

United Nations System-wide Response to Tackling E-waste

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ENVIRONMENT MANAGEMENT GROUP EMG

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Table of Contents



CHAPTER 1

Introduction and Background - 12



CHAPTER 2

E-waste across the United Nations System - 18



CHAPTER 3

Collaboration and Partnerships - 42



CHAPTER 4

Analysis and Conclusion - 50



CHAPTER 5

Key Findings and Recommendations - 54

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Workers transport a large stack of old computers on a small tractor.
China, Nanyang, Guangdong Province

Statement

by the Members of the Issue Management Group on Tackling E-waste[1]

Global consumption of electrical and electronic equipment is on the rise. When these products enter a used and end-of-life state, a large amount of this equipment is sorted incorrectly and shipped illegaly around the world, to then be disposed of or treated under rudimentary conditions. Before these products are manufactured, a significant amount of work is still required during the design stage to ensure the reduction of their ecological footprint.

In recent years, the United Nations has committed itself progressively to addressing the problem of e-waste. The varied nature of this waste stream demands the involvement of a large number of specialised entities from different backgrounds. Maintaining this involvement is also imperative to addressing the entire life-cycle of electrical and electronic equipment. We therefore advocate that for the UN system, addressing the full life-cycle of electrical and electronic equipment is central to the 2030 development agenda. We, the Members of the Issue Management Group on Tackling E-waste, emphasise that where possible in UN entities' projects, programmes and mandates on tackling e-waste, more attention should be paid to the early stages of the life-cycle of electrical and electronic equipment; such as design and production whilst at the same time ensuring that all stages are considered from design, to use, to final disposal.

Maximising UN system-wide collaboration as well as effectively supporting Member States is also at the core of the development agenda. These actions will alleviate the challenges for Member States in achieving the Sustainable Development Goals, particularly relating to targets 3.9, 8.3, 8.8, 11.6, 12.4 and 12.5.

To step up our collaborative efforts to maximise system-wide coherence towards eco-design and a life-cycle approach to tackling e-waste, we hereby commit to the recommendations outlined in the Environment Management Group report: *"United Nations System-wide Response to Tackling E-waste"*. Key findings of the report highlight the need to increase the inclusivity of UN e-waste

1 This statement is made on behalf of IMG Members including UNDP, UN Environment, ITU, UNU, BRS Secretariat, WIPO, DFS, FAO, ILO, UNITAR, UNODC, UNESCAP, WFP, UNICEF, UNIDO, WTO, IMO, SAICM, along with INTERPOL (this list is also available in annex 1).

initiatives, i.a. by formulating more collaboration with the private sector and considering e-waste arisings in developed countries as well as developing and transition economies.

Building on the recommendations of the report to increase collaboration in tackling e-waste, we support further work by Members of the Issue Management Group on Tackling E-waste in the following areas:

1) Undertaking a gap analysis to understand the programmatic, mandate and policy-level preferences of each active entity in order to develop concrete goals for collaboration on tackling e-waste with the support of a lead entity(ies);

2) Establishing a joint work plan on e-waste, based on the findings of the e-waste synthesis report and the outcomes of the gap analysis, which establishes a plan to reach a set of identified goals;

3) Identfying a possible inter-agency coordination mechanism, including the development of a knowledge management platform for UN e-waste related initiatives;

4) Increasing support through the provision of expertise for UN internal e-waste management work, through the support for guidance on e-waste management and the procurement of electrical and electronic equipment within the UN system, and its use and disposal.

In light of the points put forward above, we make our commitment with a view to continuing and enhancing UN system-wide collaboration on tackling the global e-waste problem, whilst at the same time demonstrating that the UN system itself has a duty to ensure that internal e-waste generation is minimised and is managed effectively in its entities.

Executive Summary

This report, *United Nations System-wide Response to Tackling E-waste*, signals the importance of collaboration and coordination among UN entities in sustainably solving the global e-waste problem. It showcases efforts by UN Environment Management Group (EMG) Members who have already undertaken various successful activities in the e-waste domain and also highlights the areas which still require improvement, or where efforts are lacking. Attention is paid to initiatives which address the global e-waste problem with the aim to support Member States in tackling this problem, rather than from an internal UN procurement or waste management perspective. This document is a result of work by the EMG's Issue Management Group (IMG) on Tackling E-waste. By using EMG Members' knowledge and experience, the IMG pursues the following objectives:

- To strengthen the coordination and promotion of joint programmatic and policy initiatives in the UN system, in the area of e-waste prevention and its environmentally sound management, based on necessary holistic life-cycle approaches;

- To add value to already existing programmes, mechanisms and projects including developing eco-design and life-cycle approaches for electrical and electronic equipment (EEE).

This report has brought together the results of entities' responses to a desk-based mapping exercise of prior, existing and future e-waste initiatives aimed at supporting Member States, drawing information from websites and reports by a broad range of UN and related entities. In addition, a survey was distributed in November 2016, directed specifically to Members of the IMG on Tackling E-waste to find out what initiatives these entities are involved in across the life-cycle; their potential for collaboration; and the challenges which they face in the 2030 Agenda for Sustainable Development. In short, the report provides the reader with the following information:

- Highlights 14 international processes and agreements which play a role in the control and regulation of e-waste, whilst also highlighting a further nine processes and agreements at the regional level;

- Identifies 154 prior, existing and proposed e-waste initiatives, and describes the expertise and involvement of 23 UN and related entities in tackling the global problem of e-waste;

- Provides views by UN and related entities regarding further consideration on strengthening UN support for Member States in their efforts to tackle e-waste, with specific reference to the full life-cycle of EEE;

- Reviews the characteristics of notable initiatives undertaken by UN and related entities, providing information on the number of initiatives over time and the total number by life-cycle stage. The type, focus and geographical distribution of e-waste initiatives are also reviewed;

- Identifies 10 notable UN prior and existing partnerships and cases of collaboration which aim to tackle e-waste, and provides possible avenues to streamline e-waste projects and programmes, and enhance collaboration;

- Puts forward conclusions as well as recommendations on increasing the collaboration and coordination of efforts by the UN system in tackling e-waste.

The report finds that a large number of UN and related entities have been involved in various stages of e-waste management, including recycling and environmentally sound management, its transboundary movement, and the design and standardisation of information and communication technologies. However, there is still less attention paid to the reduction of e-waste and to poor practices during the design and production stages of EEE. Nevertheless, in its approach to the various elements of e-waste management, the scope of the UN system stretches widely from policy development to statistical work and training.

The report identifies that the regional distribution of UN and related entities' activities on e-waste are centered substantially in the African and Asian regions, whilst there is less activity in Europe and significantly less in North America, Australia and New Zealand. The Latin American and Caribbean region in recent times has attracted increasingly more activity. More attention in Africa and Asia can be attributed to the more curative nature of many current approaches to e-waste management in these regions such as open burning and acid baths etc., for separating materials. Moreover, these two regions have long been a hub for near-end-of-life and end-of-life legally and illegally imported EEE.

Results of the mapping exercise and survey suggested a need to engage more with the private sector to address business responsibility in the production of EEE. For example, the majority of e-waste initiatives (49%) are carried out through UN-public sector collaboration, whilst e-waste initiatives undertaken through UN-private sector collaboration account for only 36% of initiatives.

Finally, suggestions are made with regards to how the global e-waste problem can be tackled more effectively. These include a focus on repair and refurbishment activities by moving towards supporting new business models and reducing or eliminating taxes on reuse and repair operations. Reference is made to supporting Member States and supranational entities such as the EU in tracking and containing the movement of precious and rare-earth metals used in EEE; and providing support for identifying the link between e-waste and natural resource exploitation through means such as raw material mining. Other suggestions indicated a need for the UN to play a role in informing Member States about relevant e-waste issues by means of expanding national data collection and information sharing; for example, on national e-waste flows and characteristics, and also compiling and sharing good and bad e-waste management practices.

Key Findings and Recommendations

Throughout the report the importance of recognising the full life-cycle of EEE has been highlighted. The report suggests the need for this underlying principle to be considered, where possible, in UN e-waste initiatives; whilst paying more attention to the early stages of the life-cycle such as design and production.

This report also highlights that the majority of initiatives undertaken by UN and related entities to tackle e-waste, focus on relieving the problem in developing economies. However, there is little emphasis on increasing e-waste collection rates in developed economies in the EU, North America, Japan, Australia and New Zealand, as well as little attention to the design and preparedness for reuse of EEE designed and marketed in these countries.

Key findings also suggest a need for greater collaboration with the private sector and national government. UN entities already work closely with the private sector in a number of areas to address various aspects of the global e-waste problem. However, there is potential for more detailed research into the opportunities and challenges of national extended producer responsibility (EPR) implementation; further support for private sector involvement in EPR; and support for increased attention to product design and standardisation.

In addition to the key findings, four follow-up recommendations have been put forward:

1. **Undertaking a Gap Analysis with Support of a Lead Entity or Entities:**

   It is recommended that an analysis be conducted into each entities' e-waste mandate and how the life-cycle stages of electrical and electronic equipment are addressed by the respective entities. The provision of such an exercise would give more insight into the formulation of concrete goals, leading to the establishment of a joint work plan on e-waste and associated entry points for proposed collaboration among UN entities.

2. **Establishing a Joint Work Plan on E-waste with Support of a Lead Entity or Entities:**

   The aim of the gap analysis is to identify concrete goals to increase the collaboration of UN entities' initiatives to tackle e-waste, upon which it is recommended that a joint work plan on e-waste is developed. This work plan would highlight how to reach these goals, with the ultimate aim of being distributed to donors in order to accrue funds for related work outlined in the joint work plan.

3. **Increasing Coordination and Sharing Information:**

   Upon the establishment of a joint work plan on e-waste, the opportunity may exist to further improve the coordination of UN entities. Coordinating the work of each UN entity through an inter-agency mechanism is recommended, which may build on the joint work plan developed and overseen by the lead entity or entities.

4. **Supporting UN Internal E-waste Management:**

   In follow-up of the IMG on Tackling E-waste, an opportunity exists to liaise with the IMG on Environmental Sustainability Management in the UN system and to consider its work on a UN internal approach to consumption and final disposal of EEE.

The key findings identified and recommendations put forward in this report, will require the engagement and commitment of Heads of UN entities in order for substantive changes to be made in increasing collaboration and establishing a more coordinated approach to tackling e-waste.

CHAPTER 1
Introduction and Background



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Ghana



1. The Global E-waste Problem

The use of products with either a battery or power supply is on the rise across the world. According to a study conducted by the United Nations University (UNU) in 2013, an average Belgian household comprised 79 units of electrical and electronic equipment (EEE) in addition to 47 lamps/luminaires in 2013. These EEE cover a wide range from toasters, smoke alarms, cathode ray tube monitors, telephone sets, electrical toothbrushes, coffeemakers, irons, electrical toys, ovens, TVs and computers, to internet routers, energy-saving lamps, printers, fridges, microwave ovens, drills, high-pressure cleaners and washing machines. The same study estimated that the total stock of these goods amounted to 276 kg per inhabitant.[2] This figure is expected to further increase due to technological innovations resulting in a variety of new devices available to households such as intelligent clothes, cars, smart toys and tools, dispensers and ubiquitous medical equipment.

In 2012, an estimated 56.56 million tonnes of EEE were put on the global market.[3] When reaching its end-of-life, this equipment becomes waste electrical and electronic equipment (WEEE), or e-waste. According to the Step initiative[4] "e-waste is a term used to cover all items of electrical and electronic equipment and its parts that have been discarded by its owner as waste without the intention of reuse" (Step, 2014). E-waste is a complex and fast-growing waste stream that, as seen above, covers a large variety of products. The composition of this waste stream, that is, its constituents including toxins and its resource potential, varies significantly by product which makes e-waste very difficult to manage. Rapid product innovation, miniaturisation and replacement, especially for information and communication technology (ICT) products and consumer equipment, are fuelling the increase of e-waste. An internationally-adopted measuring framework developed by the Partnership on Measuring ICT for Development (Baldé et al., 2015) estimates the total amount of e-waste generated in 2014 was 41.8 million metric tonnes (Mt), forecast to increase to 50 Mt in 2018. Looking at the spectrum of EEE, this e-waste was comprised of 1.0 Mt of lamps, 6.3 Mt of screens, 3.0 Mt of small IT (such as mobile phones, pocket calculators, personal computers, printers, etc.), 12.8 Mt of small equipment (such as vacuum cleaners, microwaves, toasters, electrical shavers, video cameras, etc.), 11.8 Mt of large equipment (such as washing machines, clothes dryers, dishwashers, electric stoves, photovoltaic panels, etc.) and 7.0 Mt of cooling and freezing equipment (temperature exchange equipment).

Official e-waste take-back and appropriate processing legislation is organised only in a limited number of countries. Thanks to national e-waste regulation being in place in densely populated countries such as China and India, official take-back legislation covers around four billion people globally[5]. However, the existence of legislation does not necessarily imply successful enforcement or the existence of sufficient e-waste management systems. Most national take-back legislation does not cover all e-waste categories. In some countries, legislation exists for only one type of appliance, or the collection rate is low. Driven by these national laws, at least 6.5 Mt of e-waste was reported as formally treated by national take-back programmes and schemes

2 Recupel, UNU, Ffact (2013): (W)EEE Mass balance and market structure in Belgium - see http://i.unu.edu/media/unu.edu/news/39523/Recupel-Report-FINAL.pdf

3 UNU (2015): Global E-waste Monitor - see http://ewastemonitor.info/download/global-e-waste-monitor/

4 Step is an international initiative comprised of manufacturers, recyclers, academics, governments and other organisations committed to solving the world's e-waste problem. The secretariat is hosted by UNU. By providing a forum for discussion among stakeholders, Step is actively sharing information, seeking answers and implementing solutions. See http://www.step-initiative.org

5 UNU(2015):GlobalE-wasteMonitor-seehttp://ewastemonitor.info/download/global-e-waste-monitor/

at the global scale (around 15.5% of e-waste generated in 2014). Besides national take-back systems, e-waste items such as mobile phones, lamps and electrical toothbrushes are also disposed of with mixed residual waste, eventually treated together with other municipal waste.

Regarding the collection of e-waste outside take-back systems, no harmonised data with good regional coverage exists to date. Furthermore, although a prominent issue, the transboundary movement of e-waste is not recorded by official sources. Estimates on the magnitude of transboundary movement range from 5% of total generated waste to 90%, though a recent study by INTERPOL focusing on exports from the European Union estimates it to be around 15%. In some developing economies, it is likely that all e-waste is collected outside take-back systems. In other developed economies, as much as one third of the e-waste market falls into this collection category.[6] The impact on society and the environment by collection and recycling undertaken outside official take-back systems varies significantly, as this sector is less regulated than the official take-back scenario.

Improper and illegal e-waste traffic is prevalent in most developing economies, irrespective of whether or not national e-waste legislation exists. Consumers, dismantlers and recyclers are often guilty of illegal dumping, particularly of "open dumping", where non-functional parts and residues from dismantling and treatment operations such as open burning or acid baths are released into the environment. The annual supply of toxins from e-waste includes 2.2 Mt of lead glass, 0.3 Mt of batteries and four kilo tonnes (kt) of ozone-depleting substances (Chlorofluorocarbons).[7] Whether the raw materials are recycled or the toxins lead to actual harmful emissions will largely depend on their collection and treatment methods.

Further to the challenges at the end of the life cycle of EEE, the production of these goods is resource and energy-intensive, also causing adverse environmental impacts through the depletion of natural resources and the exacerbation of climate change as a result of fossil fuel use. Research shows that the amount of fossil fuels used to produce a computer are equivalent to approximately 9 times the computer's weight, while approximately half of the elements of the periodic table go into the production of a mobile phone including neodymium, terbium and dysprosium. While many of these rare earth metals are common in EEE, they are seldom found in sufficient amounts to be extracted economically.[8] Considering that only 6.5 Mt of the 41.8 Mt of e-waste are documented and recycled with the highest available standards, the full potential of e-waste prevention, collection and treatment has not been explored.

E-waste is a global challenge, not only due to EEE production being subject to a network of global supply chains and the increasing generation of e-waste worldwide, but also because its proper treatment and prevention require the active engagement of a diverse set of actors. These actors often span national borders and continents. In light of the above, the UN system has a significant role to play in paving the pathway towards sustainable solutions for the global e-waste challenge.

2. E-waste and the 2030 Agenda for Sustainable Development

In September 2015 at the United Nations General Assembly in New York, the Sustainable Development Goals (SDGs) were adopted as an outline for the 2030 Agenda for Sustainable Development. 17 goals and 169 targets were set to be achieved to end poverty, protect the planet, and ensure prosperity for all. The environment is embedded in each of the 17 integrated goals, with e-waste specifically linking to a number of these targets. Increasing levels of e-waste globally pose challenges for the implementation of the 2030 Agenda

6 UNU(2015):GlobalE-wasteMonitor-seehttp://ewastemonitor.info/download/global-e-waste-monitor/

7 ibid

8 Kuehr & Williams (eds.) (2004): Computers and the Environment. Understanding and Managing their Impacts. Kluwer/Springer.

for Sustainable Development, requiring an efficient approach and coordinated action by the UN system to support countries in their efforts to manage their e-waste in a sustainable manner and to minimise the creation of e-waste.

The question of where and how the UN can best support Member States and other stakeholders in achieving the areas in which e-waste relates to the SDGs, may still require some fine tuning. This may include establishing national laws, education and law enforcement pertaining to e-waste, and ensuring that these are not simply guidelines. This may also include linking with governments and ministries to establish platforms in order to review existing national policies and e-waste management systems, to provide expertise on developing e-waste management schemes, preventive measures and infrastructure, and the sharing of best practices.

In particular, targets 3.9. 8.3, 8.8, 11.6, 12.4 and 12.5 relate to the issues associated with e-waste. This relationship involves the link between deaths and illnesses, and hazardous substances across their life-cycle; decent work and labour rights; air quality and municipal waste management; and the reduction of waste generation through use of the waste hierarchy. At the same time, it is possible that the proper implementation of parts of the 2030 Agenda could generate new e-waste issues. The large-scale roll-out of renewable energy technologies, including solar photo-voltaic cells, batteries, grid equipment, etc., will improve the lives of many but may equally generate increasing amounts of e-waste.

SDG Target 3.9:

By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

E-waste contains a number of hazardous components, which when dismantled and processed inappropriately, can threaten healthy lives through the contamination of water, soil and air. The elimination of hazardous substances during the design and production of electrical and electronic equipment, and the dismantling and processing of e-waste should be considered through environmentally sound activities. Currently in some regions, many dismantling activities are undertaken by primitive and crude means which cause damage to human health. For example, the process of open cable-burning to access copper leads to the release of furans and dioxin emissions.

SDG Target 8.3:

Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalisation and growth of micro-, small- and medium-sized enterprises, including through access to financial services

In developing economies, a large percentage of e-waste collection and processing is undertaken by the informal sector, both unorganised and organised in different countries. These jobs are not decent and the formalisation of this sector is required in order to both bring rights to these workers and also to ensure the environmentally sound management (ESM) of e-waste.

SDG Target 8.8:

Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment

Formalisation will first and foremost require recognition by the state, and the integration of these workers into a waste management system. By achieving this, labour rights are more likely to be protected. In some cases, worker organisation, collectivity, and social solidarity economics have led to e-waste worker groups being established. In some cases this has reduced the precariousness of employment for these workers.

SDG Target 11.6:

By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

Over half of the world's population lives in cities, which consumes an enormous 75% of the world's natural resources. The rapid urbanisation witnessed across the globe is leading to the condensing of environmental and human health risks. The unsound management of e-waste in urban areas is a problem that must be addressed, as there are currently pressing issues concerning low collection rates, the disposal of e-waste through general household bins with limited compulsory separate collections, and the open burning and dumping of waste. In some cities, a move towards smart infrastructure and the use of information communication technologies (ICTs) for connecting communities and making waste collection more efficient is underway.

SDG Target 12.4:

By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment

Currently, the e-waste management practices most common in developing economies involve open dumping or the use of other chemical processes such as acid baths and amalgamation to separate valuable materials in e-waste. During the production of EEE, there is little attention applied to eco-design, which implies the absence of any life-cycle thinking. Hence, much EEE still contains hazardous chemicals such as mercury or lead – which do not enable the durability of products. For some of these chemicals there are substitutes (alternatives) which are non-hazardous. But this does not apply for all chemicals yet.

SDG Target 12.5:

By 2030, substantially reduce waste generation through prevention, reduction, repair, recycling and reuse

By designing EEE which contains parts that are easily separable, that constitute recycled metals and that are not hazardous, it is possible to prevent waste generation at the end-of-life. It is important that manufacturers shift from planned and perceived obsolescence design and that consumers demand more durable products. Manufacturers should also be encouraged to design products that are easily reparable and which allow for faulty components to be easily replaced. In addition, recycling and reuse would be more easily achieved if manufacturers were obliged to meet extended producer responsibility (EPR) objectives. Currently, EEE is not designed with circularity in mind but instead linearity which fails to support prevention, reduction, repair, recycling and reuse and instead supports a "throw-away society".

3. About this Report

This report is a result of the work undertaken by the inter-agency Issue Management Group (IMG) on Tackling E-waste: Towards Eco-design and a Life-cycle Approach for E-products. The time-bound IMG was established in 2016 by the United Nations Environment Management Group (EMG[9]), against the background of a perceived need to strengthen collaboration among the many existing initiatives and active stakeholders in the UN system in the area of e-waste.

9 The EMG is an interagency cooperation body on environment in the UN system that includes members from the specialised agencies, funds and programmes of the UN, the secretariats of the Multilateral Environmental Agreements, the Bretton Woods institutions and the World Trade Organization. The group is chaired by the Executive Director of UN Environment and UN Environment provides the secretariat to the group (see also www.unemg.org).

The objective of the e-waste IMG is to encourage further cooperation and synergies among UN entities. It aims to achieve this by strengthening the coordination and promotion of joint programmatic and policy initiatives in the UN system in its support to Member States in the area of e-waste and its environmentally sound management based on a holistic life-cycle approach.

As part of its mandate, the e-waste IMG with the support of the United Nations University (UNU), undertook a mapping exercise of prior, existing and proposed e-waste initiatives by the UN system and related entities. In total, 23 entities were identified as active in e-waste by a desk-study prepared by the EMG secretariat, whom also identified 154 e-waste initiatives undertaken by these entities. E-waste initiatives include country programmes and projects, any collaboration and partnerships to tackle e-waste, reports, guidance, quantitative studies and inventories on e-waste and any training and tools for practitioners. Furthermore, a survey that was aimed at the entities active in the IMG, was conducted to seek their views on the e-waste arena in the context of the UN system and the 2030 Sustainable Development Agenda.

This synthesis report brings together the results of the mapping exercise and the survey, shedding light on the many activities and stakeholders in the UN system in the area of e-waste, pointing to areas in the life-cycle process where efforts could be strengthened in the UN system and providing recommendations on how system-wide collaboration and cooperation could be further strengthened.

The report is structured as follows:

Chapter 2 provides an overview of ways in which the UN system provides support to Member States covering all aspects and phases of the life cycle, including the acquisition of raw materials, design, production, transportation and delivery, consumer use, repair, reuse, end-of-life treatment and final disposal.

Chapter 3 presents examples of existing collaboration in recent and current e-waste initiatives, where UN and related entities have worked together to tackle e-waste issues, and highlights possible areas for streamlining e-waste initiatives.

Chapter 4 offers an analysis of the data and information collected, and a summary of the conclusions.

Finally, **chapter 5** provides a set of recommendations for how collaboration on tackling e-waste in the UN system could further be strengthened and initiatives enhanced.



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A woman sorts through chips recovered from old computers.
China, Guiyu, Guangdong Province

CHAPTER 2

E-waste across the United Nations System



As e-waste has entered the global agenda during the past decade and has led to substantial health and environmental problems such as those highlighted in chapter 1, its presence within the various activities undertaken across the UN has increased considerably. This chapter begins by exploring prior, existing and proposed initiatives in place across the UN system to tackle the transnational and substantially global problem of e-waste. Since the early 2000s, UN and related entities' activities have been recognised as corresponding to addressing wide-ranging concerns such as the environmentally sound dismantling, recycling and disposal of e-waste, the transboundary movement of e-waste and the relationships among e-waste, labour and human health.



1. Initial International Efforts

In response to the exponential growth in the amount of e-waste generated worldwide and international controversy over its export, recent decades have seen an escalation of used and end-of-life electronics regulations at the local, national, regional and international levels. These policies encompass provisions for the production of electrical and electronic equipment (EEE), as well as the collection, treatment and export of discarded products. In order by date, this section provides a brief overview of some of the key international processes and agreements relating to used and end-of-life electrical and electronic equipment.

Key International Processes and Agreements

At the international level

International Convention for the Prevention of Pollution from Ships (MARPOL) (73/78/97)

Together with its six annexes, MARPOL addresses oil pollution from ships, from noxious liquid substances carried in bulk, from harmful substances carried by sea in packaged form, from sewage and garbage and the prevention of air pollution from ships. MARPOL has greatly contributed to a significant decrease in pollution from international shipping and applies to 99% of the world's merchant tonnage. In particular, MARPOL Annex V generally prohibits the discharge of all waste into the sea, unless explicitly permitted under the Annex. Among other wastes, MARPOL includes e-waste generated during the normal operation of ships and its liability of being disposed of continuously or periodically.

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989)

The Basel Convention aims to protect human health and the environment against the adverse effects resulting from the generation, management, transboundary movements and disposal of hazardous and other wastes. Among the key provisions of the Basel Convention, are environmentally sound management, transboundary movement, waste minimization and waste disposal practices.

E-waste is included in Annex VIII, added to the convention in 1998 by the 4th meeting of the conference of the parties (Decision IV/9). It provides further elaboration as to the wastes regulated under the convention, and exists under entry A1180 for hazardous waste, as well as being included in Annex IX to the convention under the entry B1110 for non-hazardous waste. Equipment often contains hazardous components or substances and therefore may qualify as hazardous waste if it exhibits the hazardous characteristics listed in Annex III. However, the presence of such a component or substance in equipment should not necessarily cause the equipment as a whole to be deemed hazardous under the convention. E-waste should therefore be presumed to be hazardous waste unless it can be shown either that it does not exhibit hazardous characteristics or that it does not contain hazardous components or substances.

The Nairobi Declaration and decision IX/6 was adopted by the ninth conference of the parties to the Basel Convention in 2006, and gave a mandate to the secretariat of the Basel Convention

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Men standing at the entrance of a small factory in India's largest slum, Dharavi, where used electronic appliances, such as fridges, are being recycled.
India, Mumbai (Bombay), Maharashtra

to implement a work plan for the environmentally sound management of e-waste. The e-waste work plan included activities in the following work areas: programmes of activities for the environmentally sound management of e-waste in Africa, in Asia Pacific and in South America; the Partnership for Action on Computing Equipment (PACE); and, the preparation of Technical Guidelines on transboundary movement of e-waste, in particular regarding the distinction between waste and non-waste.

Montreal Protocol on Ozone Depleting Substances (1989)

The Montreal Protocol is an international treaty which aims to protect the ozone layer by phasing out the production and use of ozone depleting substances (ODS). ODS, chlorofluorocarbons (CFCs) and hydrochlorofluorocarbon (HCFCs) as refrigerants are still used in some refrigerators and air conditioners. Waste refrigerators and air conditioners will also likely contain CFCs or HCFCs.

International Labour Organization (ILO) Convention on Chemicals, concerning safety in the use of chemicals at work (1990)

ILO Convention (No. 170) stresses the right of workers to information about the chemicals they use at work and imposes responsibility on suppliers and employers to provide information and training; whilst recommendation (No. 177) sets standards for classification, labelling and marking, and chemical safety data sheets, and includes steps for employers to include measures such as the monitoring of exposure, operational control, medical surveillance, first aid and emergency preparedness, and close cooperation between workers and employers.

Organisation for Economic Cooperation and Development (OECD), Council Decision Waste Agreement (1992)

This Council Decision is an agreement among developed Member States that aims to control the transboundary movement of hazardous waste – wastes exported only for the purpose of material recovery. The Waste Agreement established a framework for OECD Member States to supervise and control the transboundary movement of wastes within the OECD area.

United Nations Framework Convention on Climate Change (UNFCCC) (1994)

Although not directly involved in e-waste, UNFCCC has been active as part of the E-waste from Toxic to Green initiative. Through the initiative, waste pickers in India have been trained to collect electronic waste, such as computers and mobile phones, for safe disposal and recycling. The initiative aims to make waste pickers more resilient to poverty by providing green jobs that increase their incomes and protect them from the risks of exposure to toxins and heavy metals.

International Conference on Chemicals Management (ICCM) (1995)

ICCM is a mechanism established to strengthen cooperation and increase coordination in the field of chemical safety. Since its adoption in 2006, it has acted as a platform upon which to discuss and review progress in the implementation of the Strategic Approach to International Chemicals Management. The IOMC initiates, facilitates and coordinates international action to achieve the goal of sound chemicals management, an outcome of the 2002 World Summit on Sustainable Development.

Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1998)

The Rotterdam Convention promotes shared responsibilities in relation to the international trade of certain hazardous chemicals in order to protect human health and the environment from potential harm. The convention promotes open exchange of information about their characteristics, by providing for a national decision-making process on their import and export and by disseminating these decisions to parties. It also calls on exporters of hazardous chemicals to use proper labelling, to include directions on safe handling, and to inform purchasers of any known restrictions or bans.

Stockholm Convention on Persistent Organic Pollutants (2001)

The Stockholm Convention is a global treaty designed to protect human health and the environment from chemicals that remain intact in the environment for long periods of time, that become widely distributed geographically, that accumulate in the fatty tissues of humans and wildlife, and that have harmful impacts on human health or on the environment. There are several persistent organic pollutants present in e-waste, and the listing of e-waste requires parties of the Stockholm Convention to take appropriate measures to eliminate the release of these pollutants from stockpiles and wastes.

World Health Organisation (WHO), World Health Assembly Resolutions (2006 – 2016)

Resolution WHA59.15 (2006):

In 2006, the resolution on the Strategic Approach to International Chemicals Management was agreed.

Resolution WHA63.25 (2010):

In 2010, the resolution on the improvement of health through safe and environmentally sound waste management was agreed.

Resolution WHA67.11 (2014):

In 2014, the resolution on public health impacts of exposure to mercury and mercury compounds was agreed.

Resolution WHA69.4 (2016):

At the 2016 World Health Assembly, the resolution on the role of the health sector on toxic chemicals and wastes was agreed.

Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (2009)

This convention was adopted at an International Maritime Organisation (IMO) diplomatic conference held in Hong Kong. It aims to promote the substitution of hazardous materials in the construction and maintenance of ships by less hazardous, or preferably non-hazardous materials; and to minimise the environmental, occupational, health and safety risks associated with ship recycling.

Minamata Convention on Mercury (2013)

The Minamata Convention is a global treaty to protect human health and the environment from the adverse effects of mercury. The convention draws attention to a global and ubiquitous metal that, while naturally occurring, has broad uses in everyday objects and is released to the atmosphere, soil and water from a variety of sources. Controlling the anthropogenic releases of mercury throughout its lifecycle has been a key factor in shaping the obligations under the Convention.

Paris Climate Agreement (2015) under the United Nations Framework Convention on Climate Change

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping the global temperature rise this century below a "two-degree Celsius above pre-industrial levels", and to pursue efforts to limit the temperature increase even further to "1.5 degrees Celsius". Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. It recognizes that sustainable lifestyles and sustainable patterns of consumption and production, with developed country parties taking the lead, play an important role in addressing climate change.

Connect 2020 Agenda for Global Telecommunication/ICT Development (2014)

This global agenda sets out the shared vision, goals and targets that Member States of the International Telecommunication Union (ITU) have committed to achieve by 2020. These targets will be achieved in collaboration with stakeholders within the ICT ecosystem.

With the adoption of the Connect 2020 Agenda, ITU Member States have committed to transitioning to an information society, empowered by the interconnected world, where telecommunication/ICT enables and accelerates socially, economically and environmentally sustainable growth and development for everyone. One of the key goals of the Connect 2020 Agenda is sustainability. Within this specific goal, target 3.2 addresses the issue of e-waste through reducing the volume of redundant e-waste by 50% by 2020.

At the regional level

Bamako Convention on the ban on the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa (1991)
A treaty of African nations prohibiting the import of any hazardous (including radioactive) waste. The Bamako Convention uses a format and language similar to that of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, but is much stronger in prohibiting all imports of hazardous waste. UN Environment undertakes the secretariat duties.

Waigani Convention, South Pacific (1995)
A treaty that bans the export of hazardous or radioactive waste to countries who are Members of the Pacific Islands Forum, and prohibits forum island countries from importing such waste.

The Aarhus Convention (2001), United Nations Economic Commission for Europe (UNECE)
The convention contains the Aarhus Protocol on Heavy Metals, which was one of the 8 protocols designed to address air quality issues within the EU.

The Restricting of Use of Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive, European Union (2002)
The directive restricts the use of six hazardous materials in the manufacture of various types of electrical and electronic equipment.

The Waste Electrical and Electronic Equipment Directive, European Union (2003)
The Directive provides for the creation of collection schemes where consumers return their e-waste free of charge. These schemes aim to increase the recycling of e-waste and/or the reuse of EEE.

Regulation (EC) No 1013/2006 of the European Parliament and of the Council on shipments of waste (2006 (2016))
The Regulation pays attention to promoting safe waste shipments within the European Union and with non-EU countries, setting up the enforcement of waste shipment regulation. The regulation has recently been updated in line with further measures foreseen by the European Commission in its Circular Economy Action Plan to help ensure that the waste shipment regulation is properly implemented, and that illegal shipments causing the leakage of raw materials are addressed effectively.

The Durban Declaration, Africa (2008)
The declaration called for an African regional platform/forum on e-waste alongside international bodies. The requirements of the declaration are as follows: countries must review existing legislation, improve their compliance with legislation and amend existing legislation regarding e-waste management.

The Libreville Declaration, Africa (2008)
As an outcome of the first inter-ministerial conference on health and the environment in Africa, the declaration recognised that there is a need to further research the vulnerability of humans to environmental risk factors, and to establish policies to increase this understanding. These include risk factors for poor health which can arise from e-waste.

The Waste Electrical and Electronic Equipment Recast Directive, European Union (2012)
The Recast Directive builds on the existing WEEE Directive, by setting high recycling collection targets.

2. Entities Active in E-waste Management

This section presents brief summaries of the UN and related entities mainly active in the area of e-waste. Based on the focus of their initiatives identified during the mapping stage and subsequent survey replies, entities have been grouped within broad thematic categories as summarised in figure one. The categories below indicate the main

thematic areas in which these entities are active and where their initiatives are most likely to interact with e-waste. Due to the diverse and crosscutting nature of entities' roles and mandates, a substantial number of initiatives will inevitably interact with more than one of the thematic areas below. For example, although a convention secretariat, the secretariat of the Basel, Rotterdam and Stockholm Conventions plays a role in policy development. In other situations, aspects of e-waste initiatives undertaken by one entity may well interact with areas other than the environment, possibly including health and sanitation, and legal aspects, etc. Hence, it should be noted that some entities may be active under other categories, and that figure one simply aims to provide a general overview.

Related Entities

Although not currently a Member of the IMG, nor part of the UN system, the Organisation for Economic Cooperation and Development (OECD) has been included in figure one due to its involvement in e-waste activities and similar presence at the international level. Whilst not being part of the UN system, INTERPOL has also been included due to its interest in the e-waste arena and involvement as a Member of the IMG. The World Bank has also been included in this list due to its involvement in e-waste related work. A more detailed overview of each of the above UN and related entities is provided in the following sub-section.

Figure 1.
UN and Related Entities Active in E-waste Management by Sector



UN and Related Entities' Expertise and Involvement in E-waste

1- Department of Field Support – United Nations Peace Keeping (DFS)

Although DFS is not directly involved in e-waste initiatives in its operations, as part of its mandate they have recognised particular aspects which may lead to higher volumes of e-waste being produced by their activities. DFS uses large amounts of electrical and electronic equipment (EEE), and in the regions where the department operates, considerable challenges remain for e-waste management. The challenge of managing this waste is also elevated by the significantly mobile nature of DFS. Where peace keeping operations are established, most governments do not have environmental regulations for e-waste nor do they have the proper means to manage, dispose and recycle it.

2- Food and Agriculture Organisation (FAO)

FAO offers expertise with regards to the use of EEE in agricultural production. Increasingly, FAO and its partners are deploying a wide range of EEE, including mobile devices, drones, smart agricultural equipment and sensors, in order to overcome pressing challenges in agricultural development. Consequently, FAO ensures consideration for the sustainability of its projects and associated used hardware. Similar to DFS, the mobile and field-based nature of FAO's activities brings fresh challenges for internal e-waste management. After end-of-use in the field, there is little or no control regarding the disposal of e-waste; although, when FAO country offices sell used EEE to third parties they give guidelines on its use and disposal.

3- Global Environment Facility (GEF)

GEF is a partnership for international cooperation where 183 countries work together with international institutions, civil society organisations and the private sector, to address global environmental issues. It has provided funding for several projects relating to e-waste, the majority of which have come through its 4th, 5th and sixth replenishment phases between 2006 and 2018.

4- Global Partnership on Waste Management (GPWM)

E-waste management is a focal area of the GPWM, which is coordinated by ITU. Through its focal area on e-waste, GPWM can provide expertise on mainstreaming and disseminating environmentally sound management of e-waste in developing economies. The work plan for the focal area on e-waste proposes to develop sustainable business plans which will include an effective take-back system, a manual dismantling facility, local pre-processing activities and sound end-processing activities. The partnership currently hosts a knowledge platform on its website, which aims to provide waste management databases, information on events related to waste management, country profiles and guidelines etc. As the GPWM acts as a partnership aiming to enhance international cooperation among stakeholders, it has been included in this section as well as under collaboration and partnerships in chapter 3.

5- INTERPOL

INTERPOL, through the Countering WEEE Illegal Trade (CWIT) Project, examined the movement of e-waste within and out of Europe. The aim of the project was to provide a set of recommendations to support the European Commission, law enforcement authorities and customs organisations for countering the illegal trade of e-waste in and out of Europe. The CWIT Project comprised a multi-disciplinary consortium funded by the European Commission, carried out in partnership alongside entities including UNU and WEEE Forum. Based on its experience in the illegal movement of e-waste, INTERPOL can provide expertise in countering the illegal trade, possession, transportation and handling of e-waste and its subsequent pollution of the environment.

6- International Labour Organization (ILO)

Since 2012, the ILO has undertaken a series of studies and produced a selection of corresponding reports exposing the interactions between

labour and e-waste. Notably, these include The Global Impact of E-waste: Addressing the Challenge (2012) and Tackling Informality in E-waste Management (2014). ILO can provide expertise with regards to the interaction between e-waste and employment, including but not limited to the following areas: promoting youth employment, promoting transition to a formal economy, promoting health and safety at work, eradicating forced and child labour, promoting skills, social security and wage policies, promoting equality, promoting freedom of association and collective bargaining, and green jobs.

ILO's four strategic objectives pertain significantly to the end-of-life treatment stage, including treatment and recycling operations specifically, as the ILO has undertaken research in these fields. ILO conventions and recommendations aim to tackle occupational health and safety in these domains, more specifically, hazardous work in e-waste management. From a general perspective, ILO recommendations can be used to formalise the recycling industry, in particular through 'Transition from the Informal to the Formal Economy Recommendation, 2015 (No. 204)'.

7- International Maritime Organisation (IMO)

The IMO has developed Guidelines for the Development of the Inventory of Hazardous Materials (MEPC.269(68)) which provide recommendations for developing an inventory of hazardous materials to assist compliance with regulation 5 of the 2009 Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships. The objective of the inventory is to provide ship-specific information on the actual hazardous materials present on board, in order to protect health and safety and to prevent environmental pollution at ship recycling facilities. The IMO can provide expertise related to the generation of e-waste on board maritime vessels, in the context of Annex V of the International Convention for the Prevention of Pollution from Ships, and the 2009 Hong Kong International Convention.

8- International Telecommunication Union (ITU)

To tackle e-waste, ITU develops international standards, facilitates collaboration and raises awareness with the information communication technology (ICT) industry. ITU promotes innovative solutions in the e-waste domain, and develops green standards to reduce the negative impact of ICTs. ITU also produces reports, guidelines, frameworks, toolkits and educational material to raise awareness on e-waste among its Member States, industry Members and academia. It also provides direct assistance in the planning and implementation of e-waste management techniques. The underpinning of ITU's work falls within the ITU Connect 2020: A Global Framework for Action in the ICT sector, which includes Target (sustainability) 3.2 calling for the reduction of the volume of redundant e-waste by 50%, by the year 2020.

ITU-T Study Group 5 on Environment, Climate Change and Circular Economy of the ITU Telecommunication Standardization Sector (ITU-T) approved nine new ITU-T Recommendations (international standards) and five ITU-T Supplements related to E-waste and Circular economy during the 2013-2016 study period. Currently, ITU-T SG5 is working on the development of several recommendations and supplements on e-waste and circular economy for example a draft recommendation on Circular Economy: Guideline to migrate to circular ICT network infrastructure. ITU-T SG5 keeps an updated database on ITU Green ICT Standards and supplements. ITU also organises several events and training on e-waste management and is involved in various partnerships, fora and the publication of reports including: the 2014 Partnership on Measuring ICT for Development; the co-organisation of the 2003 and 2005 World Information Summit on the Information Society; and a joint study on the Sustainable Management of E-waste in Latin America.

Recently, ITU launched "United for Smart Sustainable Cities" (U4SSC) in response to SDG

11 on making cities inclusive, safe, resilient and sustainable. U4SSC is the global initiative for information exchange, knowledge sharing and partnership building on smart cities, with the aim of formulating strategic guidance to implement the New Urban Agenda and the Sustainable Development Goals. U4SSC will also explore the potential of integrating the concept of circular economy into the existing trend of smart sustainable city transitions. One of the deliverables upon which U4SSC is working on is "Guidelines on strategies for circular cities".

9- Organisation for Economic Cooperation and Development (OECD)

Since 2007, OECD has been involved in general waste and e-waste issues through various guidance, publications and policy fora, in the areas of extended producer responsibility (EPR) and sustainable materials management. OECD has also been involved in the preparation of workshops and dialogues at the country level, in particular focussing on EPR.

10-Secretariat of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal

In 2002 the Basel Convention started to address e-waste issues, including its environmentally sound management, the prevention of illegal traffic to developing economies, developing capacity around the globe to better manage e-waste and establishing partnerships around e-waste. The secretariat provides expertise developed through the Mobile Phone Partnership Initiative (MPPI) and the Partnership for Action on Computing Equipment (PACE). These initiatives offer guidance and guidelines on the environmentally sound management of used and end-of-life mobile phones and computing equipment, the collection and refurbishment of mobile phones and the testing, refurbishment and repair of used and end-of-life computing equipment.

Transportation and final disposal are the broad scope and objectives of the convention. The e-waste work plan adopted at the ninth conference of the parties in 2008, included activities in several work areas. These comprised programmes of activities for the environmentally sound management of e-waste in Africa, Asia Pacific and in Latin America; the PACE work stream, and preparation of the technical guidelines on transboundary movements of electrical and electronic waste and used electrical and electronic equipment, in particular regarding the distinction between waste and non-waste. The technical guidelines were adopted on an interim basis, at the 12th of the conference of the parties by decision BC-12/5. At the 13th conference of the parties in 2017, parties decided to look further into the technical guidelines through an expert working group.

The Basel Convention has another work stream on the environmentally sound management of hazardous and other waste, through developing an environmentally sound management framework, which aims to establish a common understanding of what sound management encompasses and identifies tools and strategies to promote its implementation. The toolkit which is a part of this framework is a collection of practical tools to assist parties and other stakeholders in ensuring environmentally sound management of hazardous and other wastes, including e-waste.

11-Strategic Approach to International Chemicals Management (SAICM)

SAICM's overall objective is the achievement of the sound management of chemicals throughout their life cycle so that by the year 2020, chemicals are produced and used in ways that minimise significant adverse impacts on the environment and human health. The SAICM secretariat provides a backing to its e-waste related work on Hazardous Substances within the Life Cycle of Electrical and Electronic Products (HSLEEP), which facilitates the expertise of UNIDO, the Basel, Rotterdam and Stockholm Conventions and UN Environment IETC in leading activities on tackling the presence of hazardous substances throughout the life-cycle of these products. The secretariat addresses the need for more investments in the upstream part of the life-cycle, and the need to focus on eco-design and safer alternatives to the toxic substances currently identified in e-waste.





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12- The World Bank

Since 2010, The World Bank has been involved in addressing e-waste; for example, through the implementation of an electronic waste pilot project in Egypt and the development of a re-manufacturing site in Ethiopia. The World Bank, in cooperation with the Egyptian Ministry of Communications and Information Technology, is working on creating a road map for the implementation of an e-waste pilot project, including economic incentives, a collection strategy and involvement of the private sector and non-governmental organisations in e-waste management. Other e-waste initiatives have involved projects to tackle polychlorinated biphenyls (PCBs), including projects between 2010 and 2015 on PCB management in Lebanon and on PCB management and disposal in Nigeria.

13- World Health Organisation (WHO)

WHO has been involved in e-waste through its involvement alongside the United Nations University, focussing on e-waste and its health impacts. WHO provides expertise in the reduction of the impacts on health of vulnerable informal e-waste recyclers. From a health perspective, WHO focusses on working with health actors at the global and local levels, to inform, monitor, build capacities and promote e-waste issues as an important factor of health conditions.

14- World Intellectual Property Organisation (WIPO)

WIPO has been involved in e-waste through the publication of its Patent Landscape Report on E-waste Recycling Technologies in 2013, undertaken in cooperation with the secretariat of the Basel Convention. WIPO offers expertise and knowledge in areas relevant to patenting and innovation on specific technologies in various domains such as e-waste recycling.

15- United Nations Children's Fund (UNICEF)

UNICEF is focussing on e-waste issues internally. As part of its action plan to improve the eco-efficiency and environmental impact of its operations, UNICEF is planning to analyse the lifecycle of office assets (mainly cars) and office equipment to help identify the waste streams that have the greatest negative impact on children, and therefore identify priority areas for action. UNICEF offers expertise to identify e-waste disposal sites which involve child labour and that affect the health of children. UNICEF then supports the drafting of policies to tackle this issue.

16- United Nations Conference on Trade and Development (UNCTAD)

Through its 2006 Trade and Environment Review: environmental requirements and market access for developing countries, UNCTAD reviewed recent developments in regulatory and other policy instruments in the EU, Japan and Switzerland, concerning e-waste in major markets and their implications for manufacturers in developing economies. UNCTAD provides expertise in supporting developing economies to access the benefits of a globalised economy more fairly and effectively, and helps equip them to deal with the potential drawbacks of greater economic integration.

17-United Nations Development Programme (UNDP)

UNDP supports countries in strengthening their e-waste management capabilities through research, innovation, institutional and regulatory means and provides expertise with regards to end-of-life-treatment and final disposal activities. Because UNDP has local offices in most countries and is usually involved in developing policies, leadership skills, partnering abilities, institutional capabilities and building resilience in order to sustain development, it could provide reliable information and advice on these issues from many sectors of the economy, including on imports and exports.

Among many other notable e-waste initiatives, UNDP is involved in reducing unintentional persistent organic pollutants and mercury releases from e-waste treatment, among other waste types in Colombia. In addition, UNDP and the Chinese web services company, Baidu, launched the Baidu Recycle App in China which connects individuals dis-

posing of e-waste with dismantling and recycling companies; a result of the UNDP Asia-Pacific Innovation Fund. This strategic alliance aims to scale up Baidu Recycle by attracting key stakeholders in recycling and dismantling, as well as manufacturers to build an internet-based nationwide e-waste management eco-system.

18-United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)

In 2016, an informal roundtable discussion was held by UNESCAP, with the aim for governments to hold initial discussions and share suggestions on developing and enhancing regulatory frameworks to tackle e-waste. Businesses were invited to share good practices in minimising e-waste along their supply chains. Discussions were held on the main elements of a roadmap or guide on regional cooperation and national actions to enhance the adoption of Responsible Business Conduct principles in the consumer electronics industry in general, and to improve cost-effectiveness through minimising e-waste in particular.

19-United Nations Educational, Scientific and Cultural Organisation (UNESCO)

Since 2008, UNESCO has been involved in several e-waste related initiatives, including the first volume of The Entrepreneur's Guide to Computer Recycling in 2008. The volume gives the basics for starting up a computer recycling business in emerging markets. In 2012, a Guide to Help Pacific Reporters Produce News Items on E-waste was developed by the Secretariat of the Pacific Regional Environment Programme with UNESCO support. This initiative was prepared through numerous discussions with Pacific news reporters in order to meet their needs, to benefit Pacific media as well as the wider community. In 2016, UNESCO collaborated with ITU and other UN entities to develop a report on the Sustainable Management of WEEE in Latin America. UNESCO offers expertise in creating conditions for dialogue among civilizations, cultures and peoples, based upon respect for commonly shared values.

20-UN Environment

UN Environment plays both a normative and operational role in tackling the various life-cycle stages of EEE, with the objective of applying this role at the global, regional and national levels. Through these approaches, UN Environment can link the UN system to national governments by providing advisory and technical assistance directly to the country level. UN Environment aims to soon publish a study 'The Long View - Exploring product lifetime extension', which provides recommendations on the opportunities available to consumers, the private sector and governments of both developed and developing economies, to address product lifetime extension, including EEE.

UN Environment offers expertise and knowledge related to life-cycle thinking and assessment, consumer information, sustainable lifestyles, value chain management, and eco-design and innovation regarding many products including EEE. This involves looking into the consumption patterns of EEE to reduce excessive consumption and investigating strategies on how to minimise waste generation from the beginning through eco-design and labelling, and eco-innovation.

In cooperation with partners, the UN Environment International Environmental Technology Centre (IETC) promotes technologies to manage waste in an environmentally sound way to minimise the significant adverse effects on human health and the environment. IETC can offer expertise on undertaking e-waste inventories, sound e-waste management and take-back systems, based on the e-waste guidelines which it has developed in the past. IETC is in a position to link across the system by providing support for downstream e-waste activities, including on the technological practices of solid waste management, notably final disposal.

During 2017, IETC aims to develop a study on 'E-waste Management in ASEAN Countries', with the objective to analyse the current trends, management and gaps for e-waste and to drive recommendations for an Association of Southeast



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Asian Nations (ASEAN)-wide strategy to improve e-waste management based on good practices, policies and technologies. Guidelines on the E-waste Management Technologies continue to be developed by IETC based on the available techniques and technologies for e-waste management including collection, storage, and primary and secondary dismantling for resource recovery and proper disposal of e-waste.

21-United Nations Industrial Development Organisation (UNIDO)

Since 2008, UNIDO, in line with its mandate to promote inclusive and sustainable industrial development, has been supporting developing and transition economies to sustainably manage e-waste. It does so by advising governments on legal frameworks and identifying financing options to sustain the recycling system, taking all stages of the e-waste recycling chain into account from collection to dismantling, recycling and final disposal. UNIDO has been undertaking initiatives at the regional level to establish solutions which involve local operators on e-waste management; the priority areas have covered Tanzania, Ethiopia, and Uganda to establish solutions which involve local operators.

UNIDO can provide expertise on the support provided to sustainable recycling industries in developing and transition economies. Its mandate on the greening of industry is fully aligned with Sustainable Development Goal 9 on building resilient infrastructure, promoting inclusive and sustainable industrialisation and fostering innovation. UNIDO is well placed to partner with governments, the business community and consumer associations, and to provide expertise to Member States in environmental management on the implementation of multilateral environmental agreements. UNIDO offers help in upscaling national e-waste management capacities with a focus on materials contaminated with persistent organic pollutants.

22-United Nations Institute for Training and Research (UNITAR)

UNITAR has been involved in a Minamata Initial Assessment (MIA) and National Action Plan Development on Sound Mercury Management relating to e-waste, with the overall objective to support Sierra Leone with the ratification and early implementation of the Minamata Convention. Under the MIA project, a national mercury profile is being developed. The profile will form the basis for future measures and policy interventions required by Sierra Leone to implement the convention. UNITAR also provides expertise in offering training and guidance, support for legislation and licensing procedures, and awareness creation around e-waste topics.

23-United Nations University (UNU)

UNU leads the Task Group on Measuring E-waste that develops guidelines on e-waste classification, reporting and indicators to assist the Partnership on Measuring ICT for Development. The Solving the E-waste Problem (Step) initiative is also coordinated by UNU. E-waste became a focus of UNU's work in 2000 as part of its activities on strategic approaches towards sustainable development. UNU has since conducted a range of e-waste projects including country studies on quantifying and qualifying the e-waste challenge in the Netherlands, France, Belgium, Italy and Romania; the first Global E-waste Monitor and Regional E-waste Monitor for Latin America and for East and Southeast Asia have also been produced. Furthermore, UNU provides e-waste academies for young scientists, managers and policy makers. Moreover, UNU provides advice to several governments and the European Commission in developing e-waste policies. There are four areas of expertise in which UNU e-waste initiatives are present, which include quantification, routes, flows and technologies, policy and dialogue and capacity building. In 2015, UNU approached UN Environment, ITU and UNIDO, suggesting the development of a UN-wide e-waste coordination body through a "UN-E-waste".

3. Supporting Member States

This sub-section addresses the views of survey respondents on the support which the UN system could provide to Member States in their efforts to tackle the global problem of e-waste. According to responses, suggestions have been assigned to nine topical areas.

Pay more attention to specific LIFE-CYCLE STAGES by…

"…addressing design and production (before-end), equally as much as addressing end-of-life treatment and final disposal (after-end); developing and setting up a coordination mechanism among entities and their partners to ensure that at least one UN entity takes ownership for each stage of the EEE life-cycle and appoints a lead entity to coordinate global efforts regarding that particular stage; and researching the health, environmental and socio-economic aspects arising throughout the life-cycle of EEE".

Develop PUBLIC-PRIVATE PARTNERSHIPS by…

"…enhancing collaboration with suppliers, manufacturers, distributors and treatment facilities within the work of the UN system; furthering engagement with the private sector and encouraging them to contribute resources (technical and financial) to support e-waste management at the national level through public-private partnerships".

Increase COMMUNICATION WITH CONSUMERS by…

"…establishing a platform with EEE manufacturers to provide consumers' feedback/advice on current and future practices; developing guidance on the marketing of the use of EEE to the consumer, and; overseeing the consumption pattern related to the use of EEE and generation of e-waste to help address the problem more efficiently".

Mobilise FUNDING RESOURCES by…

"…mobilising resources through existing environmental funding mechanisms such as the Global Environment Facility to support eligible developing economies in achieving the sound management of e-waste at national level".

Develop and improve NATIONAL LEGISLATION by…

"…promoting issues of e-waste management globally including facilitating the development of legislation at national levels; working with governments/ministries to push for sustainable end-of-life and final disposal policies (e.g. the extended producer responsibility principle of the EU Directive, take-back schemes etc.) and necessary infrastructure".

Strengthen STANDARDISATION AND COMPANY OBLIGATIONS by…

"…identifying trusted and certified companies worldwide, capable of performing environmentally sound management of e-waste; supporting the development of clean supply chains, which are auditable, measurable and traceable; providing support in the development of extended producer responsibility (in developed and developing economies); establishing uniformity across various existing guidelines and standards in the domain of EEE and e-waste".

Develop further TECHNICAL GUIDANCE by…

"…considering refurbishment and repair, risk prevention and minimisation, environmentally sound management, preparation of materials for reuse, recycling or disposal, record-keeping and measuring performance, and green procurement for public/private institutions; whilst ensuring that there is no duplication of the technical guidance already developed by entities such as the secretariat of the Basel Convention, its PACE and MPPI work streams and the ITU's technical specifications".

Increase QUANTIFICATION AND DATA work by…

"…identifying the severity and scale of the global e-waste problem by tracking the quantity of generated e-waste annually across a given space. This will help us understand where intervention is required along the life-cycle".

Coordinate and maintain KNOWLEDGE AND EVIDENCE by…

"…advocating priority at the international level for sustainable consumption and production patterns; pooling existing information on various UN and related entities who are addressing in one way or another each step of the EEE life cycle, and harmonising these key efforts".

4. E-waste Initiatives and their Characteristics

4.1 E-waste Initiatives by UN and Related Entities Overtime

Based on the mapping exercise, responses suggested that there has been a steady increase in the attention paid to e-waste by the UN system since 2004, with a short period of decline during 2010 and 2011. However, from 2012 to the present day, the number of e-waste initiatives has continued to grow with reasonable strength. Figure two below presents an overview of the 154 identified UN initiatives, divided across a period of 14 years from 2004-2017. Each date provided represents the date in which an e-waste initiative started.

As the findings are presented throughout this report, any presentation of the data includes initiatives which were either undertaken between 2004 and 2016 or forecasted for 2017, as indicated in figure two below. With this timescale embodied throughout the report, prior, existing and potential e-waste initiatives are thus included in the presentation of all findings. By including past and completed initiatives in this report, it can be ensured that notable and prominent practices and experiences undertaken by UN and related entities become part of this learning process with regards to the UN and e-waste.

4.2 The Number of E-waste Initiatives

Figure three on the following page shows the number of e-waste initiatives undertaken by UN and related entities. Those most active include UNU and the UNU-led Step initiative, the secretariat of the Basel Convention, ITU, and implementing entities comprising UNIDO, UNDP and UN Environment. DFS, FAO and UNICEF are left absent from this section due to their focus on internal corporate e-waste management rather than the provision of direct support to Member States on e-waste matters. The Global Environment Facility (GEF) has also been left absent, as it is involved in funding e-waste initiatives rather than in their direct implementation. Upon request of the secretariat of the Basel Convention, for the purpose of this report the PACE and MPPI initiatives have been distinguished from the secretariat's other e-waste activities.

Figure 2.

E-waste Initiatives Overtime

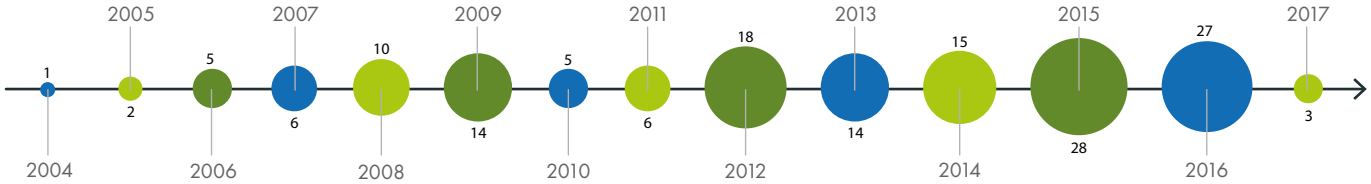
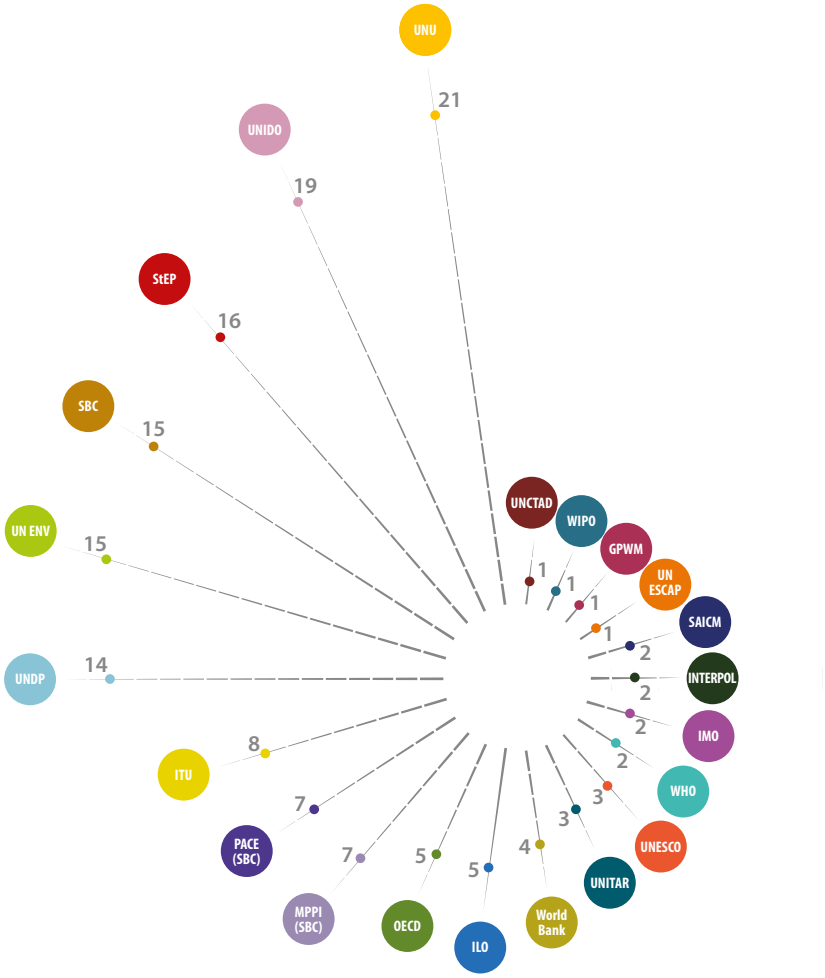


Figure 3.
Number of E-waste Initiatives



E-waste initiatives across the UN constitute an array of characteristics including various 'focus' and 'types'.

Focus

Predominately, initiatives 'focus' on addressing or directly tackling the environmentally sound management of e-waste such as the PACE Guidelines on Environmentally Sound Management of Used and End-of-life Computing Equipment. To date, only a small number of UN and related entities have been focussing on issues such as:

- Extended producer responsibility
- The materials used in electrical and electronic equipment (EEE)
- The design of EEE

Types

With regards to the 'types' of initiatives found across the UN system, the three most common types include the development of guidelines and manuals, country and regional projects or studies and reports; an example being 'Guidelines on E-waste Management Technologies' currently under development by IETC.

4.3 The Characteristics of E-waste Initiatives

To gain a better understanding of the involvement at different stages of the life-cycle, UN and related entities were asked to select the life-cycle stages of EEE which apply to their work in tackling e-waste. Results indicate that there is substantially more interest in the later stages of the life-cycle (see figures four and five), especially including end-of-life treatment such as recycling and the final disposal of e-waste. At the same time there is less attention paid to stages at the beginning of the life-cycle, such as those involving the acquisition of raw materials and product design, which occur before production. The mapping exercise also indicated that there is more activity in facilitating environmentally sound management techniques for e-waste (i.e. end-of-life treatment and final disposal). Whilst 63 initiatives have been identified that 'focus' on the recycling and environmentally sound management of e-waste, a significantly lower number of e-waste initiatives have been identified in the areas of statistical assessment, extended producer responsibility (EPR), and product materials and design.

The fact that there is much less 'focus' on issues like statistics, EPR, and design and materials, is perhaps a result of the nature of the UN system; its traditions and mandate encourage entities to tackle e-waste problems which have closer ties to poverty alleviation and development, rather than issues associated with design and production, and the business models of large manufacturers headquartered in advanced economies. Consequently, this may lead to resources being distributed towards developing local and national strategies, waste management systems and environmentally sound e-waste recycling technologies in developing economies.

By building on the previous observations, figure six on the following page provides an overview of the 'focus' of initiatives broken down by regions of the world and their frequency globally. The map highlights that initiatives by the UN, with the objective of facilitating the environmentally sound management of e-waste, are predominately undertaken in Asia and Africa.

Figure 4.
E-waste Initiatives by Life-cycle Stage

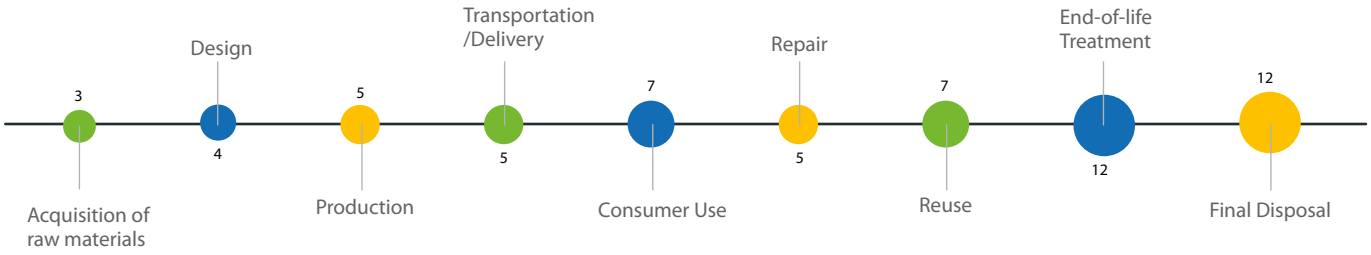
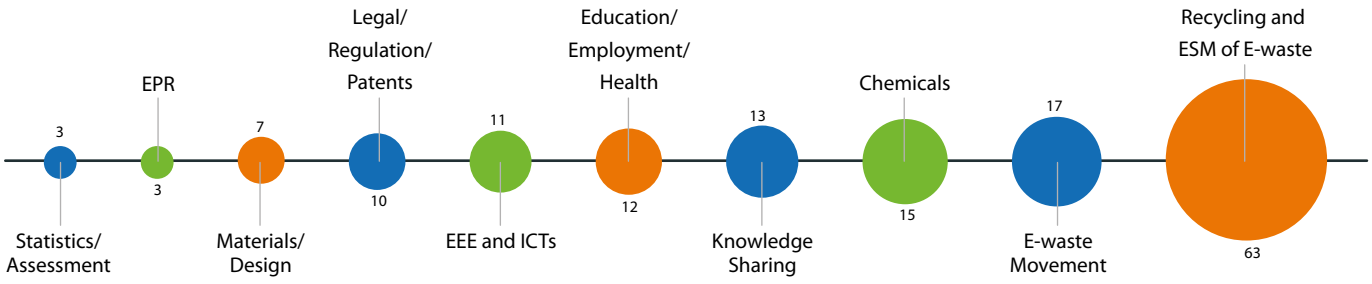
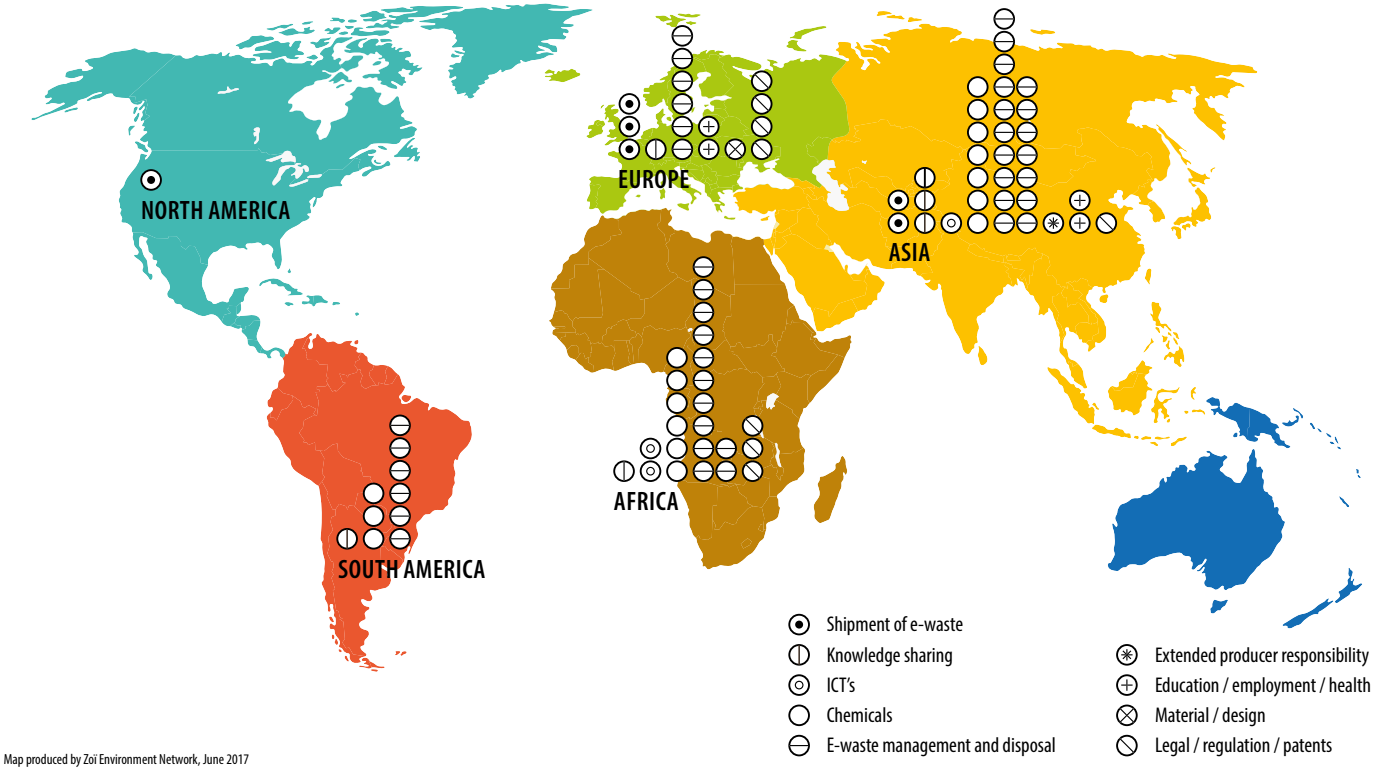


Figure 5.
Number and Focus of E-waste Initiatives



There is also significant attention towards environmentally sound management at the global level, through initiatives such as guidelines and manuals. Those with the aim of controlling and addressing the transboundary shipment of e-waste mostly occur at a global level, whilst many chemicals-focussed initiatives are carried out in African countries. Europe sees slightly more attention being paid towards upstream issues such as materials and design, but also legal, regulation and patenting matters. This might be a consequence of the design stage predominately taking place in advanced economies, whilst these countries are also more likely to have legislative and regulatory systems for e-waste already in place; for example, in Europe among others this includes the EU's Waste Electrical and Electronic Equipment Directive and the Restricting of Use of Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive.

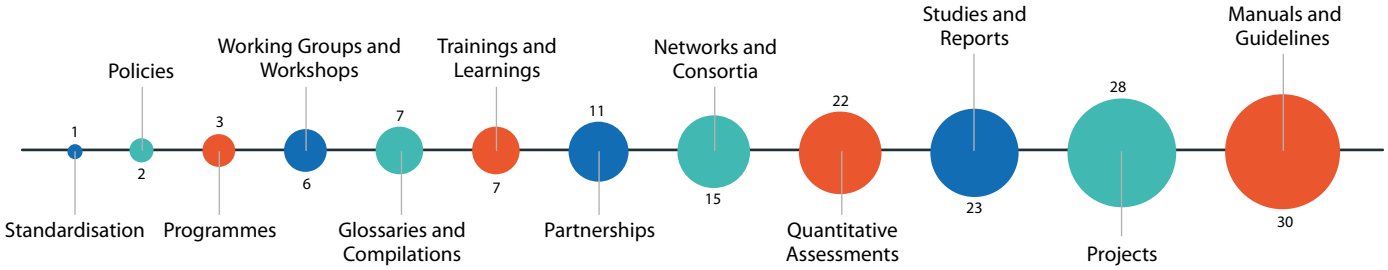
Figure 6.
The Focus of E-waste Initiatives Across Regions



Map produced by Zoï Environment Network, June 2017

Whilst the previous figures have highlighted the overall topics that UN initiatives focus on, such as legal and educational matters, knowledge sharing and problems like chemicals releases etc., figure seven overleaf indicates the number and 'types' of e-waste initiatives. These might refer to a normative set of guidelines or manuals on the environmentally sound management of e-waste, a workshop or training event on chemicals or a partnership developed specifically to share expertise around e-waste. The approach selected by UN and related entities to address particular e-waste issues is important because a certain issue might be addressed more effectively through one approach but less through another. For example, in-country educational and capacity-building workshops inviting members of the private sector and local entrepreneurs may be more effective at addressing local and national issues associated with extended producer responsibility, as opposed to developing normative manuals and guidelines for a global

Figure 7.
Number and Types of E-waste Initiatives



audience.

Initiatives leading to the publication of manuals and guidelines, country or regional project reports, and quantitative and national assessments of the domestic e-waste situation in a particular country are most common in the UN. On the other hand, those aimed at promoting standardisation for the design of EEE, and policies and programmes directly associated with addressing e-waste management at the national level are much less common. Marginally more attention is given to cooperative and interactive initiatives such as partnerships, working groups and workshops, training and learning, and networks and consortia. However, as workshops, training and research tend to be undertaken at the local level, their resource-intensive nature suggests that they are unlikely to be pursued as often.

4.4 UN System Support for Work on Tackling E-waste during each Life-cycle Stage

When asked to provide information on how the UN system could further support work on tackling e-waste at each life-cycle stage, survey respondents offered the following suggestions. These suggestions have been grouped into the key areas of the life-cycle of electrical and electronic equipment (EEE).

Address the ACQUSITION OF RAW MATERIALS by...

"…developing more detailed and technical guidelines in order to promote the recycling of discarded e-waste to regenerate certain materials which will reduce the need for the acquisition of raw materials; by identifying responsibly-sourced raw materials and backing this up with appropriate policies, and; by advising on the possible human health and environmental risks posed by raw materials used in EEE".

Address DESIGN by…

"…increasing product lifespan, eco-design (reducing the constant upgrade of devices) and eco-labelling", and; by enhancing collaboration among entities and the sharing of expertise in the development of standards for ICTs".

Address PRODUCTION by…

"…supporting the greening of the manufacturing industry by addressing the increased rate and quantity of produced EEE and the need to produce it in a responsible manner in light of diminishing resources; and, by reducing the use of hazardous materials during the production of EEE".

Address the TRANSPORTATION AND DELIVERY by…

"…encouraging governments to develop and support local EEE design and manufacturing, in order to reduce emissions from its global transportation and delivery".

Address CONSUMER USE by…

"...encouraging large companies and organisations, including the UN system, to develop internal policies which incentivise staff to better care for EEE, in order to increase its lifespan and purchase greener products, supporting good end-of-life treatment, and; by developing more national level policies across countries to en-

courage the responsible consumption of EEE".

Address REPAIR by…

"…influencing and supporting local governments to develop local repair businesses, for example through providing training and education, and tax breaks for local repair businesses, and; by building upon or maintaining previous work areas such as the Partnership for Action on Computing Equipment, which has paid particular attention to the repair of used and end-of-life computing equipment".

Address REUSE by…

"...encouraging manufacturers to phase-out the idea of planned obsolescence which is incorporated into the design of a large proportion of EEE; and build upon or maintain initiatives which host valued and important expertise on the topic of reuse".

Address END-OF-LIFE TREATMENT AND FINAL DISPOSAL by…

"…building upon or maintaining initiatives in developing and sharing technological practices for the environmentally sound management of solid waste; integrating e-waste management into national solid waste management infrastructure; and also building upon or maintaining the policies in place to protect the most vulnerable users from the effects of e-waste mismanagement, and; using the project-based potential of the three GEF implementing entities (UNIDO, UN Environment and UNDP) in tackling e-waste at this particular stage".

5. Geographical Distribution of UN and Related Entities' E-waste Initiatives

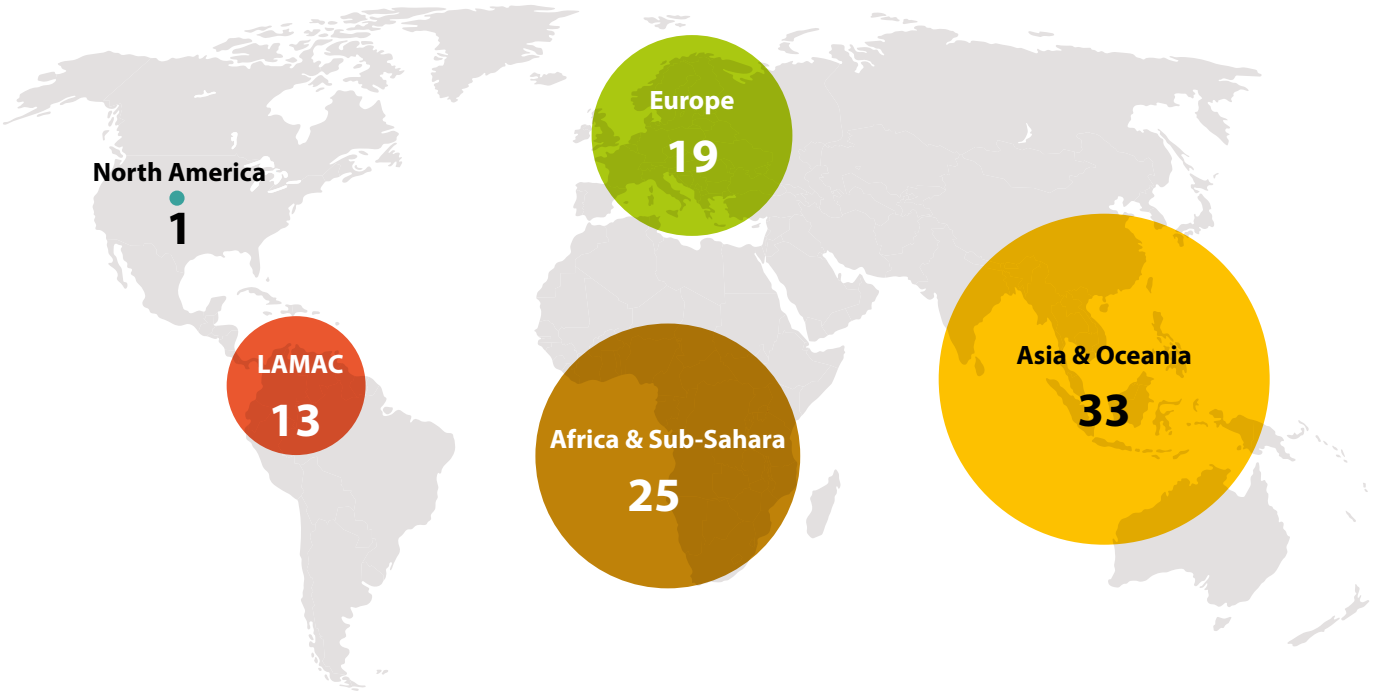
From a geographical perspective, it is possible to separate the e-waste-related work of UN and related entities, by region. Applying the categorisation of regions by the World Population Prospects (UNDESA), figure eight on the following page presents the distribution of specific country projects, studies, workshops and in-country partnerships, etc., carried out by entities whose aim is to improve the situation in those respective regions or countries within those regions. Worldwide, five regions have been categorised: North America, Latin America and the Caribbean (LAMAC), Europe, Africa (including Sub-Saharan Africa) and Asia (including Oceania). A category has been added below which includes global-reaching e-waste initiatives that often include normative international standards, guidelines and manuals, etc.

The African and Asian regions have received a substantial proportion of regional-focussed initiatives, which is likely to have been boosted significantly by e-waste initiatives such as the E-waste Africa Programme and projects in the Asia-Pacific region led by the secretariat of the Basel Convention. For example, between 2008 and 2012 the secretariat collaborated with a number of other implementing entities and partnerships including PACE and the Swiss Federal Laboratories for Materials Science and Technology (EMPA) etc., with the aim of enhancing environmental governance of e-waste and creating favourable social and economic conditions for partnerships and small businesses in the African recycling sector.

The Basel Convention secretariat's focus in the Asia-Pacific region originated from the Nairobi Declaration on the Environmentally Sound Management of Electrical and Electronic Waste, adopted at the eighth Conference of the Parties of the Basel Convention. As part of the mandate stemming from this declaration, the secretariat developed activities aimed at assisting parties to develop national inventories of e-waste; national e-waste management plans and formulate e-waste policies; regulatory frameworks and strategies for implementation; as well as develop pilot projects on collection and recycling of e-waste involving public-private partnerships.

Figure 8.

E-waste Initiatives by Region



* The number of e-waste initiatives with a global reach - 68

* TOTAL - 154 Initiatives

To date, countries in the Latin America and Caribbean region have received somewhat less attention by UN and related entities; at the same time, waste activities in Europe and North America have mostly been centred around either detailing the present situation for improving national policies and collection rates or controlling transboundary e-waste shipments leaving these regions. However, mapping and survey responses suggested that since 2014/2015, attention has been turning increasingly towards the e-waste problem in the Latin America and Caribbean region. One particular example is UNIDO's work on strengthening national initiatives and enhancing regional cooperation for the environmentally sound management of persistent organic pollutants. Other examples include a UNU/Step initiative e-waste academy for managers in El Salvador, in cooperation with the Basel Convention Regional Center for Central America and Mexico. The week-long Academy focussed on the sharing of insights on urban mining and the fostering of international collaboration.

Despite the global nature of these e-waste initiatives, there are specific characteristics relating to the regions which receive support and the specific UN and related entities providing this support in these regions. Figure nine overleaf highlights this, for example, showing that UNIDO has conducted significant work in Latin America and the Caribbean and Africa, whilst UNU has been heavily involved in providing backing for countries of the European Union, and the secretariat of the Basel Convention has given substantial support to countries in Africa and Asia.



Map produced by Zoï Environment Network, June 2017

Figure 9.

Country-specific E-waste Initiatives

Figure nine highlights a grouping of four main locations hosting the countries of particular and repeated focus by UN and related entities. These include: Eastern Europe, Western Africa, Southeast Asia and Latin America and the Caribbean. The entities represented in figure nine include those who have been, or are involved in e-waste initiatives in specific countries; whilst those undertaking initiatives either at a global or supranational level are not included.

There are several reasons possibly influencing why more attention is paid to particular locations. For example, Western and Eastern African countries receive significant attention in comparison to central Africa perhaps due to the arrival of shipped e-waste to port cities on either coast. Parts of the Asian continent may be receiving substantial attention as a result of a rapidly rising population, increased consumption of goods including EEE and general widespread economic development. Some Asian countries are also leading in the global production of EEE. Other potential reasons for more resources and support being allocated to e-waste management in specific countries or regions may be due to the conditions which international funding mechanisms, such as the Global Environment Facility (GEF), stipulate in order for Member States to receive project funding. GEF requires countries to have met the obligations of certain international environmental conventions and agreements, such as the Stockholm Convention on Protecting Human Health and the Environment from Persistent Organic Pollutants. In this case only those Member States in the first instance, with adequate resources and legal infrastructure to meet these required conditions, are likely to continue receiving support for projects in their country.

This chapter has given an overview of the approaches taken by UN and related entities to support Member States in tackling e-waste from a life-cycle perspective to date. The extent, focus, type and geographical distribution of work by these 23 entities has also been detailed. The following chapter moves on to present examples of existing collaboration in past and present e-waste initiatives, where UN and related entities have worked together to tackle e-waste issues, and highlights possible areas for streamlining further e-waste work.

CHAPTER 3

Collaboration and Partnerships



Tackling particular e-waste issues often requires the consideration of a wide range of perspectives, including interactions with labour, health, environment, logistics, management practices, regulations, chemicals, consumer preferences and cultures etc. Many informal e-waste dismantling and recycling practices are undertaken which expose workers and their surroundings to hazardous substances, whilst at the same time there are often limited environmental regulations at the national level relating to environmentally sound management practices for e-waste. In addition to this, many products contain hazardous substances which pose significant damage to the health of humans and the environment, when interacting with workers during crude and primitive e-waste processing practices. It is also anticipated that the global consumption of electrical and electronic equipment (EEE) will further increase, whilst no change in consumer preferences is envisaged thus reducing any possibility of a shift away from fast fashion consumption. In considering these perspectives when tackling e-waste, the strengthening of collaboration and partnerships among UN entities and other stakeholders, may be an important step forwards in addition to the sharing of knowledge, data and information, expertise and monetary resources.

This chapter takes a look at the strengthening of collaboration and partnerships among UN entities and other stakeholders. Section 3.1 focusses on some existing notable international collaboration and partnerships, whilst also providing an overview of the composition of these across the 154 identified e-waste initiatives. Section 3.2 looks specifically at responses to the survey on the potential for e-waste collaboration and streamlining of projects and programmes.



1. Collaboration and Partnerships

1.1 Existing Notable Collaboration and Partnerships

Across the UN system, several partnerships and cases of collaboration have been formed involving the UN and other public and private sector stakeholders. However, as some previous partnerships have come to a close, such as the Mobile Phone Partnership Initiative by the secretariat of the Basel Convention, in 2011, and its Partnership for Action on Computing Equipment in 2017, the UN system may look for new areas of collaboration around prominent topics on the e-waste agenda. The following list provides an overview of collaboration and partnerships across the UN system and other stakeholders. This information has been gathered based on the mapping exercise and responses by those who completed the survey; it includes prior and existing collaboration and partnerships.

1- Environmental Network for Optimizing Regulatory Compliance on Illegal Traffic (ENFORCE):

The mission of ENFORCE, is through a network of relevant experts, to promote parties' compliance with the provisions of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, pertaining to preventing and combating illegal traffic in hazardous wastes and other wastes through the better implementation and enforcement of national law.

2- Global E-waste Statistics Partnership:

In collaboration with UNU and the International Solid Waste Association, ITU have set up the Global E-waste Statistics Partnership. The main objective of this partnership is to build capacity to help countries produce reliable and comparable e-waste statistics, to collect data from countries and build a global e-waste database to track developments over time and by doing this, inform policy makers and industry.

3- Global Partnership on Waste Management (GPWM):

E-waste management is a focal area of the GPWM, originally coordinated by UNIDO and currently led by ITU. The e-waste focal area attempts to mainstream and disseminate environmentally sound management of e-waste in developing economies. The work plan on e-waste proposes to develop sustainable business plans which will include an effective take-back system, a manual dismantling facility, local pre-processing and sound end-processing activities. These plans will be undertaken in close cooperation with other partners working in this field.

4- Mobile Phone Partnership Initiative (MPPI):

The MPPI was formally established at the sixth conference of the parties to the Basel Convention, in Geneva in 2002. The overall objectives of MPPI was to achieve better product stewardship, to make consumer behaviour more environmentally friendly, to promote the best reuse, refurbishing, material recovery, recycling and disposal options and to mobilise political and institutional support for environmentally sound management. The main achievements of the partnership include the completion of five guidelines on: the refurbishment of used mobile

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phones, the recovery and recycling of end-of-life mobile phones, raising awareness on design considerations of mobile phones, the collection of used and end-of-life mobile phones, and the transboundary movement of collected mobile phones. The final MPPI guidance document was adopted in its entirety by the 10th conference of the parties to the Basel Convention, in Colombia in 2011.

5- Partnership for Action on Computing Equipment (PACE):

Launched at the ninth meeting of the conference of the parties to the Basel Convention (decision IX/9), in Bali 2008, PACE is a multi-stakeholder partnership established to address the environmentally sound management of used and end-of-life computing equipment. The partnership aims to promote sustainable development through efforts to repair, refurbish and reuse computing equipment worldwide, and to find incentives and methods to divert end-of-life personal computers from land disposal and burning into environmentally sound commercial material recovery and recycling operations. PACE also aims to develop technical guidelines for proper repair, refurbishment and material recovery and recycling, the transboundary movement of used and end-of-life computing equipment, and to end the shipment of used and end-of-life computing equipment to countries. PACE completed its mandate in May 2017.

6- Partnership on Measuring ICT for Development:

The Partnership on Measuring ICT for Development is an international, multi-stakeholder partnership launched in 2004 to improve the availability and quality of ICT data and indicators, particularly in developing economies. Through its work, it helps policymakers produce statistics that are crucial to informed decision-making. It hosts the following international members: ITU, OECD, UNCTAD, UNDESA, UNESCO Institute for Statistics, UN Environment, the secretariat of the Basel Convention, UNU, World Bank; and at the regional level: ECA, ECLAC, ESCAP, ESCWA, Eurostat. The group on e-waste is coordinated by UNU.

7- Solving the E-waste Problem (Step):

Initiated in 2004 and formally launched at the UN secretariat in New York in 2007, Step is an international initiative created to develop solutions to address issues associated with e-waste from an applied, but science-based point of view. It acts as a multi-stakeholder platform with members including UN entities, manufacturers, dismantlers, recyclers, academia, NGOs and governments. Several tools have been produced by Step which include business plan calculation tools; guiding principles; white and green papers, e-waste academies, webinars, and an online global e-waste world map which provides an overview of existing legislation and policies.

8- Strategic Approach to International Chemicals Management (SAICM):

Adopted in 2006 by the International Conference on Chemicals Management (ICCM), in Dubai, SAICM is a policy framework to foster the sound management of chemicals, including those used in the production of EEE. SAICM was developed by a multi-stakeholder and multi-sectoral preparatory committee and supports the achievement of the goal agreed at the 2002 Johannesburg World Summit on Sustainable Development to ensure that, by the year 2020, chemicals are produced and used in ways that minimise significant adverse impacts on the environment and human health. SAICM also constitutes the Dubai Declaration on International Chemicals Management.

SAICM has produced a Compilation of Best Practices on Hazardous Substances within the Life-cycle of Electrical and Electronic Products (HSLEEP). In its resolution III/2 on emerging policy issues, the second International Conference on Chemicals Management (ICCM2) called for a number of actions related to hazardous substances within the life cycle of electrical and electronic products. The SAICM secretariat continues to coordinate work on HSLEEP, to increase awareness on the need to address hazardous substances in electronics through participation and the sharing of knowledge at regional and international forums.

9- United for Smart Sustainable Cities (U4SSC):

The United for Smart Sustainable Cities (U4SSC) was launched in response to Sustainable Development Goal 11: "Make cities and human settlements inclusive, safe, resilient and sustainable". This collaboration is supported by 17 other United Nations entities. The U4SSC will primarily advocate for public policies to encourage the use of ICTs to facilitate and ease the transition to smart sustainable cities. Within the framework of its smart city agenda, this collaboration also explores the potential of balancing ICT integration into urban services with the management of e-waste in smart sustainable cities.

10- United Nations Industrial Development Organisation :

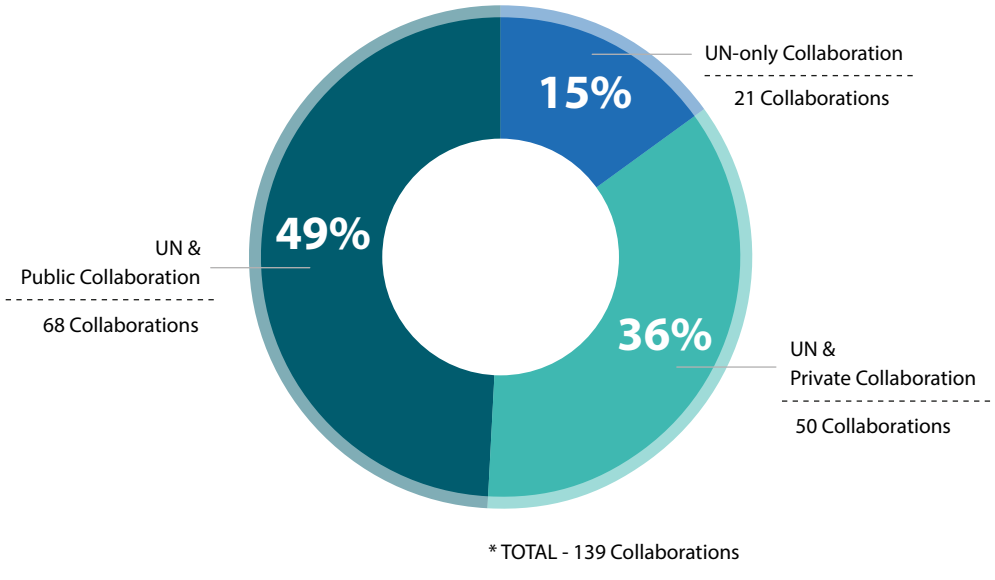
UNIDO has formed public-private partnerships with several entities from the private sector, including Microsoft (since 2006), Samsung (since 2012) and Dell (since 2014). The aim of these partnerships is to pool expertise together to promote the innovative use of ICT that fosters entrepreneurship in African SMEs, to design and implement effective e-waste management and electronics employment opportunities in Cambodia, and to create awareness, build capacity and engage in knowledge sharing and policy advocacy with regards to sustainable e-waste management.

1.2 Composition of Existing Collaboration on tackling E-waste

Figure 10 below indicates that a total of 139 e-waste initiatives are understood to have involved collaboration with one or more entities. The majority, 49%, of e-waste initiatives by UN and related entities have involved work alongside external stakeholders from the public sector, whilst 36% of initiatives have involved private sector involvement. For the purpose of this report, the public sector is defined as comprising entities which are neither part of the UN nor driven by profit or involved in business activities, such as: NGOs, academia and government ministries. Collaboration comprising private sector entities includes: Solving the E-waste Problem (Step), UNIDO's public-private partnerships, and the PACE and MPPI work streams administered by the secretariat of the Basel Convention.

Figure 10.

Characteristics of existing collaboration in e-waste



There are significantly fewer e-waste initiatives which comprise collaboration and partnership among UN entities only, in total amounting to 15%. This suggests that there could be more collaboration within the UN system to share knowledge and expertise during projects, and to form joint programmes to tackle e-waste. One particular example of collaboration within the UN system is a global survey, undertaken in 2013 through cooperation between WHO and UNU on the impact of e-waste on children. Not highlighted in figure 10, from the 139 identified initiatives that host some form of collaboration, there are roughly 30% comprising UN entities, and the public and private sectors all working alongside each other at the same time. These initiatives often fall under more established programmes of work or partnerships, such as Step.

It is not clear what the reasons are regarding the unexploited potential for more UN system-wide collaboration. However, a greater involvement of the public and private sectors in comparison to UN entity collaboration, may be linked to the propensity for the UN to outsource its tasks and specialised roles to external consultants, thus challenging the complete ownership of its e-waste projects and programmes.

Although substantial public and private sector involvement is essential to bring in new knowledge and expertise, the different entities active in e-waste across the UN could likewise benefit from increased collaboration within. Consequently, entities may be more likely to capture the mutual benefits of fellow entities' skills and expertise in specific dimensions relating to e-waste.

2. Opportunities for Collaboration

This section provides suggestions for the collaboration and streamlining of e-waste projects and programmes, based on proposals put forward by survey respondents. Three main areas of opportunity have been highlighted:

- Strengthening the sharing of data, knowledge and expertise (2.1)
- Using existing frameworks to address e-waste at the country level (2.2)
- Establishing e-waste working groups and inter-agency collaboration (2.3)

2.1 Strengthening the Sharing of Data, Knowledge and Expertise

The presence of silos within the UN has been noted by survey respondents, who have expressed that the sharing of knowledge and expertise among entities, may contribute to reducing some of these silos. Either through an entirely new online platform or clearinghouse for knowledge sharing or via an existing mechanism, there may be the opportunity to store and keep up-to-date information on e-waste projects, experiences and reports etc., and data and information on country e-waste infrastructure and statistics relating to e-waste and electrical and electronic equipment. Existing platforms which provide knowledge sharing services include:

- Solving the e-waste problem (Step) e-waste world map

- ITU Global E-waste Portal
- Global Partnership on Waste Management Knowledge Platform
- Inter-Organization Programme for the Sound Management of Chemicals Toolbox for Decision Making

According to survey respondents, it may also be valuable to expand the sharing of knowledge and expertise among UN entities, to related entities such as regional and international enforcement bodies. These external stakeholders may benefit from UN expertise in the domain of statistics and related information concerning the transportation, collection and disposal of e-waste, and electrical and electronic equipment. For example, this may support the analysis of industry profits and financial exchanges, by the law enforcement community and may prove to be very helpful for combatting illegal e-waste trade. However, more work is required in these areas and expanding the sharing of data, knowledge and expertise beyond the UN system may be challenging.

2.2 Using Existing Frameworks to Address E-waste at the Country Level

UN entities could enhance collaboration at the country level, through building and supporting the capacity of countries, especially in the global south. Some key areas highlighted by respondents point towards strengthening e-waste management capabilities through research and training, and supporting the improvement of institutional and regulatory regimes. At the same time, many developing economies still require support and assistance in the implementation of multilateral environmental agreements, such as the Basel, Rotterdam and Stockholm Conventions and the Minamata Convention; for example, through piloting environmentally sound and innovative ways to collect and manage their e-waste.

Opportunities may exist for UN entities to provide support methods for e-waste management through the United Nations Development Assistance Framework (UNDAF). The role of this framework is to describe the UN's response to a certain issue – in this case e-waste – and to provide this description to support national development priorities. UNDAFs can present a coherent vision and collective programme results for the country involved, regarding the particular support which the UN system seeks to achieve in that country. For example, in Ghana, based on the UN Country Team's localised approach to "Delivering as One", the 2012-2016 UNDAF for Ghana concentrated on four strategic areas: food security and nutrition; sustainable environment, energy and human settlements; human development and productive capacity for improved social service; and, transparent and accountable governance. By bringing together core UN entities with experience in tackling e-waste, into the UNDAF process, any vision for support for national development priorities concerning waste management and e-waste, is likely to be much more inclusive and informed.

2.3 Establishing E-waste Working Groups and Inter-agency Collaboration

E-waste working groups

As mentioned throughout this report e-waste poses a set of highly diverse challenges that can be approached from a number of different perspectives. With this varied nature in mind, it may warrant the dissemination of these challenges into the key dimensions of e-waste of which there are many; for example, design and production, chemicals, labour and health, transportation, and recycling and treatment technologies etc. There may be an opportunity to disseminate these dimensions across UN entities' mandates. In this regard, survey respondents suggested that a series of working groups could be established, which comprise several UN entities mandated to focus on a specific dimension of e-waste collectively. It has further been suggested that each working group could be led by a UN entity whose mandate is best aligned with the topic and objective of that particular group. Via each working group, it is envisaged that the sharing of data, knowledge and expertise under the overall guidance and coordination of the lead entity could be possible.

Further collaboration

In 2005, the United Nations General Assembly invited the Secretary-General to launch work to further strengthen the management and coordination of UN operational activities. One of the key recommendations as a response to this, was that the UN system should "Delivering as One" at country level with one leader, one programme and one budget. In the interest of enhancing system-wide collaboration and streamlining initiatives, there may be scope for organising the UN system's work on e-waste by utilising this framework.

Survey respondents highlighted the potential for a UN inter-agency coordination mechanism for e-waste. This UN inter-agency mechanism could be linked to the United Nations High-Level Committee on Programmes (HLCP) with the purpose of fostering greater cooperation and information sharing among UN entities, including external stakeholders, involved in e-waste work at any stage of the life-cycle. Similar to the concept of working groups headed by a UN entity active in e-waste, this particular inter-agency mechanism could include several work streams, including on policy and legislation, on-the-ground implementation, standardisation, and research and capacity building, each with an assigned lead entity. Other related suggestions propose having an umbrella entity to administer the consolidation of UN entities' e-waste work.



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On her way to school a girl passes a truck laden with computer hardware. Every year Guiyu takes in more than a million tons of computer waste, imported from all over the world.
China, Guiyu, Guangdong Province

CHAPTER 4

Analysis and Conclusion



1. Analysis



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The UN system has the potential to engage Member States through various avenues of support. For example, Member States could be provided with support for strategies on incentivizing more inclusive and socially sustainable business models to place more responsibility in the hands of manufacturers of electrical and electronic equipment (EEE). Chiefly, this might include the provision of support for small and medium enterprises who endeavor to develop reuse, repair and refurbishment activities and EEE manufacturers who wish to incorporate take-back schemes into their business activities.

In addition to supporting new business models for reuse, repair and refurbishment, the UN system might consider supporting Member States and ministries at supranational level such as the EU, in tracking and containing the movement of precious rare-earth metals used in EEE. The development of reuse, repair and refurbishment services could provide an opportunity for containing these movements, by reengineering these metals into new products. Similarly, UN system support could seek to build on the existing understanding of industry around the links between e-waste and natural resource exploitation. In addressing this link, industry is currently focussed on the environmentally sound management of e-waste to recapture precious resources; upon this, support could be expanded to increase efforts in advocating a shift from raw material mining towards urban mining practices through methods such as repair and refurbishment.

A stronger emphasis on the design phase of EEE would require stronger collaboration by the UN with the private sector and offer stronger opportunities for UN-private sector partnerships. However, closer collaboration between UN entities and industry actors is at times challenged by legal interpretations regarding the extent to which UN entities can engage in externally and privately-funded projects. Considering a change to this, each entity might seek to address clarity on when, how and to what scale they engage the private sector. In addition, despite these perceived legal conditions the successful implementation of the integrated Sustainable Development Goals requires a more up-scale approach; for example, looking more closely at the supply of EEE and its reverse supply chain. This would imply that UN entities could position themselves more tightly within EEE and e-waste supply chain issues; putting more emphasis on increasing e-waste collection rates in developed economies in the EU, North America, Japan and Australia as well as on the design and reuse of EEE; and, on supply chain issues arising in mid to long-term transitioning economies.

The UN may have a role to play in informing Member States about relevant e-waste issues by means of expanding their national data collection and information sharing, for example on national e-waste flows and characteristics; and also compiling and sharing good and bad e-waste management practices. At the same time, Member States are likely to benefit from the continued showcasing of successful e-waste management-related business practices by manufacturers and industry. As it stands, the UN system is well positioned to support the precise measurement of quantities, flows and impacts of e-waste at the individual country level, which will likely improve those countries' knowledge of their own e-waste situation and lay the ground for appropriate domestic-led countermeasures. In particular through this type of support, a key component in tackling the e-waste problem, which includes strengthening

national waste and e-waste regulations and establishing e-waste management systems at the national level, could be made possible. Moreover, focussing resources on improving existing solid waste management systems is important, as in some cases these systems exist but only comprise primitive strategies and only consider basic household waste streams. E-waste from both domestic and commercial sources is often neglected.

Despite the multitude of activities that UN entities are engaged in to address the e-waste challenge, analysis points towards a considerable potential for improvement. Through a more coordinated and synergised approach, competency within the UN system could be maximised, whilst entities would jointly work towards sustainable solutions in a harmonised way. Mapping results have illustrated that the e-waste work across the UN system is not only limited to entities focusing on environment and waste-related issues, but also includes factors such as labour, human health and cities etc. Consequently, by looking at e-waste from a life-cycle perspective, the scope of actors involved is considerably enlarged, and the multitude of approaches needed to contribute to sustainable solutions becomes evident. Many of the points raised throughout this report on collaboration and streamlining efforts may act as key entry points in building a more synergised UN system.

Considering more systematic, long-run changes to the UN system may also be necessary in order to maintain a long-lasting support mechanism for Member States. Dedicated funding schemes and an overall strategy to address the e-waste problem in a holistic way, taking into consideration all the phases of the life-cycle of EEE, is currently missing. Most UN initiatives in the area of e-waste have so far been entirely externally funded by project-sponsoring industry and governments, bilateral development cooperation and the European Commission. The only remaining significant funder of e-waste-related projects from within the UN is the Global Environment Facility (GEF). With no specific replenishment phase having yet been developed for the direct attention of e-waste by the GEF, all recent e-waste related initiatives backed by this funding have been motivated by other topics, such as chemicals and waste, and persistent organic pollutant projects.

Harboring an international system which either externally sources its funding for e-waste projects or acquires resources through the periphery of other project-specific motivations, may overtime reduce the capacity of the UN to take full ownership over the required expertise and knowledge. However, the current discussions underway on the topic of potentially focusing the next GEF replenishment on e-waste, act as an important step towards ensuring the longevity of UN e-waste initiatives. Whilst the general financing of e-waste work is important in itself, such schemes like GEF with the inclusion of requirements attached to multilateral agreements, also help to harmonize action and make efficient use of available resources and expertise. Tying the necessity for more collaboration around e-waste issues and the need for dedicated funding within the current discussions on the next GEF replenishment phase, will no doubt be of significant value.

2. Conclusion

United Nations entities have addressed e-waste related issues in a number of different ways since 2004. To date more than 20 UN and related entities are active in this domain, having been involved in more than 150 initiatives globally. The scope covered by these initiatives is wide, stretching from policy development, statistical work and training to the out-designing of hazardous elements from products. From a regional perspective, the majority of e-waste initiatives is undertaken with a focus on the African and Asian regions; whilst there is less focus on Europe and very little in North America, Australia and New Zealand. Since 2014, the Latin American and Caribbean regions have received increasingly more development assistance in the area of e-waste. The Asian and African regions receive substantially more focus as a result of the curative nature of many present approaches to e-waste management. The current focus of UN e-waste initiatives predominately addresses primitive and often crude recycling practices, which are not environmentally sound due to the negative externalities arising from emissions entering the ground, water and air, and the waste of resources and damage to workers' health.

The majority of e-waste initiatives (49%) are carried out through UN-public sector collaboration, whilst e-waste initiatives undertaken through UN-private sector collaboration account for 36% of initiatives. The results of the mapping exercise and survey, suggested a need to engage more with the private sector and to address business responsibility in the production of electrical and electronic equipment (EEE). When observing the entire life-cycle of EEE from design and production to final disposal, it is evident that the majority of initiatives which aim to tackle e-waste focus on end-of-life treatment through the recycling and final disposal stages. Indeed, less attention is given to the acquisition of raw materials, design and production, and the repair, reuse and refurbishment of EEE. This is not due to a lack of interest in these life-cycle phases, but could be traced to the complex stakeholder structure and business interests surrounding the e-waste arena; and the lack of acceptance on life-cycle thinking by certain stakeholder sectors.

There is a need to address the full life-cycle of EEE, including related issues such as product life-span and consumer use, and encouraging government and EEE manufacturers to engage in extended producer responsibility (EPR) legislation. The need remains to emphasize the necessity for EPR schemes to be backed by national legislation and punitive measures, whilst overcoming the challenge of finding incentives and economically attractive business models.

These are equally important areas as both the fashion cycle and life-span of many products containing electrical and electronic components are likely shortening. A significant proportion of responsibility lies with EEE manufacturers in extending the life-cycle of the products they sell, and in addition to this, extending their business responsibility beyond the end of use by consumers. At the same time, opting for the newest technologies and most recent fashion at the lowest possible price remains entrenched within the behaviour of many consumers, impacting the reparability of many products and therefore also contributing to an ever increasing e-waste mountain.

CHAPTER 5

Key Findings and Recommendations





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1. The Life-cycle Principle

Throughout this report, the importance of considering the full life-cycle of electrical and electronic equipment (EEE) in the e-waste initiatives of UN and related entities has been highlighted. The underlying principle stemming from this analysis refers to the need for the UN system to increase its efforts, where possible, in paying more attention to the early stages of the life-cycle such as design and production whilst at the same time ensuring that all stages are considered from design, to use, to final disposal. The principle of focussing on life-cycle thinking should be considered in any follow-up of this report and any subsequent mechanisms, platforms, collaboration and internal e-waste management guidance established as a result. Without equally dividing its efforts across the life-cycle stages, the UN will likely continue to address results at the end of life and use of EEE – which are often – the outcome of design issues present early on in the life-cycle.

2. E-Waste in Developed and Developing Economies

The majority of initiatives undertaken by UN and relates entities to tackle e-waste focus on relieving the problem in developing economies. Consequently, this report suggests that there is little emphasis on increasing e-waste collection rates in developed economies in the EU, North America, Japan, Australia and New Zealand as well as little attention to the design and preparedness for reuse of EEE designed and marketed in these countries.

The majority of e-waste arises in developed economies before it is transported across borders and ultimately leads to health and environmental issues in the developing world. Continuing to relieve the e-waste problem in developing economies is especially important; however, it has been highlighted in this report that a need also exists for the UN to increase its effectiveness in four key areas relating to e-waste arisings in developed and transitioning economies:

- Support for law enforcement and customs authorities to address the transboundary movement of used and end-of-life EEE entering developing economies;
- Establishing policies to remove the hazardous components used in EEE;
- Enhancing national consumer awareness around the damaging effects of their e-devices;
- Enforcing policies on extended producer responsibility (EPR) for manufacturers in developed economies.

The inclusivity of the 2030 Agenda and the fact that the Sustainable Development Goals apply to all countries, provides us with an agenda that encourages us to address international development issues in an inclusive manner; from where the problem arises, whether or not it is a developed or developing country. At the international and regional level, several entities and associated guidelines already focus substantially on the four key areas above. These include enforcement entities such as INTERPOL, EUROPOL and IMPEL, the various technical guidelines developed under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, the Strategic Approach to International Chemicals Management, including on hazardous components, and the UN Environment-led 10 Year Framework of Programme's Global Action for Sustainable Consumption and Production on consumer information and sustainable lifestyles.

3. Increasing Collaboration with the Private Sector

Through collaboration with entities from the private sector and national government, the UN system could capitalise on its access to international expertise and share this with these entities. The UN system already works closely with the private sector in a number of areas to address various aspects of the global e-waste problem. However, the UN could:

- Investigate whether there is further need to address private sector involvement in reducing waste arisings from used and end-of-life EEE, by focussing on product standards and the design stage of this equipment.

By further enhancing its involvement with the private sector, the UN system could consider:

- A plan designed to engage national governments, alongside the private sector in supporting or developing national extended producer responsibility legislation.

And alongside EEE manufacturers, UN entities may consider:

- Conducting more detailed research into the opportunities and challenges of national EPR implementation.

4. Increasing Collaboration and Coordination Among UN Entities

This report finds that there is a need for increased collaboration among UN entities in tackling e-waste, as currently the majority of partnerships and collaboration involve external stakeholders, with little consolidation and sharing of knowledge and expertise within the UN system.

Despite the multitude of activities which the UN is engaged in to address the e-waste challenge, analysis points towards a considerable potential for improvement. Through more collaboration and an agreed work plan, greater competency within the UN system could be achieved, whilst entities could jointly work towards sustainable solutions. In following up on this synthesis report with the purpose of increasing collaboration among UN entities towards a joint work plan on e-waste, a series of suggestions are proposed in brief below.

4.1 Undertaking a Gap Analysis with Support of a Lead Entity or Entities:

I. In building on the mapping exercise of this report which clearly identifies the characteristics of UN e-waste activities, an opportunity exists to further understand the programmatic/mandate aspects of e-waste; for example, through developing a matrix using the life-cycle stages of electrical and electronic equipment to identify gaps between the programme of work on e-waste which entities have and the resources and support they need.

II. It is recommended that this analysis conducted into each entities' e-waste mandate identifies how the life-cycle stages of electrical and electronic equipment are addressed by the respective entities. The provision of such an exercise would give more insight into the formulation of concrete goals, leading to the establishment of a joint work plan on e-waste and associated entry points for proposed collaboration among UN entities.

4.2 Establishing a Joint Work Plan with Support of a Lead Entity or Entities:

III. The aim of the gap analysis is to identify concrete goals for increasing the collaboration and coordination of UN entities' initiatives to tackle e-waste, upon which it is recommended that a joint work plan on e-waste be developed. This work plan would highlight how to reach these goals, with the aim of being distributed to donors in order to accrue funds for related work outlined in the joint work plan.

IV. These goals may pertain to meeting defined e-waste targets at the national level, meeting

requirements across each stage of the life-cycle or on specific issues relating to e-waste such as support for EPR legislation, undertaking a number of e-waste statistical studies and country inventories or carrying out activities relating to product design and standardisation etc.

V. It is recommended that a key component of the joint work plan involves the nomination of a lead entity, or entities. Those that are nominated as a lead would oversee the development and implementation of the joint work plan, providing their support and relinquishing their knowledge and expertise relating to and in achievement of the respective goals of the approved work plan. One particular component of the joint work plan may relate to increasing support, resources and efforts to address design, standardisation and the development of EPR schemes for manufacturers. Based on the findings of this report, it is highlighted that these areas are of key importance. The mandate of the lead entity or entities overseeing the development and implementation of this particular component, would be best fitted to these areas concerning e-waste.

VI. As part of the joint work plan, it is recommended that all UN and related entities are invited to provide their inputs into the development of the plan and to support the implementation of its various components. These components may include issues highlighted throughout this report, including the reuse and refurbishment and recycling of electrical and electronic equipment, workers' health and the control of illegal shipments etc.

VII. Annual or biannual neutral monitoring of the progress of the joint work plan towards its goals could be reported to the Environment Management Group in connection with its midterm and annual Senior Officials' Meetings.

4.3 Increasing Coordination and Sharing Information:

VIII. The opportunity may exist to further improve the coordination of UN entities. Coordinating the work of each UN entity through an inter-agency mechanism is recommended, which may build on the work plan developed and overseen by the initially nominated lead entity or entities.

IX. In addition to a need for more coordination, this report has identified the need for sharing data, knowledge and expertise among UN entities in order to reduce the duplication of their efforts in tackling e-waste. As part of the efforts to increase coordination, it is recommended that a central platform or database be developed with the facility to store information on initiatives undertaken to tackle e-waste, and relevant national level statistical information.

X. In aiding the implementation of the goals outlined in the joint work plan on e-waste, such a platform may facilitate the sharing of lessons learnt and best practices to support the implementation of e-waste related work; and ensure easier access to guidance, proposals and information on previous and upcoming e-waste projects and programmes.

4.4 Supporting UN Internal E-waste Management:

XI. In follow-up of the Issue Management Group (IMG) on Tackling E-waste, an opportunity exists to liaise with the Sustainable UN (SUN)-led IMG on Environmental Sustainability Management in the UN system and to consider its work on a UN internal approach to consumption and final disposal of EEE.

XII. It is recommended that the attention to internal e-waste management work by the IMG on Tackling E-waste in liaison with SUN, focuses initially on transferring overall expertise between the two IMGs. There remains a need to support guidance on e-waste management being developed by SUN, and for the creation of guidance on procurement of EEE based on an understanding of what the UN purchases, how this is used and where it can be disposed of.

ANNEX 1
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The Environment Management Group (EMG) is a United Nations System-wide coordination body. It furthers interagency cooperation in support of the implementation of the international environmental and human settlement agenda. Its membership consists of specialized agencies, programmes and organs of the United Nations, including the secretariat of the Multilateral Environment Agreements.

EMG is chaired by the Executive Director of the UN Environment (UNEP) and supported by a secretariat provided by UN Environment.

For more information on the EMG and the Issue Management Group on Tackling E-waste, please visit www.unemg.org

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