in countries with available technologies.

To this end, the work focused on two target groups: 1) WEEE recyclers and 2) Government representatives from the LAC region in charge of TBM, with whom the following activities were carried out:

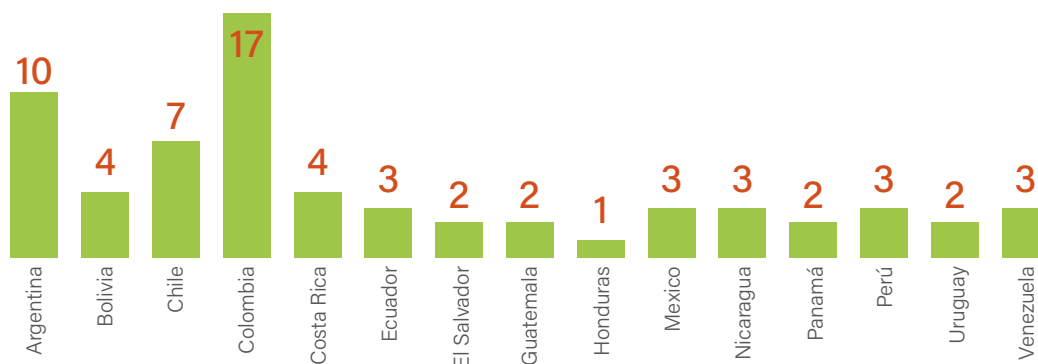
- a) A survey for WEEE recyclers was sent out between July 6 and 21, 2021, to find out about, among other aspects, their experiences with exports and imports of WEEE and the difficulties they face.
- b) A panel discussion with WEEE recyclers was held on August 9, 2021.
- c) A survey aimed at government representatives was sent out between August 11 and 25, 2021, that focused on the role of the authorities and the speed of procedures.
- d) A panel discussion with government representatives was held on September 9, 2021.
- e) Lessons learned/best practices analyzed and evaluated.
- f) A panel discussion with both groups, held on April 6, 2022 was held to discuss findings and to further explore selected topics.

The most important activities and results of the above processes are explained below.

2.2. WEEE managers survey results

The survey for WEEE recycling companies was sent to 66 companies from 15 countries in Latin America and the Caribbean, with significant representation from countries such as Colombia, Argentina and Chile (Figure 1).

Figure 1 WEEE managers contacted by LAC country



Responses were received from 19 recyclers from 12 countries, which is equivalent to about 30% of the management companies contacted. Respondents have an average of ten (10) years of experience in the WEEE market and 84% of respondents reported direct experience in transboundary movements; however, they do not have experience of exporting directly to other Latin American countries as most transboundary movements take place from developing countries to industrialized countries.

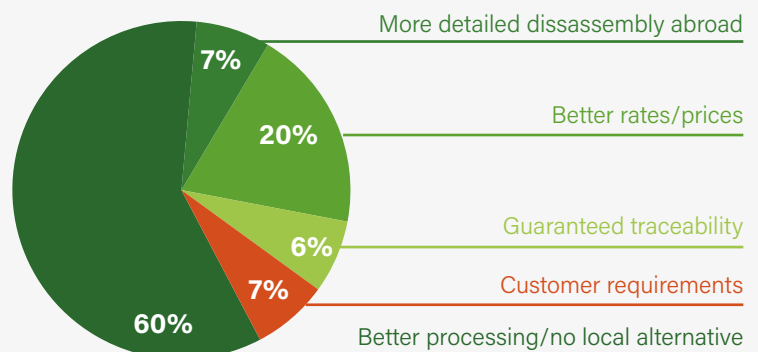
The most-commonly exported WEEE fractions/components are circuit boards (30%), other components (19%) and non-ferrous metals (14%). The main destinations of each of these fractions are shown in Figure 2.

Figure 2 Components/Fractions exported and main countries of destination

FRACTIONS	MAIN DESTINATIONS
Electronic cards (30%)	USA, Belgium, Japan, Holland
Other components (19%)	Korea
Non-ferrous metals (14%)	China, Europe, USA, Korea, Canada
Wires (12%)	
Plastics (9%)	China
Toner and/or ink cartridges (7%)	USA
Ferrous metals (5%)	
Batteries (5%)	

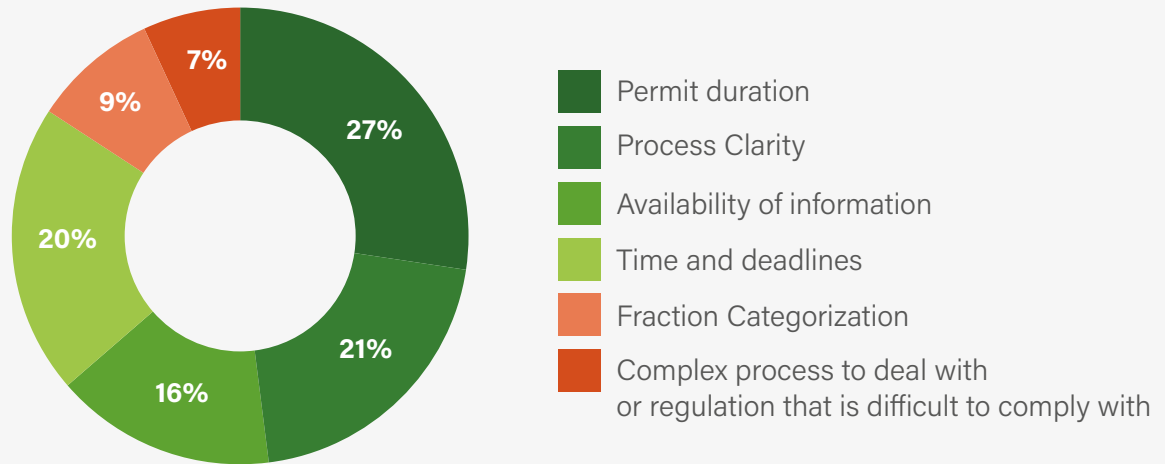
Figure 3 Main reasons for exporting fractions

Among the main reasons that lead managers to export WEEE fractions are: not having local processing alternatives / access to better alternatives abroad (60%), and getting better prices for materials (20%), as illustrated in Figure 3.



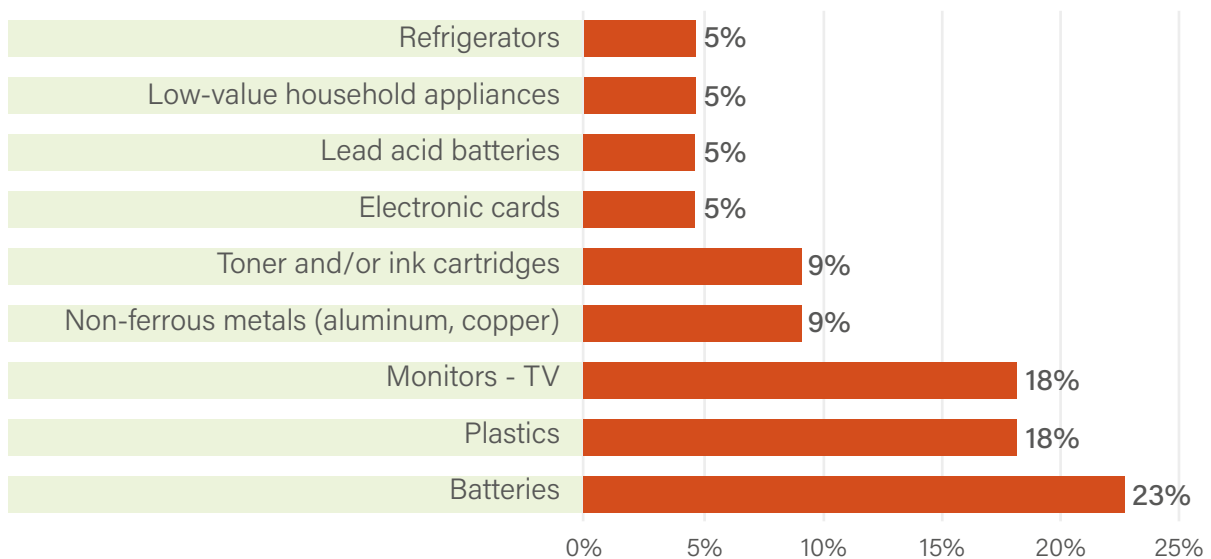
Regarding the main challenges faced by recyclers for transboundary movements of WEEE and its fractions, Figure 4 shows that 84% of the challenges reported are related to the administrative procedure, which hinders or delays the transboundary movement.

Figure 4 Challenges of moving across borders



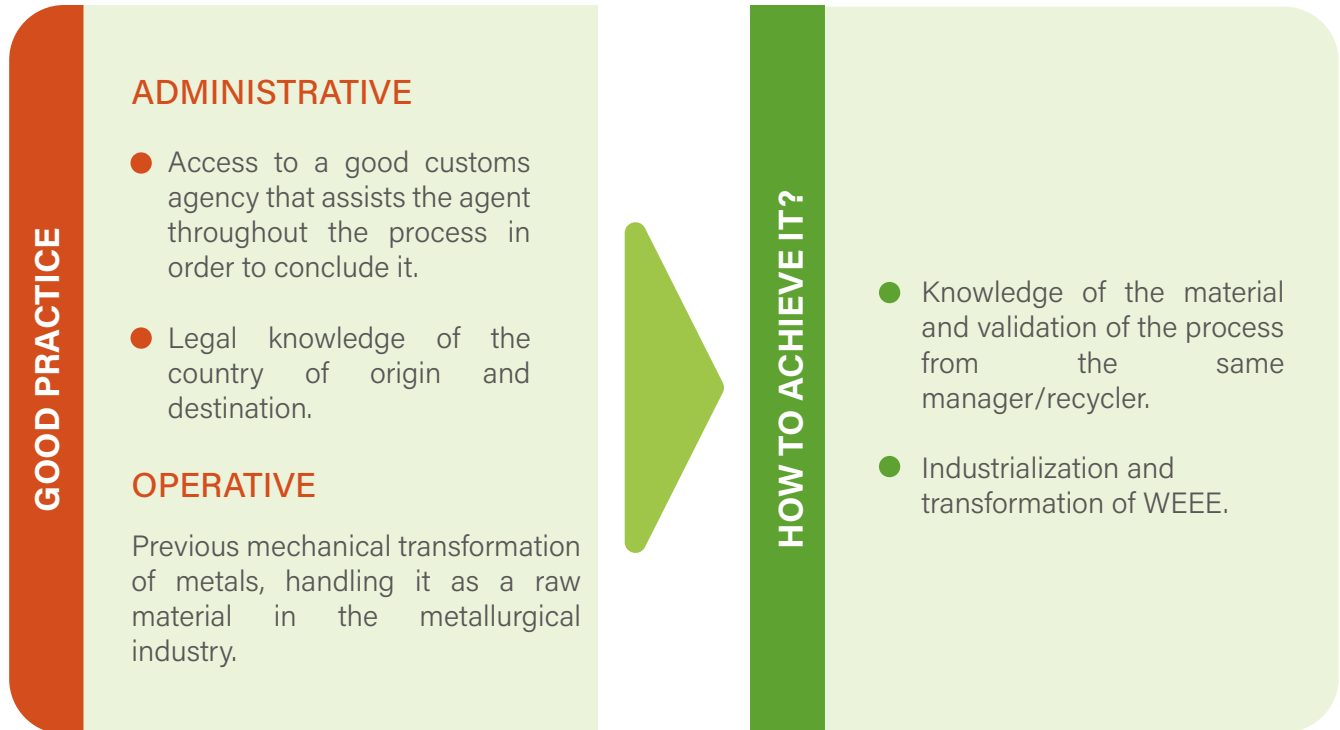
In addition, managers stated that they would consider exporting the following fractions if the process were easier; batteries (23%), plastics (18%) and monitors or televisions (18%) (see Figure 5).

Figure 5 Fractions of interest with a more agile export process



On the other hand, the survey identified good practices currently applied by management companies, in terms of both operational and administrative aspects of the procedure, as well as recommendations on how to apply them.

Table 3 Good practices and application recommendations



2.2.1 Results of the Panel Discussion with WEEE Managers

The panel discussion with WEEE managers was conducted online (as a webinar) and took place on 9 August 2021. The main objective was to discuss and discuss the survey results with the following panel of experts:

- Juan Fernando Jaramillo, G-Solutions, Colombia
- Jhoanna Rosales, Vertmonde, Ecuador
- Guillermo Pereira, Fortech, Costa Rica
- Farid Nallim, Reciclarg, Argentina

The moderator of the panel was Carlos Hernandez, Coordinator of the UNIDO-GEF LAC E-waste project.



From this panel, the following experiences regarding the export of WEEE can be highlighted:

- Positives:**
- There is knowledge among the recyclers of how the permit should be processed, thanks to years of trying to carry out exports within the framework of the Basel Convention.
 - Notifications and responses from the country of destination are quite agile.
 - Some environmental authorities promote the formalization of WEEE recyclers.

Negatives:

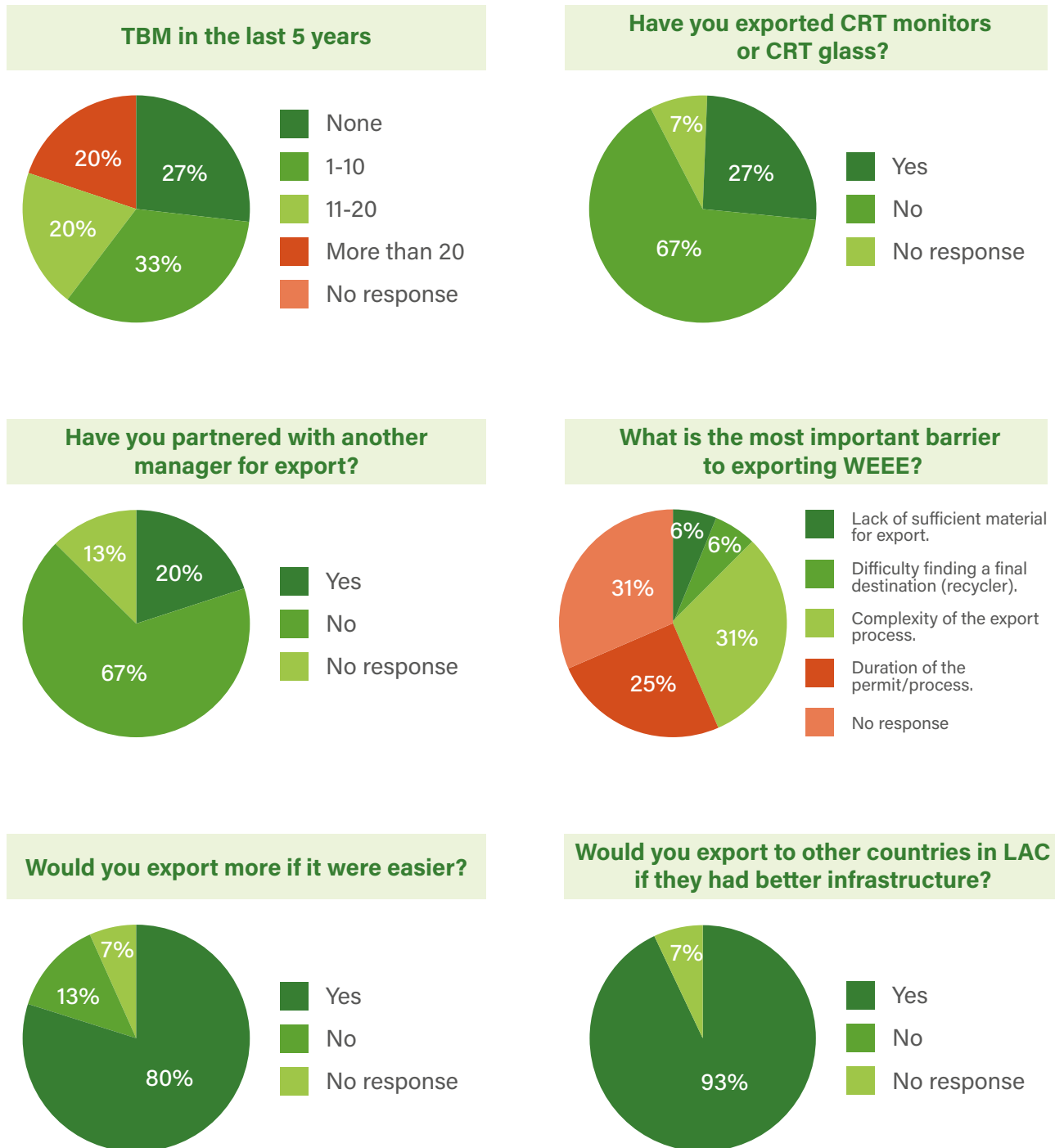
- The process for granting the permit is not so clear, criteria are not unified, therefore obtaining the permit depends on the interpretations of the official on duty and the continuity and success of the process is difficult due to the high turnover of personnel in these entities.
- If the permit is approved, it can be enough for one or two exports per year, but there are cases in which the permit expires before an export can be carried out and sometimes without the possibility of renewal.
- Waiting times for a response to the Prior Informed Consent Procedure (PIC) from the authorities are usually long. This can prevent transboundary movements from being carried out under the Basel Convention as by the time a notification or consent response is received, the permits/policies required for processing have already expired.
- Lack of knowledge of the Basel Convention and its application in customs in most countries. This leads in some cases to a lack of export control, and in others to additional port permits and certifications being required to comply with export requirements under the Convention, and therefore a lack of coordination with the application of international permits and unified regulation in maritime ports.
- Some of the authorities in the region in charge of TBM permits focus on a rigid regulatory scheme that favors the informal market or so-called black market. This makes it extremely laborious for formal recyclers to export WEEE and its fractions, while informal recyclers easily escape the regulatory framework. There is a perception that the formal and not the informal are regulated and that it is more costly to do things correctly through the TBM, under the Basel Convention than irregularly without even requesting it.
- Limitations regarding shipping companies for the movement of electronic waste to Europe. Due to the type or category of waste, not all shipping companies claim to be able to transport it, which can increase export costs and the carbon footprint, since shipping companies specializing in this waste generally make more transit stops in other countries.

To conclude, this panel discussion and considering that one of the difficulties expressed by recyclers in the surveys is that the authorities in charge of TBM often do not have enough clarity about WEEE exports, or there are no unified criteria, they were asked about the possibility of carrying out training at the regional level with customs officials' participation. The recyclers responded that after having a well-developed process in place, this would be a good initiative that could be made more accessible by using virtual methods as a way to

simplify the current problem. They stated that they are stalled by the lack of criteria at the Latin American level, so it would be necessary to carry out such training, involve customs and port personnel and, as far as possible, create recordings to ensure that material is available for new officials of the different entities in the region. Likewise, it was suggested to create a web portal or library, to have decisions within a regional body and not limit them to officials, also involving customs and ports.

To conclude the session, through the Kahoot platform, additional questions were asked of the participating management companies, the results of which are shown below (Figure 6).

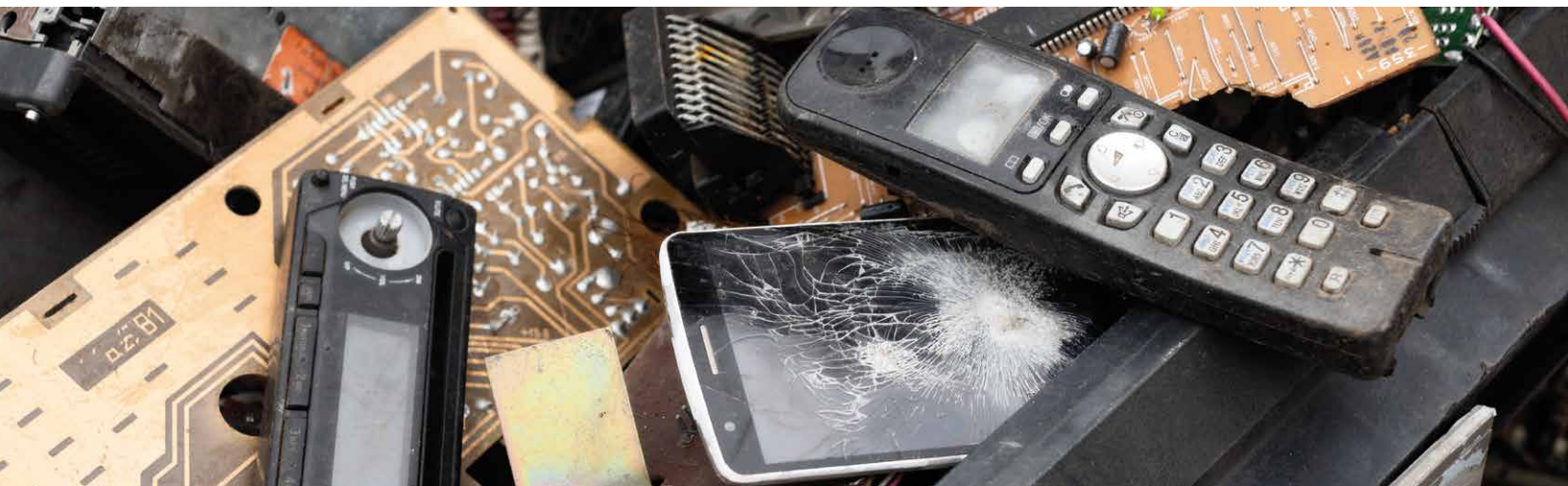
Figure 6 Additional results panel discussion with WEEE managers



From this survey (Figure 6) it is highlighted that almost 50% of the recyclers who responded to the live survey (15 manager representatives) have not been able to perform any TBMs successfully in the last 5 years or did not respond. However, 33% (5 recyclers) stated that they had carried out between 1 and 10 TBMs in the last 5 years and 20% (3 recyclers) had done so on more than 20 occasions. The option "11-20 TBM in the last 5 years" did not receive any response due to the difficulty in completing the procedure. Of these exporting recyclers, 26.7% (4 recyclers) have exported monitors, CRT televisions, or CRT glass, while 66.7% have never done so (10 recyclers) and one manager did not respond to the question (6.7%). Similarly, 20% of recyclers (3 recyclers) have joined forces with another manager to consolidate cargo for export, the remaining 67% (10 recyclers) have not done so and 13% did not respond (2 recyclers).

The main barriers to exporting expressed by management companies (Figure 6) were the complexity of the process (31%) and the length of the permit (25%), with 80% of recyclers willing to export under the Basel Convention if it were easier and 93% willing to export to Latin American countries if the infrastructure was in place.

Finally, it should be noted that this session with WEEE recyclers led to the creation of a WhatsApp group where the participants agreed to contact each other to share experiences and best environmental practices for WEEE management. Subsequent contact has demonstrated good collaboration and effectiveness of communication among this group.



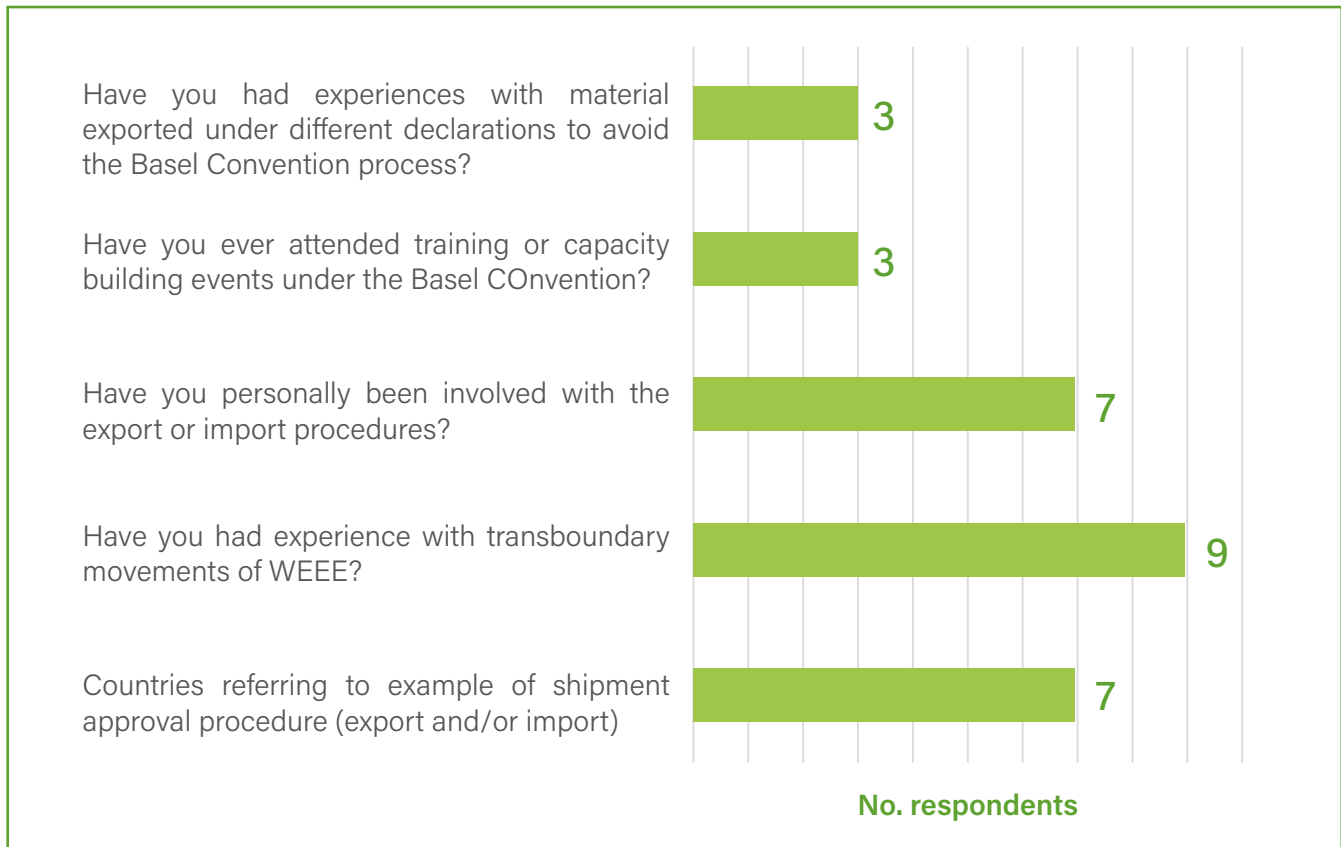
2.3. Results of the survey of government representatives

This survey was sent to government representatives from 15 countries in Latin America and the Caribbean: Argentina, Bolivia, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, Uruguay, and Venezuela.

Responses were received from 13 of the 15 countries, equivalent to 87%. The officials who responded have an average of seven (7) months of experience in these procedures and 69% indicate having direct experience with transboundary movements of WEEE and its fractions (Figure 7).

The results of the survey were discussed during the online meeting (webinar) that took place on 9 September 2021, where the results obtained were shown and discussed.

Figure 7 Characterization of respondents to the survey of LAC Government representatives



The categories of waste (according to the Basel Convention) under which the different fractions of WEEE are exported, according to the government representatives surveyed, can be summarized in eight (8) categories⁶ (see Figure 8), the most mentioned category being B1110 with just over 30 % of the responses obtained.

⁶ The categories of waste expressed by the respondents correspond, according to Basel, to:

- B1110: Electrical and Electronic Assemblies:
 - Electronic assemblies consisting only of metals or alloys
 - Waste or scrap electrical or electronic assemblies (including printed circuit boards) that do not contain components such as accumulators and other batteries included in list A, mercury switches, glass from cathode ray tubes or other activated glasses or PCB capacitors, or are not contaminated with Annex I elements (e.g. cadmium, mercury, lead, polychlorinated biphenyl) or from which those components have been extracted to the point that they do not display any of the characteristics listed in Annex III
 - Electrical or electronic assemblies (including printed circuits, electronic components and cables) destined for direct reuse²⁰, and not for recycling or final disposal.
- A1180: Waste electrical and electronic assemblies or remnants thereof containing components such as accumulators and other A-list batteries, mercury switches, cathode ray tube glass and other activated glass and PCB capacitors, or contaminated with mercury constituents. annex I (for example, cadmium, mercury, lead, polychlorinated biphenyl).
- A2010: Waste glass from cathode ray tubes and other activated glasses.
- B3010: ▪ Cured waste resins or condensation products, including the following: - urea formaldehyde resins - phenol formaldehyde resins - melamine formaldehyde resins - epoxy resins - alkyl resins - polyamides ▪ The following polymer wastes fluorinated 24 - Perfluoroethylene/propylene (FEP) - Alkane perfluoroalkoxide - Tetrafluoroethylene/perfluorovinyl Ester (PFA) - Tetrafluoroethylene/perfluoromethyl vinyl Ester (MFA) - Polyvinyl fluoride (PVF) - Polyvinylidene fluoride (PVDF)
- Y22: Wastes that have copper compounds as constituents
- Y23: Wastes that have zinc compounds as constituents.
- Y31: Wastes that have as constituents lead, lead compounds.
- Various (Y20-27)

Figure 8 Waste category mentioned



According to the Government representatives, Figure 9 shows the positive aspects as well as the opportunities to improve the current procedure for transboundary movements of WEEE and its fractions; it should be noted that what is described below does not reflect the consensus opinion of the countries under study, but rather the individual experiences of government officials, as the procedures and ways of carrying them out vary from country to country. Therefore, it is not possible, at this point, to conclude on aspects that reflect the general opinion of the entire region.

Figure 9 PIC procedure positive aspects and areas for improvement

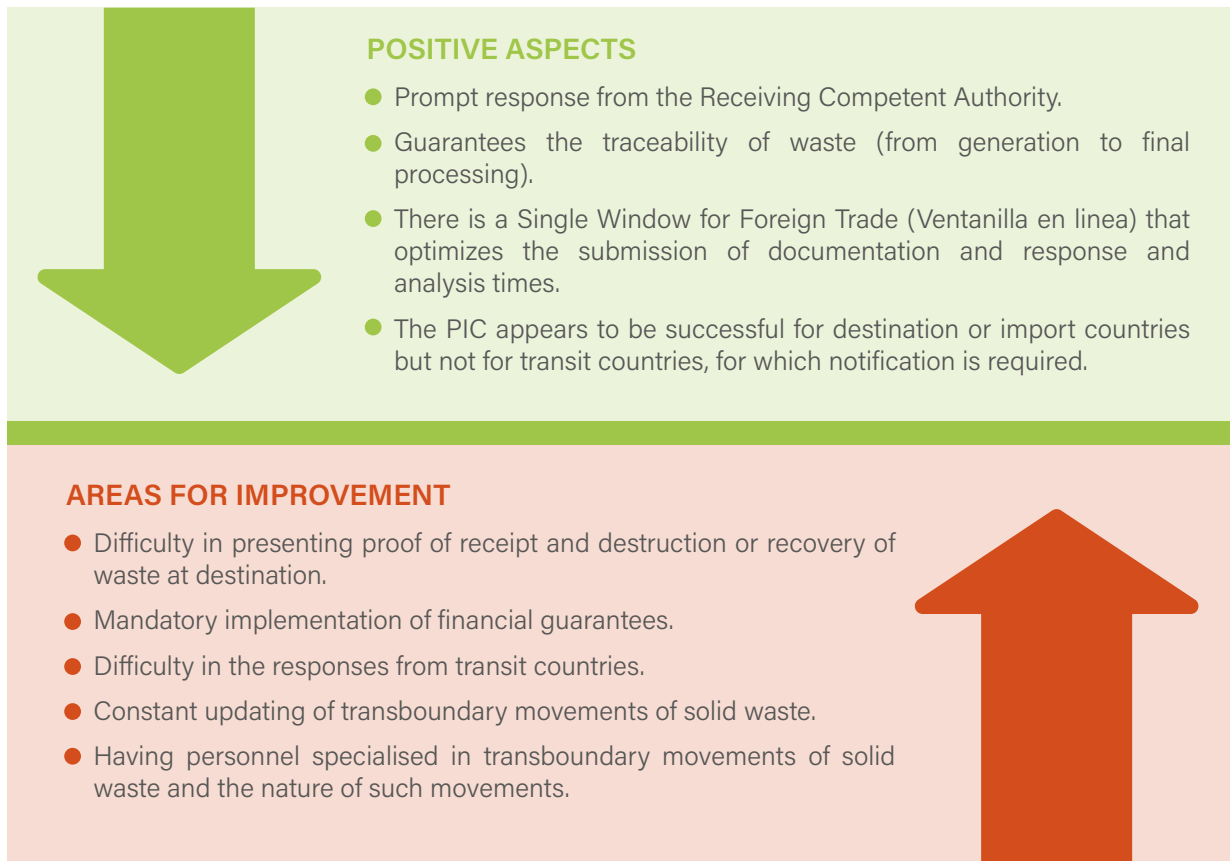
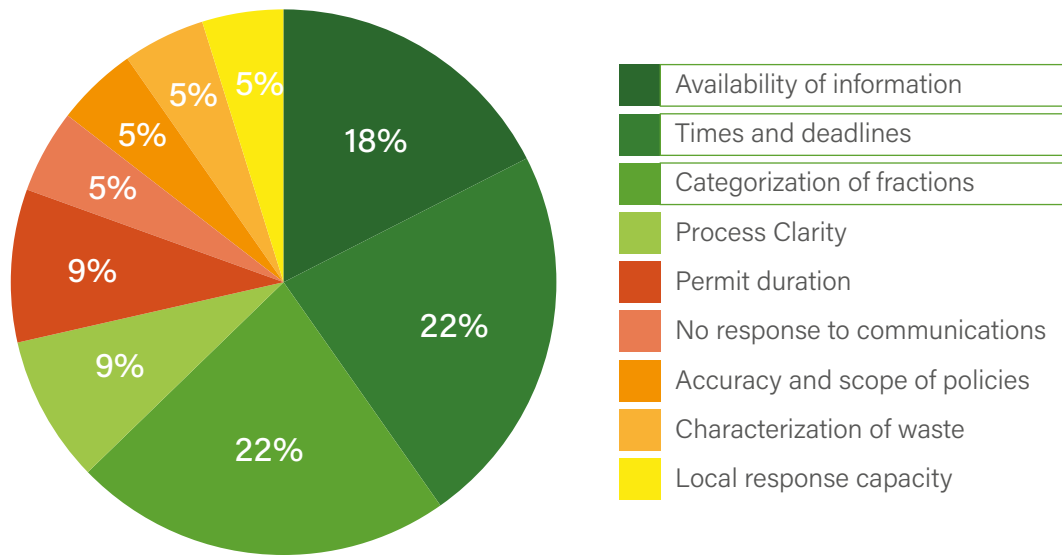


Figure 10 lists the main challenges that, according to the surveyed governments, currently arise in transboundary movements of WEEE and its fractions, highlighting the most important as the categorization of fractions (22%), and compliance with the times and terms of 60 days for the consent of the countries of transit, as established in the PIC (22%); The availability of information regarding the contract between the exporter and the disposer, in addition to clarifications that are usually requested regarding compliance with the requirements established by the Basel Convention (18%) are further challenges.

Figure 10 Challenges of the transboundary movement of WEEE and its fractions

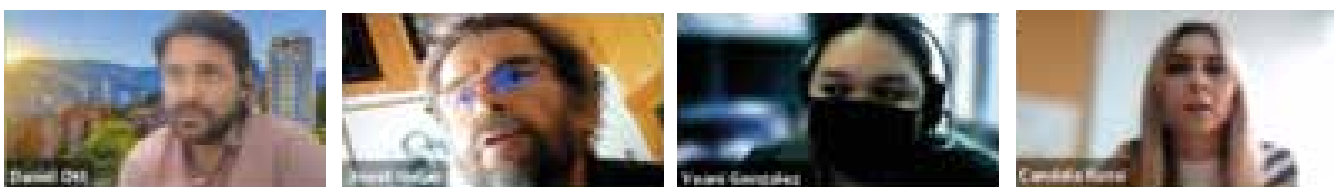


2.3.2 Results of the discussion panel with government representatives

This discussion panel, held in the form of a webinar on 9 September 2021, was developed to present and discuss the results of the survey conducted among government representatives with the following panellists:


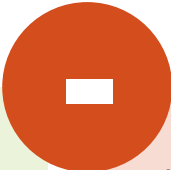
- Candela Nassi, del Ministerio de Ambiente y Desarrollo Sostenible de Argentina.
- Yoani González, del Ministerio de Salud de Panamá.
- Joost Meijer, del Ministerio del Medio Ambiente de Chile.

The panel was moderated by Daniel Ott from Reverse Logistics Group. Daniel is also the coordinator of the StEP working group for LAC.



From this panel, the strengths and weaknesses of the current approval process for transboundary movements of WEEE can be highlighted, according to the panelists:

Table 4 Strengths and weaknesses of the current TBM approval process

 STRENGTHS	 WEAKNESSES
<ul style="list-style-type: none"> ● Communication with focal points, enabling rapid resolution of contingencies. ● Coordination with customs. ● Implementation of the PIC procedure of the Basel Convention. ● Local capacity to deal with RESPEL. 	<ul style="list-style-type: none"> ● Not all countries have WEEE legislation, therefore WEEE are considered as RESPEL, making the definition of regional schemes difficult. ● Requirement to receive information in hard copy for TBM processing, leading to delays in the process. ● Insufficient qualified staff to follow up on approval requests. ● Lack of regional coupling of the information system for the required TBM control, due to lack of financing. ● Traceability. ● Lack of clarity as to which of the WEEE and its fractions are WEEE and which are not. ● Export ban to non-OECD countries, which may limit destinations, at least at the regional level.

After the socialization of the results, a live poll was continued through the Kahoot application, where a series of additional questions were asked of the government representatives in attendance at the session. The results are shown below (Figure 11).

Figure 11 Additional results. Government representatives meeting

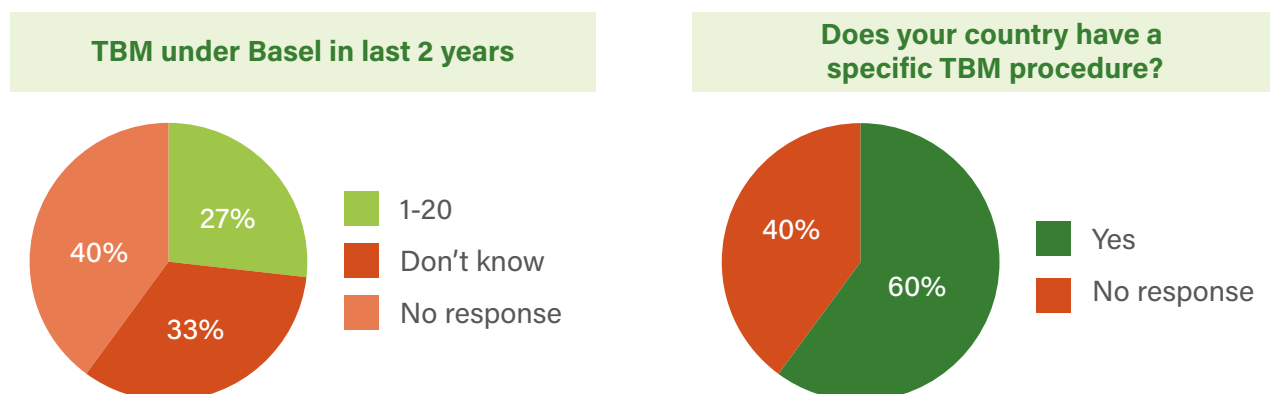
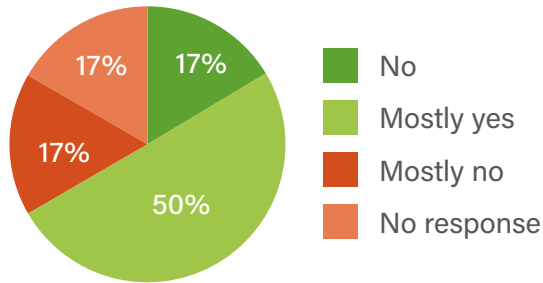
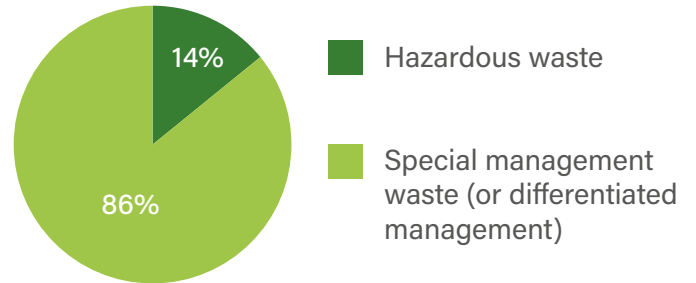


Figure 11 Additional results. Government representatives meeting

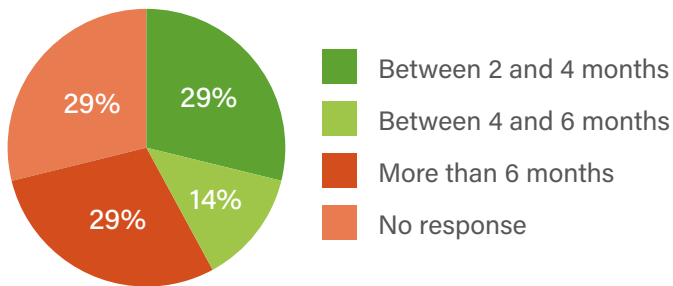
Do you think recyclers are using the correct subheadings to export WEEE?



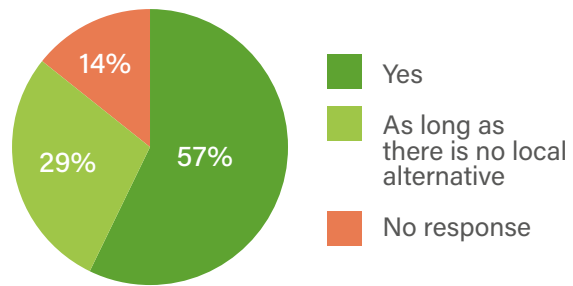
In your country, WEEE is considered:



How long does the procedure take?



Do you agree with the export of WEEE to other countries in LAC for recovery?



This survey highlights that of the government representatives who responded to the live survey (15 officials), 33% (5 officials) do not know the number of transboundary movements processed under the Basel Convention in their country, 40% did not respond to this question (6 officials) and 27% (4 people) indicated having processed from 1 to 20 TBMs under the Basel Convention in the last two years.

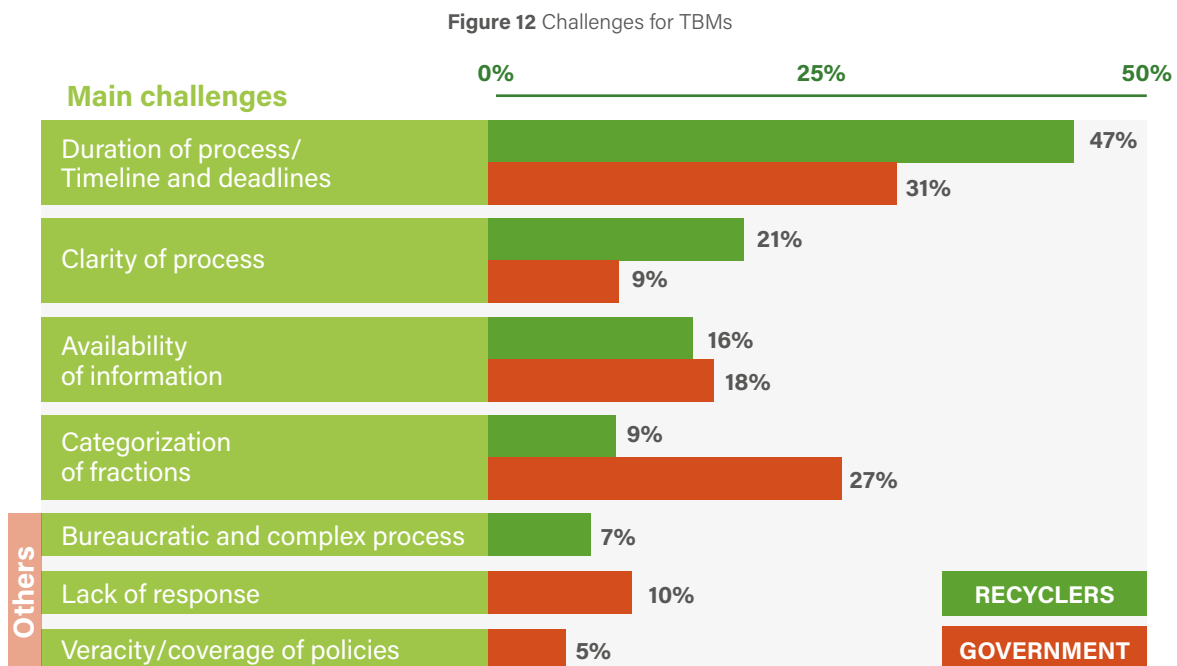
Likewise, 60% (9 officials) indicated that they have a specific procedure for TBM, while 40% (6 officials) did not respond if there was a specific procedure for the transboundary movement of WEEE in their country. Only 50% of those surveyed believe that most companies'

recyclers are using the correct subheadings to export WEEE and the other 50% suspect that most do not do it correctly or did not answer the question. 86% state that WEEE is waste for special management (or differentiated management) and more than 50% of those surveyed state that the procedure for transboundary movement takes more than six months or they preferred not to answer. Finally, of the 7 government representatives who stayed until the end of the survey, 57% (4 officials) agree with the export of WEEE to other countries in Latin America for its use or treatment, while 29% (2 officials) approve if there is no local alternative, and one official did not answer the question.

2.3.3 Results of the joint panel with WEEE managers and government representatives

The analysis of the sessions organized separately for WEEE recyclers and government representatives led to the calling of a joint session with both actors to discuss some of the aspects dealt with and some of the conclusions reached. This online meeting took place on 6 April 2022.

Thus, several of the concerns of the two actors analyzed by the project regarding the transboundary movement of WEEE and its fractions coincide in some way: duration of the permit, clarity of the process and availability of information, although the percentage share of these challenges differs according to the role of each actor. With the aim of proposing viable solutions for the region that can be achieved by the same participating representatives, the session tried to understand the root causes of these challenges, challenges and concerns of both actors (Figure 12), and the discussion was based on this, as shown below:



The relevance of the length of the permit and the times and deadlines is 47% in the case of WEEE recyclers, while for Government representatives the figure is 31%; however, for both parties it is the most important challenge among those mentioned. The clarity of the process is also of concern to WEEE recyclers, with 21% of responses compared to 9% of government representatives. The availability of information is a challenge that concerns management companies and government officials almost equally (16% and 18% respectively), while the categorization of fractions, on the other hand, is of greater concern to

government representatives (27%) than to recyclers, mainly due to the experience and knowledge that the latter have of the fractions that are exported.

Thus, the length of the permit, issued for only one year, is a very short time for WEEE recyclers. Additionally, it must be renewed very quickly, without time to carry out exports; response times often 25 exceed one year, which goes against the maximum time for storage of waste in accordance with environmental regulations, which also results in storage costs and in lost income for recyclers.

However, in countries like Colombia, recyclers state that response times with the environmental authority have improved considerably, but that the difficulty is now since the importing country makes changes that can delay the TBM process, which is related to the challenge of clarity of the process.

On the other hand, although progress has already been made regarding the infrastructure available to treat some fractions of WEEE such as lamps, batteries, and refrigerant gases locally, which avoids having to export and the corresponding procedure, in Latin America there are no management alternatives for devices with Polychlorinated Biphenyls (PCBs), circuit boards, among others, which must be eliminated or treated in the US, Europe, or Asia.

Likewise, recyclers express difficulties with the shipping lines, which do not cooperate as they are not interested in transporting waste classified as RESPEL under the Basel Convention. This represents an additional barrier for recyclers, since permission can be obtained, but if there is no easily accessible maritime transport, it is difficult to export.

For their part, it was identified that the government representatives are not clear about whether the length of the permit can be greater than one year, that is, if it is a limitation of the Convention or if it can depend on the power of the competent administrations of each country. However, some government representatives state that the duration of the permit begins to run from the date on which the country of destination accepts the TBM, so that the underlying problem in approving a permit lies in the delays in obtaining the consent of the transit countries, which is a difficult situation to overcome, since it depends on each country and the approving entity. Government representatives state that they try to carry out the process as quickly as possible, but they depend on the response times of the country of destination and, above all, of the countries of transit.

Additionally, the Government representatives state that the delays may also be since when the documentation is incomplete and they

return the process to the recyclers, they also take time to resolve the request. Therefore, it is recommended to be as diligent as possible in those information-enhancing responses.

On the other hand, the difference in the degree of concern about the clarity of the process between recyclers (21%), and government representatives (9%), may be related to the fact that for the recyclers this is an ambiguous and subjective process that depends on the technician performing the evaluation, not only at the local level but also at the level of the countries of transit and destination. It was stated that countries such as Finland, France, and Germany have returned files many times due to requirements that in the end resulted in a learning process for the manager; however, the change of information for payment of policies of the importing country or the final manager makes it difficult to understand the process and carry it out easily.

In response to this challenge, the government representatives stated that they have access to information on how to complete the forms and how to proceed step by step. In addition, the representative of the Government of Costa Rica expressed that they have a simplified procedure for transboundary movement for OECD countries, and another for non-OECD countries that is a little more specific and lengthy, so it was proposed to standardize the simplified procedure for non-OECD countries as well and promote regional exchanges to seek the application of this procedure in other countries of the region. Likewise, there is evidence of the desire of the participating government representatives to move towards competitiveness, promoting the digitization of permits and the agility of the TBM process, for which there is currently a discussion with the focal point countries of the Basel and Rotterdam Conventions, where consultations are carried out on agility.

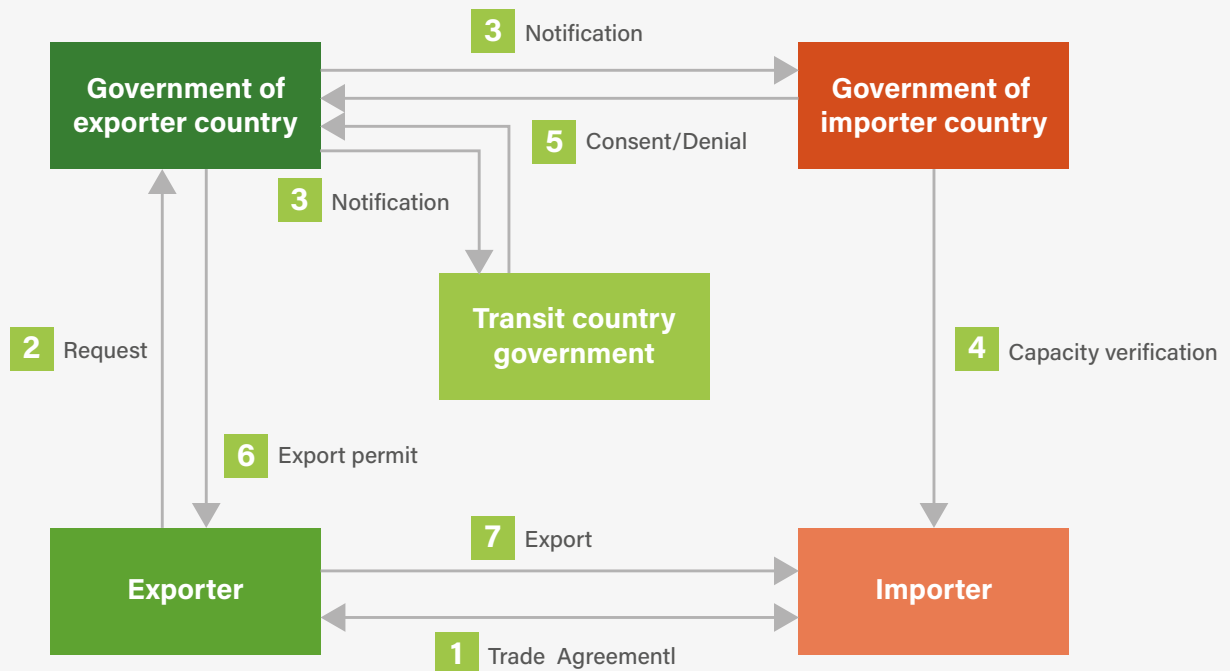
3. CONCLUSIONS

The exercise developed by the StEP working group for LAC showed that, among the participating countries, there are different technical, resource, and infrastructure capacities, which leads to a scenario in which the level of implementation of the Basel Convention varies from one country to another. This situation is exacerbated by the fact that most countries are not sufficiently clear about which WEEE or fractions of WEEE have hazardous characteristics and how to classify them.

On the other hand, in the development of the different stages of Prior Informed Consent (PIC), both the WEEE sector and government representatives identified the difficulties they face, which ultimately result in long waiting times that hinder the practical application of this procedure, leading to the non-declaration and non-notification of TBMs under the Basel Convention, representing a threat to the environmentally sound management of e-waste, which in turn leads to illegal movements of e-waste.

Figure 13 below presents the main steps to be followed within the WEEE PIC. The different information flows have been numbered from 1 to 7, with the purpose of not only separately identifying the difficulties expressed by the participants, but also the suggestions made by them on how they could be overcome (Table 5).

Figure 13 Phases of WEEE TBM



Source: Adapted from Secretariat of the Basel Convention UNEP/SBC
<http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/leaflets/leaflet-control-procedures-sp.pdf>

Table 5 Steps, difficulties and suggestions

Step	Difficulties		Suggestion
	Manager	Government Rep.	
1 Trade Agreement	<ul style="list-style-type: none"> • Have enough volume of material to export. • Select the best destination for use of waste . • Achieve a viable and unchanged trade agreement. 		<ul style="list-style-type: none"> • Alliances between managers to achieve export volumes. • Availability of centralized information on final destinations and export routes. • Standardize with importers the tariff headings that must be used for WEEE and its fractions.
2 Request exporter	<ul style="list-style-type: none"> • Clarity in the documents to be submitted. Publication • Category under which WEEE/fractions must be declared. • Time the process will take. 	<ul style="list-style-type: none"> • There is no publication of updated requirements • Receipt of incomplete applications . • Incorrect categorization of components/WEEE object of export. • Delays in reply on the part of export manager when additional information is requested. 	<ul style="list-style-type: none"> • Keep import/export procedures up-to - date to date and define/improve the export procedure before the authority including (knowledge and study of the permit, analysis of fractions, policies, training on WEEE materials for government personnel, countries of transit and destination). • Standardization of currents, normalization in the identification of the fractions and/or equipment that can be imported or exported between the countries of Latin America or other regions. • Availability of centralized information on final destinations and export routes. • Information Center -Operational platform to share experiences.
3 Prior notification		<ul style="list-style-type: none"> • Clarity about the necessary documents and their delivery to the transit country authorities. • Long response times from transit. 	<ul style="list-style-type: none"> • Strengthening of environmental and customs authorities. • Training from the Basel regional center and government officials.
4 Capacity verification		Clarity about the necessary documents and their delivery to destination country authorities.	Availability of centralized information on final destinations and export routes.
5 Consent/ Refusal		Steps to follow in case transit countries do not respond (advance/decline TBM process).	<ul style="list-style-type: none"> • Establish clear and consistent procedures. • Strengthening of environmental and customs authorities.
6 Export permit	<ul style="list-style-type: none"> • Duration and start date of the permit. • Number of shipments authorized in the permit. • Approved export route. • Changes in the export category requested by the importer. 		<ul style="list-style-type: none"> • Unify the entry into force of the permit so that it always begins with the approval and not from the presentation of the application. • Strengthening of environmental and customs authorities. • Information Center -Operational platform to share experiences. • Standardize with importers the tariff items for WEEE and its fractions to be used for export.
7 Export	<ul style="list-style-type: none"> • Little time left to export the waste once the permit is approved. • Validity of trade agreement once the export is approved. • Few shipping companies in charge of transporting waste subject to TBM. 		<ul style="list-style-type: none"> • More agile and efficient process that benefits agreements and exports. • Ensure that the validity of the export permit begins with its approval and not from the presentation of the application. • Availability of centralized information on maritime shipping lines and export routes.

An important aspect to highlight is that in the region there is a willingness to implement collective solutions aimed at harmonizing, among other aspects, local legislation, capacity building, logistics criteria, and waste and fraction categorization criteria, in order to improve the current situation. Likewise, most government representatives and WEEE recyclers from LAC countries agree that solutions must be provided in such a way that a simplified procedure can be achieved, for example, with pre-approved exporting and importing companies.

Finally, the management companies and the country representatives also presented the following proposals, which can contribute to improving and facilitating the TBM in the regional context (Table 6).

Table 6 Proposals to facilitate MTFs

TEMÁTICA	SOLUCIONES PROPUESTAS
International Regulation	<ul style="list-style-type: none"> ● Standardized and available procedures and permits that enable transboundary movement and involve the public and private sectors. ● Uniformity in the monitoring mechanisms within Basel, which allow controlling the flows of all WEEE (including new and used EEE). ● Common criteria applicable to the Basel Convention. ● Interconnected registration system of all States Parties to the Convention. ● Re-categorization of fractions outside the Basel Convention. ● Facilitate the recovery of fractions within the framework of the Circular Economy.
Domestic regulation of countries	<ul style="list-style-type: none"> ● Automation of processes and information systems. ● Uniformity in the hazard criteria to classify WEEE and its fractions at the regulatory level, considering the guidelines of the globally harmonized system. ● Review of national regulations, to allow import and export of WEEE. ● Improve the regulatory base and treatment criteria in the country of destination according to the waste in question.
Capacity building	<ul style="list-style-type: none"> ● Training and strengthening from the Basel Convention regional centres to government officials, environmental and customs authorities, as well as shipping companies to provide solutions. ● Improve communication between countries through a centralized operational digital platform, managed by Basel and its regional points, which involves the different actors in their roles to share experiences, export alternatives and waste transit. The creation of a Library or information center on procedures, requirements, categorization and, in general, on how to request the procedure in each country is suggested in order to serve as an orientation and guide in the process. ● Additionally, information on waste flows once the permit is obtained and exports are carried out, with an automatic record that minimizes the intervention of environmental authorities. ● Improve response times through the availability of documentation and standardized tariff subheadings. ● Promote incentives for the development of facilities and the acquisition of technology for the management, treatment and use of WEEE, which is perceived as a future scenario and a possible regional solution to promote local economies of scale and which in turn leads to additional challenges for TBM within Latin America.

4. ANNEXES

4.1. Questionnaire for Government Representatives

1. Information about the Respondent:
 - a. Name / email address
 - b. Country
 - c. Role / position
 - d. Experience related to the transboundary movement of WEEE
2. What experiences have you had with cross-border shipments of electronic waste? Briefly describe your experience (number of shipments, type of waste shipped, country of origin, receiving country, exporting/receiving company, etc.).
3. Under what category of waste (according to the Basel Convention) are the different fractions of WEEE exported?
4. How is the process of transborder shipment of e-waste managed in your country (responsible authorities, necessary permits required, etc.)?
5. Have you been personally involved with the export or import shipment approval procedures(s)? (Yes/No)
 - a. If the answer is no, go to the next question.
 - b. If yes, please provide details about the shipment(s).
 - c. Describe your overall experience with the process.
 - d. Were shipments made in accordance with the Basel Convention Prior Consent procedure? (Otherwise)
6. Have you ever attended a training on shipping processes under the Basel Convention? (Yes/No)
 - a. If the answer is no, go to the next question.
 - b. If yes, please provide details on the training received.
7. Have you had experiences with material exported under different declarations to avoid the Basel Convention process? If so, please provide details on the specific cases.
8. Do you have any examples of shipment approval processes that have worked well and what would you recommend as good practice? (Yes/No)
 - a. If the answer is no, go to the next question
 - b. If yes, please list the processes.
 - c. If so, do you know how these processes were established?
9. What specific challenges have you faced in these shipping processes (mention if specific to region or country)?
10. In your opinion, what is the cause of these challenges?
11. Are there any environmental impacts associated with these challenges?
12. Do you see any specific "quick wins" or other solutions that could help overcome these challenges in your local context? (Yes/No)
 - a. If the answer is no, go to the next question.
 - b. If so, please explain.
 - c. If so, do you think it should be the priority?
13. Do you collaborate with authorities from neighboring countries to approve the shipping process?
14. In your opinion, what will it take to develop a regional e-waste treatment solution in Latin America (for example, allowing regional cross-border shipments to appropriate facilities)?
15. If it has not yet been shared, do you know of any work to harmonize or improve the process?
16. Do you have documents already available detailing your problems/experiences that you can share? (for example, position papers, etc.)
17. Do you have any other ideas or experiences you want to share?

4.2. WEEE Recyclers Survey

1. Information on the respondent :

- a. Name / email address
- b. country
- c. role / position
- d. Years of experience with transboundary movements of electronic waste

2. Where have you had experiences with transboundary shipments of electronic waste? Briefly describe your case (type of waste/material shipped, country of origin, receiving country, exporting/receiving company, etc.).

3. Export of fractions (general):

- a. What fractions are currently exported ?
- b. What tariff subheadings (HIS) do you use for each fraction?
- e. Between / to which country(ies)?
- f. Please mention which ones are exported under the Basel Convention.
- g. If you have ever exported a fraction(s) for recycling to another country in Latin America, mention the specific case(s)
- h. If you have never exported to another Latin American country, why not?

4. Why do you export these fractions? Expand each of the fractions mentioned in the previous answer.

5. If it were easier to send critical fractions to recycling processes outside of your country, what additional fractions would you be considering exporting?

6. Do you have any example shipping processes that are (now) going well and what would you recommend as good practice? (Otherwise)

- a. If the answer is no , go to the next question.
- b. If yes , detail the process(es)
- c. If so, do you know how these good practices were established?

7. What specific challenges have you faced in these shipments (please mention if region/country specific)? (examples: availability of information, clarity of process, times and deadlines, duration of the process, categorization of fractions, etc.)

8. In your opinion, what is the cause of these challenges?

9. How does your company (or your competitors) perform as a result of the challenges?

10. Are there any environmental impacts associated with this? If yes, please indicate which one(s)

11. What kind of costs result from the shipping process (time / financial / personal)? Please mention the type of cost and an estimate in USD if available.

12. Do you see specific quick wins or other solutions that could help overcome these challenges in your local context? (Otherwise)

- a. If the answer is no, go to the next question.
- b. If yes, please explain this.
- c. If so, do you think it should be the priority?

13. What do you think would be necessary to develop a regional solution?

14. If not yet shared, do you know of any other work to harmonize or improve the process?

15. Do you have documents already available detailing your problems/experiences that you can share? (for example, position papers, etc.)

16. Do you have any other ideas or experiences you want to share?

5. REFERENCES

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