



## ITU/UNU/ISWA Training workshop on Electronic Waste Statistics

### Final Report

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Prepared by:

ITU and UNU experts as an outcome of the training workshop on E-Waste Statistics organized part of the ITU Green Standards Week, 12 April 2018.

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## **Introduction**

In 2017, the International Telecommunication Union (ITU), the United Nations University (UNU) acting through its Vice Rectorate in Europe hosted Sustainable Cycles (SCYCLE) Programme and the International Solid Waste Association (ISWA), created the Global Partnership for E-waste Statistics to improve the availability of worldwide e-waste statistics as a first, important step to solving the global e-waste issue. The 2017 project compiled existing data on e-waste and produced estimates based on official statistics. It also created a database and published the 2017 Global E-waste Monitor (GEM). Through this, the Partnership was able to communicate data on e-waste to policy makers, the media and to other relevant stakeholders. The Partnership can also facilitate regions in developing and implementation of policies, and fact-based planning of e-waste recycling infrastructure.

The training workshop is being implemented as part of the implementation of the expected results of the on Environment, climate change and emergency telecommunications. In addition, the training designed to allow specialists in the field of ICTs, environment and E-Waste, from Arab and African regions to learn about the global e-waste problem and to have a better knowledge of the e-waste statics and the official measurement framework currently in use in EU. See Appendix 1 for the training workshop agenda and Appendix 2 for a list of participants.

The training workshop was organized by the International Telecommunication Union (ITU) and the United Nations University (UNU) in the context of the Green Standards Week (Zanzibar, Tanzania 9-12 April 2018).

The training workshop was moderated by Mr. Mustafa Al Mahdi, Programme Administrator ITU Arab Regional Office and presented by Mr. Kees Balde, Senior Programme Officer, Mrs. Elise Vermeersch, Research Associate in UNU-ViE-SCYCLE.

## **Report Outline**

The report provides a summary of the event, the documentation, an overview of the attendees, observations/key findings from the discussions, and opportunities for future work and training workshops.

References used in the training workshops are included under the section References.

## 1. Documentation

The training training workshop was paperless. More than 15 presentations were delivered during the Training training workshop and the group discussion. There were also contributions from Arab countries on their practices on e-waste in their countries. Relevant documentation, including agenda, presentations and final report are made available at the Training training workshop website ([Click here](#)).

## 2. Participation

The training training workshop was attended by more than 150 participants representing more than 40 Member States from the Arab and African regions, including Palestine (based on resolution 99) and private sector entities and other national organizations, UN Specialized Agencies and member Academia. The list of participants can be found at the Training training workshop homepage ([Click here](#)).



## **Summary of the Training workshop**

### ***Opening of the training workshop***

Mr. Mulebwa Munaku, Director of Information and Communication Technology, Ministry of Works, Transport and Communication, gave the first opening remarks of the training workshop highlighting the main issues related to e-waste management in developing countries, outlining the main outcomes of a recent study in Tanzania, and inviting ITU and other stakeholders to consider Tanzania for activities on e-waste management.

Eng. Mustafa Al Mahdi, representative of ITU Arab Regional Office thanks TRCA and The Universal Service Fund of Tanzania for hosting this training and highlighted ITU works on E-waste and its partnership with UN agencies including United Nations University (UNU) and International Solid Waste Association (ISWA) on e-waste.

### ***Introduction Session***

Mr. Mustafa ALMAHDI, chaired the introduction session with participation of UNU representative, Dr Kees and Ms Vanessa Gray, Head of LSE division and Ms Maria Victoria Sukenik, Chairman of ITU-T SG5 on Environment, climate change and circular economy.

The session gave a brief overview of e-waste, e-waste statistics, the Global Partnership on E-waste Statistics, the 2017 Global E-waste Monitor, and ITU's mandate and role in the area of e-waste including ITU-T SG5 work on e-waste.

### ***Session 1: Addressing the e-waste challenge***

The session gave an overview of e-waste, e-waste statistics, the Global Partnership on E-waste Statistics, the 2017 Global E-waste Monitor. The session also introduced the participants to the global e-waste problem, illustrating the consequences on health and environment of the improper management of e-waste. Moreover, the session detailed UNU and ITU's mandate and role in the area of e-waste, and the role of international standards in tackling e-waste and achieving a circular economy.

### ***Session 2: Countries presentations:***

Sudan gave a presentation on the status of e-waste in the country, the presentation covered the following points: definition, e-waste in the ICT sector, risks related to e-waste, the role of the Telecommunications & Post Regulatory Authority, Protocol on e-waste management and recommendations to improve the e-waste situation in the country.

Egypt presented the Sustainable Recycling Project (SRI), including the objectives, management, publications, conformity assessment, technology partnership, financing mechanisms, training and capacity buildings, on-going results.

The UNU gave an overview from the main findings of their workshop in the East African Community Region held in November 2017 in Arusha. Most countries in that region are embarking on developing e-waste management laws, and formalized e-waste management infrastructure. Most of the e-waste is managed by the informal sector. The countries do not yet have official statistics on e-waste. Although, data is already available for those countries.

### ***Session 3: General Principles of E-waste Statistics***

The session gave a general overview of the key principles and core indicators of E-waste statistics. The presenter introduced the harmonized framework to measure e-waste statistics and the “Guidelines on E-waste Statistics” developed by the task group on measuring e-waste of the Partnership for Measuring ICT for Development. The benefits of using the framework were also presented along with the e-waste classifications: the official UNU\_KEYS and various links with other classifications. In addition, the presenters list the core indicators of e-waste statistics which enable the measurement of the various e-waste flows:

- Total EEE put on market (sales) (unit kg/inh)
- Total e-waste generated (unit kg/inh)
- E-waste collection (unit kg/inh)
- E-waste collection rate

### ***Session 4: How to track “sales of electronic equipment”, and how to measure “e-waste generated”***

The session provided a methodological guidance on how to obtain data on the two indicators (sales and e-waste generated) of e-waste statistics. All the methodological steps developed by UNU have been described in detail. In addition, the open source software written in R by Statistics Netherlands and United Nations University were presented to give the opportunity to the Member States to replicate the calculations using country data. <sup>1</sup>

### ***Session 5: How to measure e-waste collected and recycled***

The session described in detail the different e-waste collection scenarios and introduced the good recycling technologies for e-waste. During this session, the presenter listed all possible data sources useful to gather data on the e-waste collected and recycled in the different scenarios and explained how to combine different data sources.

### ***Session 6: How to measure imports and exports of e-waste***

The session helped the participants to understand which consumer’s or collector’s behavior lead to an export of Used Electric and Electronic Equipment (UEEE) or to and export of e-waste and which flow needs to be measured. In addition, the presenter summarized the current state of reporting

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<sup>1</sup> <https://www.cbs.nl/en-gb/our-services/methods/statistical-methods/throughput/throughput/waste-over-time-script>

transboundary movements of e-waste under the Basel convention and listed several novel methods to detect imports and exports of used-EEE and e-waste.

***Session 7: How to use the e-waste toolkit***

The Excel calculation Toolkit was introduced in this module. The Tool has been developed by United Nations University to assist countries to compile e-waste statistics and it is an integral part of the methodologies for the calculation of the weight of electrical and electronic equipment (EEE) placed on the market, imported, exported, collected and recycled. The toolkit is available on request by the United Nations University, and the participants were encouraged to use it. The toolkit allows the countries to overwrite the prepopulated data and rerun the calculation with real data from the country and to insert data on imports, exports and quantities of e-waste collected and recycled in the country, where available. The results of the toolkit can be used for baseline studies for e-waste management in the countries, and for planning and monitoring of e-waste legislation in the countries.

***Session 8: Group discussion on e-waste statistics***

All the participants were divided into four groups and asked to discuss about the following topics:

General questions for all groups:

- What are the 3 main challenges related to e-waste in your country?
- What are your expectation for future training workshops?

**Group A:**

- Is there a legislation on e-waste in your country? How is it implemented?
- Who is responsible for e-waste take back in your country?

**Group B:**

- How is the e-waste management situation in your country?

**Group C:**

- What is the situation of imports of e-waste in your country?

**Group D:**

- What are the potential data sources that fits into the UNU measurement framework?

## Observations/Key Findings:

1. The participants were very active all along the training workshop and asked several questions related to various aspects, such as:
  - The sources of Global E-waste Monitor statistics and the possibilities to improve the current data reporting from Africa;
  - Specific equipment to be considered as e-waste or not (e.g. solar equipment, barcode, etc.); evaluation of minimum requirement of recycling (international standards such as WEEELABEX, R2, etc.);
  - Responsibility of producers/manufacturers;
  - Regional and international cooperation for recycling;
  - National difficulties when establishing Environmental Producer Responsibility (EPR) scheme;
  - Collaborations with customs to collect data and existing templates for data collection;
  - National collaboration for e-waste management;
  - Harmonized international legislation on e-waste;
  - How to distinguish UEEE vs. e-waste (ITU's guidelines, training);
  - Collaboration with regional and international organization (e.g. Green Customs, Interpol, IMPEL, etc.) leading to repatriation of illegal shipments;
  - Uncertainty of the estimates and how to limit it (collection of real data, comparison with similar countries);
  - Improving data collection by practitioners (training, assistance, collaboration);
  - The security and safety of workers in recycling/treatment facilities;
  - The importance of updating households' questionnaires based on the national needs and challenges;
  - Impact of repackaged products on statistics;
  - The lifetime of specific products, in particular containing chemicals; the E-waste toolkit; electronic devices in cars.
2. Status of laws is different among countries. Participants recommended to look more specifically at the state of e-waste legislation in each country: some countries have a specific legislation on e-waste management, some countries have specific provisions for e-waste included in the general waste management law, and in some countries, even if the bill is not officially adopted it is already implemented (Nigeria, Uganda).
3. Legislation on e-waste management are implemented by different entities among countries, including the Ministry of Environment, Ministry of ICT, Ministry of trade, E-waste Management Authority, Bureau of Standards, National Environmental Management Council.
4. No official take back system in Uganda, Comoros, Ethiopia, Egypt, Sudan Seychelles Rwanda nor Tanzania (countries reviewed) but some private initiatives.



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5. E-waste management is quite different among countries: formal/informal collector, formal/informal e-waste treatment center.
6. Difficulties to estimate the situation of imports of e-waste due to the difficulties of distinction between UEEE and e-waste. All countries of the group declared importing and exporting UEEE. Two countries (South Africa and Palestine) also import e-waste for recycling. Imported e-waste comes the region and worldwide.
7. Potential data sources in the region include: shipping manifest, custom data, exported/imported EEE, collectors, recyclers, current literature and surveys on EEE.
8. Main challenges related to e-waste reported by the participants include:
  - i. Lack of e-waste management policies, regulations and legislation;
  - ii. Increasing number of UEEE and e-waste
  - iii. Difficulties in measuring imports/exports of e-waste, in particular in countries with numerous foreign borders;
  - iv. Lack of public awareness on the value of waste and the hazardousness of e-waste components;
  - v. Data for e-waste generation.
  - vi. Capacity building programmes on E-Waste management

## **FEEDBACK:**

During the group discussion, the participants mentioned a number of expectations for future training workshops:

- ICT stakeholder approach to effectively manage ICT;
- EPR training workshop;
- Toolkit on e-waste and practical training workshop for users/producers;
- Economic value of e-waste (e.g. valuable components, measuring economic value);
- Method of identification for standards EEE;
- Safety of handling of e-waste;
- More detailed e-waste statistics training
- Use of the data and knowledge of the Global E-waste Statistics Partnership for regions to facilitate e-waste monitoring, implementation of legislation and e-waste management infrastructure.
- Training workshop should be organized twice per year by region.

## Reference

1. 2018 E-waste Statistics - Guidelines on classification, reporting and indicators. Second edition ([Click here](#)).
2. The Global E-waste Monitor 2017 - Quantities, Flows, and Resources ([Click here](#))