

Country Name	<b>Project for E-waste Reverse Logistics Improvement</b>
Federative Republic of Brazil	

**I. Project Outline**

Background	<p>In Brazil, the rapid economic growth brought about rapid increases in solid waste volume and proper waste management became a key issue. In addition, the capacity of landfills in suburb areas was tight, and further introduction of waste reduction, reuse, and recycling became essential. Under those circumstances, the state of Sao Paulo enacted a state law on electrical and electronic waste ("E-waste") in July 2009, ahead of the federal government and other states, and signed a commitment with a telecommunications company for a product circulation system (reverse logistics<sup>1</sup>: RL). In response, private operators begun establishment of RL for cell phones. In addition, the State of Sao Paulo was considering negotiations to establish RL for laptop computers and home appliances. However, in expanding the target items, the establishment of RL for E-waste with more effectiveness has been a challenge.</p>												
Objectives of the Project	<p>Through collecting basic information on E-waste, planning, implementation, and evaluation of the pilot project, deriving recommendations and lessons learned from the pilot project, and developing RL guidelines for the government or private sector, the project aimed at presenting actions for improving implementation of reverse logistics from the federal government, thereby contributing to facilitate implementation of reverse logistics.</p>												
	<ol style="list-style-type: none"> <li>1. Overall Goal: Implementation of reverse logistics are facilitated.</li> <li>2. Project Purpose: Actions for improving implementation of reverse logistics are presented by the federal government.</li> </ol>												
Activities of the Project	<ol style="list-style-type: none"> <li>1. Project Site: City of Sao Paulo, relevant areas in the state of Sao Paulo (limited areas where the RL value chain of E-waste targeted by the pilot project is located, mainly in the city of Sao Paulo), Brasilia, and Recife.</li> <li>2. Main Activities: 1) Collection of basic information on E-waste; 2) Planning, implementation, and evaluation of the pilot project; 3) Preparation of recommendations and lessons learned from the pilot project; 4) Development of RL guidelines for the government or private sector, and so on.</li> <li>3. Inputs (to carry out above activities) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Japanese Side</td> <td style="width: 50%;">Brazilian Side</td> </tr> <tr> <td>1) Experts: 10 persons</td> <td>1) Staff Allocated: 19 persons</td> </tr> <tr> <td>2) Trainees Received: 11 persons</td> <td>2) Land and facilities: Office space and furniture in AMLURB</td> </tr> <tr> <td>3) Equipment: laptop computers (2), desktop computer (1), printer (1), projector (1)</td> <td>3) Local operation expenses: Utilities, communication, etc.</td> </tr> <tr> <td>4) Local operation expenses: Local activity expenses</td> <td></td> </tr> </table> </li> </ol>			Japanese Side	Brazilian Side	1) Experts: 10 persons	1) Staff Allocated: 19 persons	2) Trainees Received: 11 persons	2) Land and facilities: Office space and furniture in AMLURB	3) Equipment: laptop computers (2), desktop computer (1), printer (1), projector (1)	3) Local operation expenses: Utilities, communication, etc.	4) Local operation expenses: Local activity expenses	
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Project Period	(ex-ante) April, 2014 – March 2017 (actual) October 2014 – September 2017	Project Cost	(ex-ante) 360 million yen, (actual) 380 million yen										
Implementing Agency	Ministry of Development, Industry and Foreign Trade, Ministry of Environment, Municipal Urban Cleaning Authority (Autoridade Municipal de Limpeza Urbana, AMLURB)												
Cooperation Agency in Japan	Nippon Koei Co., Ltd. Sustainable System Design Institute Co., Ltd. Kokusai Kogyo Co., Ltd. Nippon Koei Latin America-Caribbean Co., Ltd.												

**II. Result of the Evaluation**

< Special Perspectives Considered in the Ex-Post Evaluation >

- Due to COVID-19, it was not possible to conduct a field survey. Therefore, the survey was conducted through questionnaires and interviews with AMLURB.

1 Relevance
<p>&lt;Consistency with the Development Policy of Brazil at the Time of Ex-Ante Evaluation &gt;</p> <p>The project was consistent with the development policy of the government of Brazil, as waste management including E-waste was one of the priority programs in the "Multi-Year Plan" (2012-2015) formulated by the government of Brazil.</p> <p>&lt;Consistency with the Development Needs of Brazil at the Time of Ex-Ante Evaluation &gt;</p> <p>The project was consistent with the development needs in Brazil, such as the comprehensive management of waste, which focused on the sharing of responsibility among stakeholders for the proper disposal of products along their life cycles.</p> <p>&lt;Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation&gt;</p> <p>The project was consistent with the "Country Assistance Policy for Federative Republic of Brazil" (2012), which provided support for "urban issues and environmental and disaster prevention measures" including environmentally friendly urban development as one of the two priority areas.</p> <p>&lt;Appropriateness of Project Design/Approach&gt;</p> <p>While the project implementation, the implementing agency was abolished due to administrative reform and a new organization was established. However, the organization structure, staffing and budget are unforeseen at the time of ex-post evaluation, which has affected the evaluation result of sustainability. On the other hand, although the achievement of the partial project purpose was delayed, it was achieved after the project completion and the other project effects have continued and the overall goal has been achieved. Especially, the</p>

<sup>1</sup> A series of processes to return products after disposal to private businesses for reuse, recycling, and proper treatment and disposal

facilitation of RL as the overall goal, has been secured by the federal government's decree and, therefore, the project planning and approach were appropriate.

<Evaluation Result>

In light of the above, the relevance of the project is high.

## 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The project purpose was partially achieved at the time of project completion. During the project period, the federal government proposed a scheme to the Ministry of Development, Commerce, and Industry to utilize subsidies for the construction of E-waste recycling facilities. On the other hand, lessons learned from the pilot project were not reflected on the federal government's solid waste policy, although they were being applied throughout the country, in the state of Sao Paulo, and in the city of Sao Paulo.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

Since the project completion, the project effects have continued. The preferential policies proposed to the federal government have been adopted, and a sector agreement on the implementation of RL was signed in 2019. Through the sector agreement, stakeholders in the manufacturers of household electronic products have been implementing a series of actions for the implementation of the national solid waste policy. Although the solid waste policy did not reflect the lessons learned from the pilot project at the time of project completion, the Ministry of Environment introduced collaboration with the private sector in solid waste policy at the time of the ex-post evaluation, based on the lessons learned that working with private waste picker cooperatives (informal waste collectors) were effective in RL of electronic equipment.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The overall goal has been achieved at the time of the ex-post evaluation.

At the federal level, a sector agreement on the implementation of RL for electronic products and their components was signed in 2019, and the Decree No. 10,240 was issued in 2020 with the same content as the sector agreement (Indicator 1). At the federal level, Decree No. 10,240 ANNEX 2 sets a five-year collection target rate starting in 2021; the goal is for 17% of E-waste to be collected by the fifth year (2025). On the other hand, at the local level, there was no consensus on legislation and, at the municipal level, AMLURB had many difficulties in convincing the private sector to sign commitment clauses. For example, the collection rate for large appliances is not mentioned in the local law. This is because the municipality believes that collection should be regulated at the federal level. However, in Sao Paulo, a law (No. 17,471) was enacted and entered into force in September 2020, awaiting the publication of the regulating the Decree (Indicator 2).

<Other Impacts at the time of Ex-post Evaluation>

Positive impacts related to the social environment were observed at the time of the ex-post evaluation. The project worked with a cooperative of waste pickers, who were socially vulnerable and had difficulty finding work in the formal labor market and led to the creation of work and income for these people. The cooperation has been expected to continue to operate as a Consolidation Center commissioned by the private sector or as a dismantling center for small electronic equipment. On the other hand, the awareness of the residents was very slow, and since electronic equipment has been very expensive in Brazil, they always have found value in it and are reluctant to throw it away, preferring to donate it to charity, which was a limitation for the mechanisms and activities introduced in the project to have a greater impact. However, the idea of reusing electronic devices is a part of the 3Rs and it has not been denied.

No negative impacts were observed at the time of the ex-post evaluation.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

### Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results	Source
(Project Purpose) Actions for improving implementation of reverse logistics are presented by the federal government.	Indicator 1: At least one federal government incentive, such as financing for capital investment or tax incentives, is proposed during the project period.	Status of the Achievement: Achieved (continued) (Project Completion) <ul style="list-style-type: none"> <li>A scheme to utilize subsidies in the construction of E-waste recycling facilities and other facilities was proposed to the Ministry of Development, Commerce and Industry. Other schemes were also considered, such as providing incentives to consumers who emit E-waste, and exemptions from transportation taxes on E-waste transportation.</li> </ul> (Ex-post Evaluation) <ul style="list-style-type: none"> <li>The above preferential policies proposed to the federal government have been adopted. The sector agreement on the implementation of the RL for electronic products and their components was signed in 2019. Through the sector agreement, stakeholders in the manufacturers of household electronic products have implemented a series of actions for the implementation of the national solid waste policy.</li> <li>Furthermore, the Decree No. 10,240 was issued in 2020 with the same content as the sector agreement.</li> </ul>	Project Completion Report, AMLURB
	Indicator 2: Lessons learned from the pilot project are reflected in federal solid waste policy.	Status of the Achievement: Not achieved (Achieved) (Project Completion) <ul style="list-style-type: none"> <li>Lessons learned from the pilot project were not reflected in the federal government's solid waste policy. However, the lessons learned were being applied throughout the country, the state of Sao Paulo, and the city of Sao Paulo.</li> </ul> (Ex-post Evaluation) <ul style="list-style-type: none"> <li>Lessons learned from the pilot project confirmed the effectiveness of working with private waste picker cooperatives for RL of electronic equipment, and</li> </ul>	Project Completion Report, AMLURB

		the Ministry of Environment introduced collaboration with the private sector in its solid waste policy.	
(Overall Goal) Implementation of reverse logistics are facilitated.	Indicator 1: R/L is initiated by at least one sector agreement or commitment, or a decree at the federal or municipal level by 2020 in Brazil.	(Ex-post Evaluation) Achieved <ul style="list-style-type: none"> <li>At the federal level, a sector agreement on the implementation of RL of electronic products and their components was signed in 2019, and Decree No. 10,240 was issued in 2020 with the same content as the sector agreement.</li> <li>At the municipal level, the decree has not yet been issued due to the COVID-19. In Sao Paulo, a municipal law requiring the private sector to implement the RL system was promulgated in September 2020, but has not yet entered into force.</li> </ul>	AMLURB
	Indicator 2: Signed sector agreements or commitments set the target for collection rate.	(Ex-post Evaluation) Achieved <ul style="list-style-type: none"> <li>At the local level, there is no consensus on legislation, for example, the collection rate of large appliances has not been mentioned in the local law; AMLURB has assumed that it would take time to convince the private sector to sign the commitment clause at the municipal level. However, the law No. 17,471 was enacted and entered into force in September 2020 in the city of Sao Paulo, awaiting the publication of the regulating Decree.</li> <li>At the federal level, Decree No. 10,240 ANNEX 2 sets a five-year collection target rate starting in 2021; the goal is for 17% of E-waste to be collected by the fifth year (2025).</li> </ul>	AMLURB

### 3 Efficiency

Although the project cost exceeded the plan (ratio against the plan: 106%), the project period was as planned (ratio against the plan: 100%). Outputs were produced as planned. Therefore, the project efficiency is fair.

### 4 Sustainability

#### <Policy Aspect>

The waste law enacted in 2010 has regulated waste in general, and based on the results of the project, the Decree No. 10,240 was enforced in 2020, clarifying in more detail the roles of each producer and user, product sorting, etc. related to RL.

#### < Institutional/Organizational Aspect>

Due to the administrative changes implemented since July 2021, AMLURB was abolished, and SP Regula is established. With the abolition of AMLURB, waste-related issues have been handled by SP Regula together with other secretariats. Although the establishment of the new organization has not completed at the time of ex-post evaluation, the transition to SP Regula will be proceeded gradually since each task set the deadline.

#### <Technical Aspect>

Since the structure of SP Regula as the implementing organization has not been established, the technology has not been maintained, and the guidelines have not been utilized.

However, since the staff of the former AMLURB has been scheduled to be transferred to the new SP Regula, the results of the project will be taken over and the knowledge and skills will be maintained.

#### <Financial Aspect>

The SP Regula as the implementing organization has not yet been established, and no budget has been allocated.

#### <Evaluation Result>

In light of the above, uncertainties have been observed in terms of the institutional/organizational and financial aspects of the implementing agency and some problems have been observed in terms of the technical aspect. Therefore, the sustainability of the effectiveness through the project is fair.

### 5 Summary of the Evaluation

The project achieved the Project Purpose and the Overall Goal to facilitate implementation of reverse logistics, through the presentation on actions for improving implementation of reverse logistics from the federal government. Regarding sustainability, although AMLURB, as the implementing agency for the project, was abolished and a new organization, SP Regula, has been established, its organizational structure and responsible officers have not yet been determined, and no budget has been allocated, but the results of the project will be taken over and the knowledge and skills will be maintained since the former AMLURB staff will be transferred to SP Regula. As for efficiency, the project cost slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

#### Recommendations for Implementing Agency:

The RL for E-waste is an issue that must be addressed by the entire government and the private sector in an integrated manner. It is necessary to enact appropriate laws at the federal level, establish a mechanism at the three levels of government (federal, state, and municipal) for relevant government agencies and the private sector to implement these laws, and follow up and monitor the implementation status.

#### Lessons Learned for JICA:

In the implementation of the project, it was a challenge to disseminate the concept of RL for E-waste to the citizens and the private sector, while respecting the idea of taking good care of belongings, since many of them disposed of appliances easily without recycling them due to the lack of appropriate disposing procedures. In general, internalization of new concepts and customs in Brazil may require a great deal of communication. As an example, the project provided training and learning about RL for E-waste to both AMLURB and stakeholders, including an electronics cooperative in Sao Paulo, which provided an opportunity for dialogue between the public and private sectors. Future JICA projects in Brazil can be expected to include collaboration and strengthening of relationships not only with government agencies but also with private sector organizations by providing training and seminars subject to both the public and private sector as a

project component to promote the use of E-waste to the citizens and the private sector.

In addition, to ensure that administrative reforms and reorganizations do not affect sustainability, JICA should propose to the counterpart government at the time of project formation that, when the counterpart government formulates these policies and designs institutions, the roles of the implementing agencies and the necessary organization structures should be clearly stated. As the result, such information can be used as a basis for staffing and budget allocation at the time of evaluation.



Recycling bins to collect electronic products installed at City Hall in the Santana District



Recycling bins to collect electronic products installed at City Hall in the Municipal District of Matarazzo