

# 97% of Latin America's e-waste is improperly managed and includes an annual \$1.7 billion in recoverable materials

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This report covers 13 Latin American (LATAM) countries located in Central and South America. The countries in the scope of the Regional E-waste Monitor for Latin America are: Argentina (ARG) Bolivia (Plurinational State of, BOL), Chile (CHL), Costa Rica (CRI), Ecuador (ECU), Guatemala (GTM), Honduras (HND), Nicaragua (NIC), Panama (PAN), Peru (PER), El Salvador (SLV), Uruguay (UGY), and Venezuela (Bolivarian Republic of, VEN). Credit: UN

Electronic waste in 13 Latin American countries rose by 49% between 2010 and 2019, roughly the world average, but just 3% was collected and safely managed, a fraction of the 17.4% global average, according to the UN's first assessment of Latin America's e-waste volume, legislation, and management infrastructure.

In 2019, e-waste generated by 206 million citizens in the 13 countries reached 1,300,000 tons (1.3 megatonnes, of which almost 30% was plastic)—equal in weight to a 670 km line of fully-loaded 40-ton trucks. The comparable figure in 2010 was 900,000 tons, generated by about 185 million citizens.

While informal recyclers "cherry pick" some valuable elements from waste electronics and electrical equipment, some 97% is improperly managed; just 3% is known to be collected and treated in facilities using environmentally sound methods.

The findings are published in the "Regional E-waste Monitor for Latin America, Results for the 13 Countries Participating," produced by the Sustainable Cycles (SCYCLE) Programme, co-hosted by the UN University (UNU) and the UN Institute for Training and Research (UNITAR).

It was developed under the 'Strengthening of National Initiatives and Enhancement of Regional Cooperation for the Environmentally Sound

Management of POPs in Waste of Electronic or Electrical Equipment (WEEE)' project (in Spanish: PREAL—Proyecto Residuos Electrónicos America Latina), funded by the Global Environment Facility (GEF) and coordinated by the UN Industrial Development Organization (UNIDO).

"E-waste constitutes one of the fastest-growing streams of physical waste in today's global environment and is a threat to sustainable development," the report says.

However, few countries collect internationally-comparable e-waste statistics. This report was created with the cooperation of 13 countries to support and facilitate environmentally-sound management of e-waste in the region, says co-author Ruediger Kuehr, the Senior Manager of UNITAR SCYCLE (previously hosted by United Nations University).

The [hazardous substances](#) in the region's e-waste comprises at least 2200 kg of mercury, 600 kg of cadmium, 4.4 million kg of lead, 4 million kg of brominated flame retardants, and 5.6 megatonnes of greenhouse gas-equivalents (due to refrigerants).

These substances "are poorly managed within the region and are likely to be untreated, generating various risks to the stability of a healthy environment," according to the report.

Meanwhile, "managing e-waste could be an economic opportunity," says co-author Kees Baldé, Senior Scientific Specialist at UNITAR SCYCLE. "The e-waste generated regionally in 2019 contained 7000 kg of gold, 310 kg of rare earth metals, 591 million kg of iron, 54 million kg of copper, and 91 million kg of aluminum, representing a total value of roughly US \$1.7 billion of secondary raw materials."

## **Key statistical findings:**

- On an average annual per capita basis, e-waste generation rose from 4.7 kilograms in 2010 to 6.7 kilograms in 2019, ranging from 13.2 kg in Costa Rica to 2.5 kg in Nicaragua.
- The volume of electrical and electronic equipment (EEE) placed on the market fluctuated between 2010 and 2019, from 1.7 Mt (1.7 million tons, or 8.9 kg per inhabitant) in 2010, to 1.9 Mt in 2017, and 1.7 Mt (8.1 kg per inhabitant) in 2019.
- One-third (33%) of the region's e-waste consists of small equipment (e.g. microwaves, grills and toasters, speakers, cameras). The next largest categories: large equipment (e.g. dishwashers, washing machines, ovens, central heating systems) and temperature exchange equipment (e.g. fridges, freezers, air conditioners, heat pumps), each with 21%. One or two appliances in the latter categories are found in typical households—bulky, heavy appliances with long lifespans compared with small equipment, sold in higher numbers and more frequently discarded. The region's smallest category in terms of e-waste generation is lamps (3% of the region's e-waste weight).
- The volume of EEE plastic placed on the market decreased over the years, from 470,000 tons (2.49 kg/inh) in 2010 to 460,000 tons (2.22 kg/inh) in 2019 due to changes in technology, for example, from cathode ray tube (CRT) screens in computers and televisions to flat-panel displays, as well as material substitutions by manufacturers and shifting demand in some EEE categories.
- 380,000 tons of e-waste plastic was generated in the 13 countries in 2019, of which 31,000 tons contained toxic brominated flame retardants (BRF), suspected of causing neurobehavioral effects and endocrine disruption. Almost all of the plastics containing BRF are contained in just three e-waste categories: small equipment (16,000 tons), small IT (10,000 tons), and screens (5,000 tons)
- Data is unavailable on the volume of Persistent Organic Pollutants (POPs) in e-waste plastic managed in an

environmentally-sound way.

- The countries in the study collected and managed a total of 36,000 tons (0.21 kg per inhabitant) of e-waste in 2019. (Guatemala data is being assessed but unavailable as the report went to press).
- Costa Rica has the highest e-waste collection of 8.0 percent (1.0 kg per inhabitant) of its total e-waste generated, followed by Chile with 5.0 percent (0.4 kg per inhabitant).
- Annual EEE growth rates are slowing but still positive in all categories except screens and monitors, the mass of which is dropping as heavy cathode ray tube (CRT) screens in computers and televisions are replaced on the market by substantially lighter flat-panel displays.
- Argentina, Costa Rica, and Chile manufacture EEE and their components domestically; all 10 other countries rely entirely on imports.

All 13 participating countries have some legal and regulatory frameworks for waste management but only Bolivia, Chile, Costa Rica, Ecuador, and Peru have instituted specific legislation for e-waste and Extended Producer Responsibility (EPR) systems focusing on e-waste regulation.

have hazardous waste regulation that includes POPs, but none has legislation specifically for POPs from e-waste.

have ratified the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, which controls the transboundary movement of e-waste, and enacted national bans on e-waste imports.

However, "the enforcement of these measures remains a significant challenge," the report says, adding that many of the 13 countries do not submit transboundary movement reports to the Basel Convention,

making monitoring and mapping difficult.

"Low quality of data and control of transboundary movement of e-waste through the Basel Convention poses a threat to the environmentally sound management of e-waste and illegal movements."

The report calls on all countries in the region to introduce and enforce either:

- a) a robust legal and policy framework focused on ESM of e-waste and POPs contained in [e-waste](#), or
- b) monitor and reinforce existing systems to make them more efficient and effective.

It adds that adequate financing and monitoring of the systems, and the cooperation of all stakeholders, are essential elements for setting up and sustaining successful policies.

The report concludes with detailed individual country profiles and elaborates on seven recommendations, headlined:

- Prevent more
- Be more aware
- Collect more
- Pollute less
- Pay adequately
- Work more safely, and
- Train more

**More information:** Report: [drive.google.com/file/d/1xN3Un...kDHHwrM\\_sfp-R-6/view](https://drive.google.com/file/d/1xN3Un...kDHHwrM_sfp-R-6/view)

Provided by UN Institute for Training and Research (UNITAR)

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