Basel Convention Regional Centre for Training and Technology Transfer for the Caribbean Region

Assessment of Waste Electrical and Electronic Equipment for the Republic of Suriname

Final Project Report
Revised June 2016.

EXECUTIVE SUMMARY

This report documents the outcomes of an assessment executed by the Basel Convention Regional Centre for Training and Technology Transfer for the Caribbean (BCRC-Caribbean) on the waste electrical and electronic equipment (WEEE) waste stream in the Republic of Suriname. This study attempted to identify the local stakeholders involved in WEEE generation and management, the relationships between these stakeholders and the contribution that these stakeholders make to the overall e-waste generation and management in Suriname. It also sought to highlight current management practices to deal with WEEE as well as the extent of stakeholder knowledge and data management with regards to this waste stream within the local context.

The study was a continuation of the BCRC-Caribbean's WEEE assessments following similar work conducted in Trinidad and Tobago. The present assessment sought to work within the broad scope of WEEE items categorised under the original European Union WEEE Framework Directive (2002/96/EC), which characterised the waste stream and its precursor electrical and electronic equipment (EEE).

At present, WEEE generated in Suriname is largely mismanaged as a result of a non-harmonised system to handle these wastes and the lack of facilities to adequately treat such wastes. This scenario has led to a large and increasingly complex hazardous waste stream in Suriname being indiscriminately disposed of in the country's landfills and public spaces, and adding significantly to the issue of air, water and land pollution by POPs and other contaminants nationwide. Furthermore, the situation has led to the wastage of resources that have the potential to be recycled, recovered and re-used.

In the execution of this assessment, import and export data for EEE were analysed and interviews were conducted with distributors and consumers of EEE, waste collectors, and recyclers of WEEE, and the respective agencies involved. The data collected was analysed, summarised and assessed in order to examine the flows and management of these pieces of equipment. It was found that gaps in knowledge and practices exist across different sectors and that there are significant weaknesses in this respect as it relates to EEE consumption and WEEE generation.

The collection of WEEE is being done primarily on an as-needed basis or to facilitate the sale of metal components for revenue by private individuals and organisations. However, such collection is not necessarily being done with the end point of the environmentally sound management of the waste stream being taken into consideration. Furthermore, the existing practices for salvaging metals of value to local dealers and others operating in the country do not necessarily amount to the wise re-use or recovery of these resources within the local system. Therefore, there is a need to ensure that more sustainable collection efforts as well as the sensitisation of the WEEE issue and the development of ESM practices among local stakeholders, including in the area of collection and storage, are fostered.

Based on the findings of this assessment, the BCRC-Caribbean developed a series of recommendations which, if addressed, can significantly aid in the achievement of the environmentally sound management of WEEE in Suriname. Some of these recommendations, presented in order of priority, include the following:

1. The establishment of a national WEEE management coordinating body comprising of membership from the various stakeholder groups with roles throughout the life cycle management of EEE.
2. Roll-out of a well-developed awareness and public education campaign. The campaign can initially target key stakeholders involved in the life cycle management of EEE and WEEE followed by a broader public awareness campaign.
3. The development of appropriate regulations and standards either stand alone or under any enacted national environmental or waste management legislation.
4. The establishment of formal collection systems to support the timely and sound collection of WEEE from commercial entities and households. This can include the development of formalised take-back programmes among retail and distribution stakeholders.
5. Development of a national data capture and management system for imported EEE products and flows in the country, with a view towards supporting monitoring and enforcement and decision-making.
6. Capacity development of the informal collectors, salvagers and scrap dealers to improve existing practices and ensure the ESM of valuable, non-valuable and hazardous components of WEEE.
7. The establishment a dismantling facility in the country to formally bridge the gap between the generators and downstream dealers and users of metals.
8. The consideration of further development recovery operations to support the recovery of precious metals from WEEE supported by existing skills and experience in the population due to participation in the local gold mining industry.

These recommendations in addition to the findings of this study can provide a foundation from which a national strategy for WEEE can be developed and implemented in order to achieve the ESM of WEEE in Suriname. Furthermore, they can assist in the enhancement of the existing operations and practices to ensure that realisation of the resident potential in business development for the valuable fractions of WEEE are achieved and beneficial to the local economy.

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1.1 The E-waste Challenge

1.1.1 Global Scenario

In the world today electrical and electronic equipment (EEE) is one of the fastest growing manufacturing activities that continue to expand exponentially, while the lifespan of these said equipment becomes shorter and shorter. This current development and growing demand for consumer goods has increased the consumption of EEE and the production of waste electrical and electronic equipment (WEEE) thus making e-waste one of the fastest growing waste streams. While there is no standard, global definition for e-waste, it has been listed as a hazardous waste source under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. Under the Convention, e-waste has been described as 'waste electrical and electronic assemblies or scrap containing components such as accumulators and other batteries, mercury-switches, glass from cathode-ray tubes and other activated glass and PCB-capacitors and also includes wastes contaminated with Annex I constituents (e.g. cadmium, mercury, lead, polychlorinated biphenyl) to an extent that they possess any of the characteristics contained in Annex III (e.g. explosive, flammable solids, poisonous, toxic)' (Basel Convention, 2010).

One of the main challenges faced is quantifying the amount of e-waste being generated globally due to the lack of a uniform measurement system for WEEE. The United Nations University (UNU) hosted the Step initiative and proposed a sound management frame work that incorporated multiple data sources and formats to quantify global e-waste volumes (Step, 2015). UNEP (2006) estimated the global generation of e-waste to be 20 – 50 metric tonnes annually. While the UNU calculated that approximately 42 Mt (million metric tonnes) of e-waste was generated globally in 2014 where it was estimated that 6 Mt was ICT related (United Nations University [UNU], 2015). The e-waste stream is estimated to grow at an annual rate of 5% globally (Step, 2015) and can grow by as much as 500 % in the next decade in some countries (United Nations University [UNU], 2015). Generally large and small household appliances, IT and telecommunication equipment and consumer electronics account for 90 % of e-waste generated (International Labour Organisation, 2015). Presently, the main generators of e-waste are the countries of the Organization for Economic Cooperation and Development (OECD), which have highly saturated markets for EEE (Widmer *et al*., 2005). China has been identified as the world's largest exporter of electronic goods (Ongondo *et al.,* 2011) as well as an importer of WEEE, with a reported 35 million tonnes of WEEE entering the country annually from developed countries (Yu, Ju, & Williams, 2009).

Compared to conventional municipal wastes, electrical products contain more than 1000 different substances (Widmer *et al.,* 2005) some can be hazardous or non-hazardous and poses a threat to human health and the environment (Bhutta *et al*., 2011). These hazards often arise due to improper recycling and disposal processes use. The exposure of these substances to the natural environment can result in these constituents being transported via different pathways on land and through water. This includes the leaching of heavy metals and other toxic compounds into the soil and water from improperly stored and managed WEEE,

thereby resulting in toxicity risks (Ogunseitan *et al.,* 2009). These pollutants can affect human health and wildlife and furthermore impact on social and economic systems. Informal waste management practices such as incineration generate and release highly toxic substances including metals, dioxins and furans, thereby causing a significant public health issue (Kimani, 2009). Based on these health and environmental concerns many European countries have banned the dumping of e-waste in their landfills (Bhutta *et al*., 2011).

The lack of facilities available due to the difficulty and cost of recycling e-waste together with the lack of enforcement of legislation regarding e-waste exports results in large digital discards being transported internationally from various industrialized countries to certain destinations where lower environmental standards and working conditions make processing e-waste more profitable (Bhutta *et al*., 2011). The ban on the export of hazardous waste to poorer countries was implemented by the Basel Convention since 1992 but the practice still continues. The transboundary movement of e-waste is an increasing concern for both the importing and exporting countries due to the increased visibility of the impacts on both countries and also it makes it difficult to map the flow volumes of e-waste since a lot is disguised as scrap metal or for reuse (StEP, 2015).

Developing countries are slow to implement policies regarding e-waste management due to a myriad of reasons. These include the challenges faced in implementing Extended Producer Responsibility (EPR) within a take-back policy. In the EU the EPR principle is applied to products where the producer is held responsible for the environmental impacts of their products throughout the products lifecycle including its end of life (EoL) management (StEP, 2015). StEP (2015) identified only two examples of policy options that considered all EEE products in their scope there are the EU WEEE Directive and the Swiss Legislation. Only recently Nigeria proceeded with a full scope policy but is in the primary stage of implementation (StEP, 2015).

Globally there is a general lack of proper legislation and also enforcement with respect to the management and infrastructure to properly treat the volumes of WEEE being generated. There is insufficient investment in the recycling industry together with ineffective take-back arrangements for end of life (EOL) equipment. These challenges can result from the lack of awareness amongst the general population on the dangers of improper disposal and management of WEEE.

The presence of various precious metals in e-waste makes the recycling business attractive economically. As such there is an economic benefit from the dismantling and recycling of e-waste (Khaliq *et al.*, 2014).

1.1.2 Regional Scenario

The Caribbean region faces similar challenges with the management of e-waste as the rest of the developing world. Most Caribbean countries do not have the finance or technical resources to deal with the increasing volumes of e-waste being generated. In the region there is no available recycling facility to provide a viable option for dealing with e-waste, while only a few countries have e-waste disposal services provided by private entities that are accepting WEEE for off-island disposal through largely unregulated bulk shipping to scrap metal and e-waste recyclers in other parts of the world.

In the region there is little knowledge on the volumes of e-waste generated because of the absence of country specific WEEE assessment performed on a national level. So far in the Caribbean Trinidad and Tobago is the only country to perform a formal e-waste assessment in 2013 under the BCRC-Caribbean. While in countries such as Barbados (Armstrong, 2013), Suriname (Abdoelrazak, 2013), St. Vincent and the Grenadines, St. Lucia, St. Kitts and Nevis, Grenada and Dominica (Lay, 2013), no formal assessments on e-waste have been conducted and as such it is difficult to quantify the volume of e-waste that is generated regionally.

The lack of awareness in the Caribbean is the contributing factor to the lack of understanding of what constitutes WEEE and of the impacts of improperly managed WEEE on human health & the environment. Public awareness campaigns are either absent or poorly target the public in Caribbean countries, although in countries such as Antigua and Barbuda, Barbados and St. Kitts and Nevis there are public service announcements (Lay, 2013) via all forms of media promoting awareness on e-waste. This is the main reason why large generators of WEEE are unaware of the consequences of the dumping of e-waste in the landfills. Most of these landfills do not possess proper management operations for separation of the different types of wastes; all are handled in the same way. In most instances WEEE is disposed into the regular solid waste stream in most of the Caribbean countries except in St. Kitts and Nevis where their waste stream is segregated (Lay, 2013).

All of the Caribbean countries currently possess laws and regulations pertaining to solid waste but none have anything specifically addressing WEEE. WEEE-specific regulations are needed throughout the region, as is recognised by the National Solid Waste Management Authority of Jamaica which is reportedly developing regulations specific to the e-waste issue (Morrison, 2013). In the Caribbean, there is much room for improvement and given the size of the islands WEEE management is important to mitigate the negative impact on human health and the environment. As such, the first step in addressing the e-waste issue is firstly quantifying the volumes of WEEE being generated. Following this, addressing the issue of growing quantities and appropriate methods of treatment and disposal are required.

1.2 Project Scope and Objectives

The Basel Convention Regional Centre for Training and Technology Transfer for the Caribbean (BCRC-Caribbean and/or the Centre) developed this project with the goal of providing a means through which the management of WEEE can be better understood and improved in the Republic of Suriname.

The BCRC-Caribbean is an autonomous, regional organisation hosted by the Government of the Republic of Trinidad and Tobago (GORTT). The Centre is an operational arm of the Basel Convention that exists under the auspices of the United Nations Environment Programme (UNEP). The BCRC-Caribbean serves the fourteen (14) contracting Parties to the Basel Convention located within the Caribbean Sub-region, including Suriname.

The Centre was established to assist these countries in their implementation of and compliance with the Basel Convention, which is the most comprehensive waste management convention that seeks to protect

human health and the environment from hazardous chemicals and wastes. As such, the primary mandate of the Centre is to execute the following functions in support of such assistance:

- Training,
- Technology transfer,
- Information dissemination,
- Awareness raising, and
- Consultancy.

In 2012, the Centre developed its biennial Business Plan for 2014-2015 to include several initiatives that seek to aid the regional Parties in complying with and implementing the three Conventions. This was done in accordance with the outcomes of a regional needs assessment performed by the Centre prior to April 2012. The identified activities included developing projects to address three priority waste streams: waste oils, waste tyres and waste electrical and electronic equipment (WEEE/e-waste). In recognition of these key issues affecting Convention implementation and compliance, the Centre has developed initiatives in order to address these specific waste management concerns in the region.

In 2014, the BCRC-Caribbean developed and submitted a proposal to the Partnership for Action on Computing Equipment (PACE) of the Basel Convention under a call for the development and execution of pilot projects in e-waste. The Centre submitted its proposal for the project entitled "Assessment of Waste Electrical and Electronic Equipment Management and Data for the Republic of Suriname", or SurWEEE Project, which was subsequently approved for funding by the PACE Working Group in May 2014. Following the completion of the small scale funding agreement in October 2014 between the Secretariat for the Basel, Rotterdam and Stockholm Conventions (SBRSC) and the Centre, project implementation progressed.

The SurWEEE project was developed with the goal of providing a means through which the issue of the lack of knowledge and understanding on WEEE generation and management in the Republic of Suriname can be directly addressed. This is important in order to devise a holistic national approach to enhance the environmentally sound management (ESM) of e-wastes in the country. Hence, the specific objectives of this work are as follows:

1. To collect, collate and evaluate available secondary data and information pertaining to the generation and flows of EEE and WEEE in Suriname;
2. To collect and evaluate primary data and information from key stakeholders in the management of WEEE nationally;
3. To estimate the generation of WEEE in Suriname and assess the status of WEEE management, including existing shortfalls in current management practices taking place locally;
4. To devise recommended actions to be implemented in the short to medium term in order to achieve the ESM of WEEE in Suriname.

The work performed under this project sought to collect and analyse existing data and information on EEE and WEEE, including feedback obtained from relevant stakeholders involved in the management of EEE throughout its life cycle. However, it should be noted that given the fact that Suriname is not a producer of

EEE, the focus of this assessment was mainly on the segments of the life cycle from the importation and consumption of EEE until the end of their useful lives when waste management practices are to be applied.

Under this project, the European Union (EU) Framework Directive was used as the main reference for the definition of WEEE, given the fact that there is no generally accepted definition for the term 'e-waste' (Widmer *et al.,* 2005) nor is there any national definition for WEEE in Suriname. The Directive refers to electrical or electronic equipment which is waste, that is "any substance or object which the holder disposes of or is required to dispose of pursuant to the provisions of national law in force, as well as all components, sub-assemblies and consumables, which are part of the product at the time of discarding" (EU, 2003). The following categories of WEEE as outlined under the Directive were applied to the study:

1. Large household appliances
2. Small household appliances
3. IT and telecommunications equipment
4. Consumer equipment
5. Lighting equipment
6. Electrical and electronic tools
7. Toys, leisure and sports equipment
8. Medical devices
9. Monitoring and control instruments
10. Automatic dispensers

The intent of assessing all of these categories was to garner a comprehensive understanding of a range of this particular waste stream within the country and to move away from the focus on one major category.

This report presents the outcomes of this national assessment, which includes a presentation of the generation of WEEE and the management framework, as it currently exists in the Republic of Suriname. This includes a detailed breakdown of both primary and secondary data and information that were gathered and collated by the Centre including trade data (imports and exports) for all of the countries and existing datasets and description of the management practices applicable to WEEE as obtained from key stakeholders across the country. The report then goes on to provide a series of recommendations through which the local system can be enhanced in order to ensure the ESM of WEEE and to capitalise on local opportunities associated with WEEE management.

2 BACKGROUND

Electronic waste has been described as a 'double-edge sword' (Zumbuehl, 2006) as there are both negative implications for humans and the environment by mismanagement, as well as positive attributes via the potential for economic returns through the recovery of valuable resources. This section seeks to provide a balanced review by exploring both sides of this topic.

2.1 Implications of WEEE and WEEE Management

2.1.1 The Components of EEE and WEEE

The continuous advancements in technology and modifications to the function and design of electronic equipment have resulted in EEE being comprised of a heterogeneous mix of components. A major concern is that some parts of EEE contain hazardous materials. When comparing the contribution of the weights of the different components of e-waste, the bulk of the material such as aluminium, plastics and glass account for over 80% of the weight while other toxic and valuable materials are found in smaller quantities and are of greater importance (EMPA, 2009).

While it has been argued that the quantities of pollutants and hazardous components used have been in steady decline over time (EMPA, 2009), little is known about the toxicity and environmental properties of many of the chemicals (Lundgren, 2012). Below highlights some of the major categories of hazardous components found in e-waste streams and the risks they pose.

Heavy metals

Lead, cadmium and mercury are three prominent heavy metals contained in e-waste. Lead can be found in cathode-ray tubes (CRTs), computer monitors and circuit boards, cadmium in plastics, semiconductor chips and older CRTs and mercury in thermostats, flat screen backlights, medical equipment and mobile phones (Boeni, *et al.*, 2008; Puckett and Smith, 2002). Based on a report of the European Commission, 40% of the lead found in landfills is derived from consumer electronics (Commission of the European Communities, 2000 as cited in Zumbuehl, 2006). These heavy metals are linked to brain and kidney damage in humans, and accumulate in other living organisms and the environment with negative implications.

Brominated flame retardants (BFRs)

According to Puckett and Smith (2002), more than 50% of the BFRs used in electronics consist of tetrabromobisphenol A (TBBPA) while 10% is polybrominated diphenyl ethers (PBDEs). When burned, these flame-retardants, which are found in circuit boards and in the plastic casings of electronics, create dioxins (Widmer *et al.*, 2005), which are dangerous to human health.

Other halogenated hydrocarbons

This category includes polyvinylchloride (PVC) and chlorofluorocarbons (CFCs). PVC is found in wire insulation and computer housings (Puckett and Smith, 2002) while CFCs can still be found in some refrigerants used in electrical cooling appliances. As with BFRs, toxic dioxins and furans are created from these substances when plastic components of WEEE are burnt (Lundgren, 2012).

Rare earth elements

Rare earth elements used in the manufacture of EEE include Americium and Europium. Americium is used in smoke detectors and persons can be exposed to the primary isotope, Am-241, by inhalation of americium-contaminated dust during dismantling or burning (EPA, 2012). The primary health concern is tumour formation caused by the radiation emitted by the isotopes. Europium can be found in the tubes of televisions and is linked to increased risk of developing liver and bone cancer (Peterson *et al.*, 2007).

2.1.2 Health and Safety Risks

Workers and local residents directly involved or in close proximity to recycling and incineration activities can be exposed, via inhalation, dust ingestion, oral intake and skin exposure (Lundgren, 2002), to the hazardous materials contained in e-waste. Exposure-related health risks include respiratory problems such as silicosis (Lepawsky and McNabb, 2010), pneumonitis and respiratory irritation (Yu *et al.,* 2006), dermal diseases, eye irritations, stomach disease (Raghupathy *et al.,* 2010, Nordbrand, 2009), and brain damage and cancers in the medium to long term (Puckett and Smith, 2002).

Additionally, workers are at risk of occupational hazards such as electric shocks (Prakash and Manhart, 2010) and implosion when handling CRTs due to the vacuum inside the tubes. Chemical splashes, flying particles and radiant heat are further dangers workers are exposed to (Lundgren, 2012).

The likelihood of these health and safety risks occurring is exacerbated by the lack of protective gear worn by workers particularly in developing countries and the informal sector. Boeni *et al.* (2008) have indicated several studies that have highlighted the underprivileged as the main entities responsible for dismantling of EEE usually without occupational health and safety measures. The absence of sanitary facilities and practices is also an issue in the developing world. According to Widmer *et al*. (2005), persons involved in the e-waste sector in developing countries are either unaware of the health risks associated with the dismantling and processing of e-waste and/or have limited financial resources to invest in adequate precautionary measures.

2.1.3 Environmental Issues

Some of the components of WEEE, such as the heavy metals, accumulate in living organisms and the environment. Lead for example, accumulates in the environment and has high acute and chronic effects on the biota. Mercury accumulates in organisms and concentrates up the food chain (Puckett and Smith, 2002). In addition to bioaccumulation and biomagnification, long distance transport of some substances has been observed leading to contamination, habitat degradation and the decline in biological diversity and populations in even remote areas.

Leaching and surface runoff of harmful toxins contained in e-waste are issues especially at landfill sites and recycling/processing facilities. Pollution of aquifers, streams and rivers is therefore likely when WEEE related activities take place near to these watercourses. According to Laissaoui and Rochat (2008), heavy metals

that are mobile are transferred to the groundwater and plants, posing a threat to biological populations, while those metals that are immobile can cause irreversible soil contamination.

Pollution resulting from e-waste related activities is not limited to land or water only. When burning occurs, harmful dioxins and furans are released polluting the surrounding air. This has negative implications for organisms breathing in these substances. In short, indiscriminate e-waste dumping and processing activities results in an overall decline in environmental quality, resulting in habitat loss and the decline of biodiversity and natural populations.

2.1.4 Socio-Economic Issues

In an attempt to bridge the "digital divide" across regions, EEE has been exported in significant quantities as donations, or otherwise from developed to developing and transition countries. There have however, been accusations that such exports are allegedly covert attempts to dispose of unwanted toxic WEEE, as for instance in some cases the EEE exports to Africa are not even pre-tested for functionality (Ongondo *et al.,* 2011). It is estimated that this dumping of e-waste has led to the creation of a digital dump with a global total of about 180 million units discarded per year (Osibanjo, 2011). Furthermore, such exports have bolstered informal e-waste recycling recovery activities, which as described earlier have negative implications for human health and safety.

2.2 The Benefits of WEEE

2.2.1 Social-cultural

In some countries, such as Morocco, local artistes use e-waste material to produce artwork (Laissaoui and Rochat, 2008). The reuse of e-waste material therefore provides an opportunity for local artisans to showcase their talent and the sale of the artwork creations acts a source of revenue for the creators.

2.2.2 Material Cycling

The issue of stockpiling of WEEE occurs for a number of reasons globally. However, the practice resonates even more so in the U.S.A, the outcome of which is the inability of valuable resources to re-enter the materials cycle, thereby encouraging further mineral extraction and environmental destruction from the direct effects of mining, manufacturing, transport and energy use in the creation of a new product (Ongondo *et al.,* 2011). So critical is this issue of resource depletion and access to natural deposits, that the EU has created a list of what they deem to be ''potentially critical'' raw materials.

2.2.3 Economic

E-waste related activities can act as a source of income to persons via the sale of transformed e-waste material as mentioned above, or via employment in the e-waste management sector. Jobs exist for sorters, recyclers, dismantlers, transport operators and so forth. This has led to the evolution of an entirely new economic sector, so much so that companies such as Boliden (Sweden), WEEE AS (Norway) and Citiraya (UK) are seeing the merit in this waste stream and making investments (Widmer *et al.,* 2005). The creation of low and semi-skilled jobs in the e-waste management sector can help to curb unemployment and the issue of poverty especially in the developing world.

Proper recycling and recovery activities can also reduce input costs since the need for raw materials in the manufacture of electronics can potentially be lowered. This of course also represents an additional business opportunity for local and foreign investors, especially in the recovery of precious metals from e-waste (Osibanjo, 2009), as there is the opportunity to partake in the lucrative e-waste transboundary trade industry (Lau *et al.,* 2013).

The material flows from imported WEEE works further by acting as a highly coveted source to appease the demand for affordable, second-hand EEE in several emerging economies.

2.3 Actions to Address WEEE and its Management

Armed with this awareness on the dichotomous nature of WEEE, efforts have been made by international bodies to effectively treat the problem. The primary authority for global environmental governance, the United Nations Environment Programme (UNEP), has increasingly integrated the issue of electronic wastes throughout its far-reaching global environmental agenda. The main global level initiative towards the management of WEEE is the Basel Convention. This is a legally binding international environmental agreement, adopted in 1989 that seeks to control the transboundary movement of hazardous waste and encourage its ESM to protect human health and the environment.

The Parties to this treaty have formed private sector partnerships in an attempt towards the ESM of WEEE. The first of these was the Mobile Phone Partnership Initiative (MPPI) formed between the world's top mobile phone manufacturers and signatories to the Basel Convention. It aimed to promote reuse, collection, proper transboundary movement, recovery and recycling of EOL mobile phones and awareness raising and training. In 2008, the second partnership with similar aims, but this time working towards the ESM of EOL computers, known as the Partnership for Action on Computing Equipment (PACE) was formed.

There is another environmental convention for which the toxicity issues associated with WEEE management and disposal is also a concern, namely the Stockholm Convention on Persistent Organic Pollutants. This Convention seeks to eliminate the use of tetrabromodiphenyl ether (TetraBDE) and pentabromodiphenyl ether (PentaBDE) (UNEP, 2009); two BFRs that are utilised widely in the production of EEE. In this respect, Parties to the Convention must ensure that articles containing these substances are only recycled and disposed of by ESM and that exports of such items be limited to the amounts permitted within its borders.

There have also been other initiatives developed internationally. For instance the Strategic Approach to International Chemicals Management (SAICM) has outlined seven emerging policy issues, of which hazardous substances within the life cycle of electrical and electronic products are one focal area. The Global Plan of Action has identified work in the areas of green design, environmentally sound manufacturing and awareness-raising for e-products, as well as the identification and compilation of a host of international best practice resources within this field (SAICM, 2013).

The Solving the e-Waste Problem (StEP) programme is also aimed at tackling the e-Waste problem via a multi-stakeholder approach. Its main objectives are to optimize the lifecycle, utilisation and re-use of EEE

and to increase awareness on the disparities in the digital divide as well as general EEE knowledge. To this end there are five taskforces: policy, re-design, re-use, recycle and capacity building, with specific attention being focused on these respective areas on a local and international scale.

Efforts have also filtered down to the regional level, as is observed in the EU where action has been directed towards various phases of the product's life cycle. The Restriction on Hazardous Substances (RoHS) Directive prohibits new EEE containing more than agreed levels of certain hazardous substances such as lead, cadmium, mercury and certain flame-retardants from being placed on the EU market. Alternatively, the Energy Using Products Directive has a framework geared towards the establishment of stipulations for EU eco-design so as to facilitate the unrestricted flow of these products within the EU market. The WEEE Directive focuses on the final-stage of the product and includes measures that mandate manufacturers and importers in the EU member states to take back their products post-consumption and guarantee the use of environmentally sound methods for disposal (Widmer *et al.,* 2005). As such the objective of the WEEE Directive is two-fold:

i. As a first priority, the Directive aims to prevent the generation of WEEE by extending the life of equipment and promoting refurbishment as a first option before decommissioning.

ii. Additionally, it aims to promote reuse, recycling and other forms of recovery of WEEE so as to reduce the disposal of waste

Environmental non-governmental organisations (NGOs) have also taken up the mantel in the fight against improper handling and management of e-waste, with one of the frontrunners in this regard being the Basel Action Network (BAN). The organisation is a global advocate against illegal trade in toxic waste streams. It has among other activities, established a certification standard, 'e-Stewards', to encourage the use of responsible and best practices in the recycling of e-waste.

Within the Caribbean, very few stakeholders have taken up the e-waste challenge and are addressing the related concerns. These have primarily included non-governmental and not-for-profit organisations at the national level. At the regional level, the BCRC-Caribbean has been the primary entity seeking to elevate the e-waste problem and support the development of holistic solutions and technology transfer among the region's Parties to the Basel Convention.

3 COUNTRY OVERVIEW

The Republic of Suriname is geographically located in Northern South America, bordering the North Atlantic Ocean between Guyana and French Guiana. The capital city is Paramaribo, which houses almost half of the country's population. Suriname is richly endowed with natural resources including mineral ores on which the country's economy heavily depends.

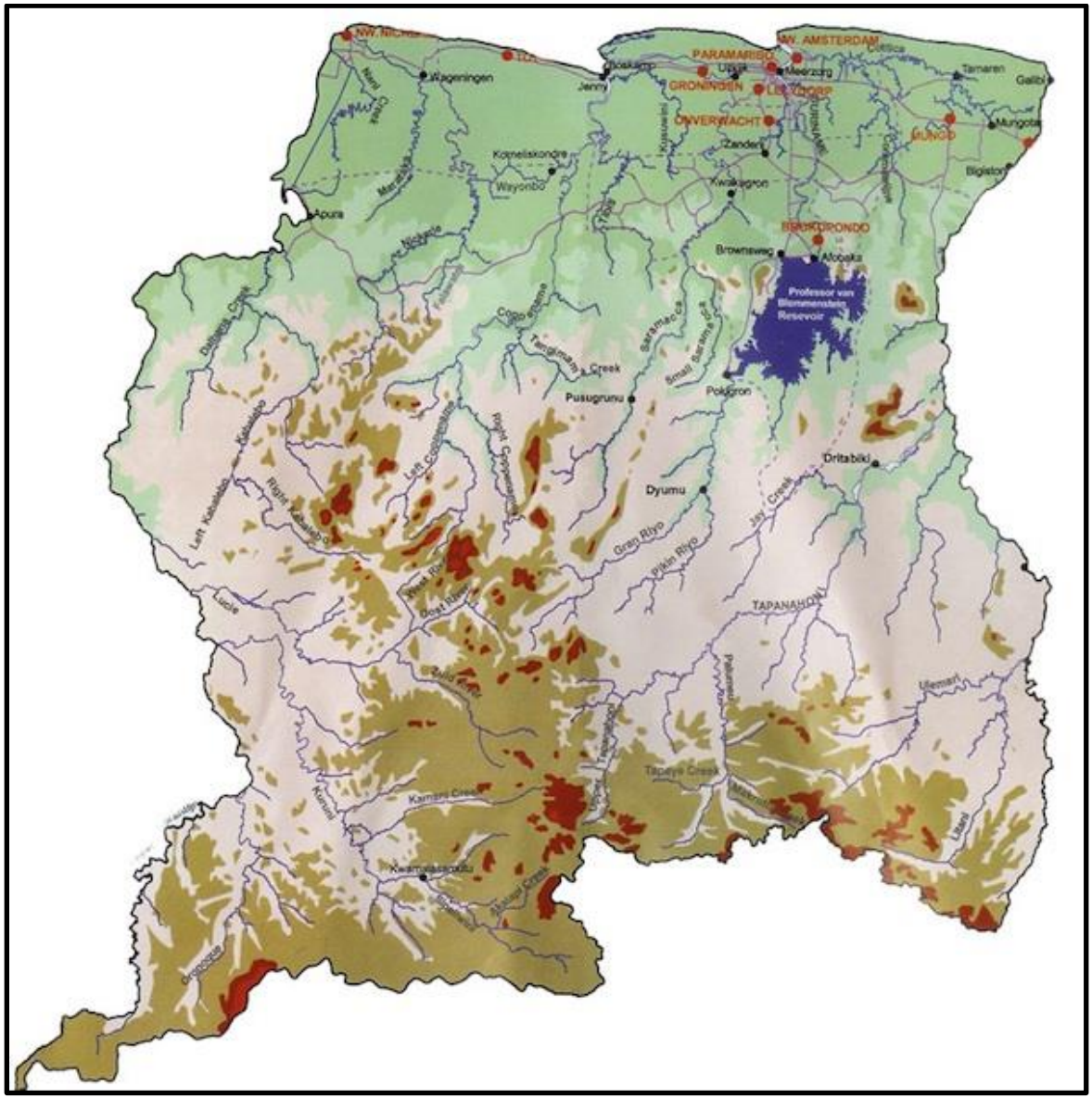

Figure 3-1: Map of Suriname, its districts and cities and towns. Source: Maps Open Source, n.d.

3.1 Society

3.1.1 Population and population growth

In 2012, the total population of Suriname was estimated at 534,500 (World Bank, 2014a; UNICEF, 2013) and the CIA (2014) has projected the population of the country to be 573,311 in 2014 with a population growth rate of 1.12%. The capital city, Paramaribo had an estimated population of 278, 000 in the year 2011 (UNSD, 2013). With an average urban population growth rate of 1.9% for the period 1990-2012 (UNICEF, 2013), the total urban population was estimated at 70.1% in the year 2012 (UNSD, 2013; UNICEF, 2013).

Urbanisation and population growth can be used as rough indicators of potential increases in demand for information and communication technologies. Of course economic considerations such as increases in disposable income need to be taken into account.

3.1.2 Literacy and school enrolment

For the period 2005-2012, the World Bank (2014b) placed adult literacy at 95% for males and 94% for females. According to UNICEF (2013), the total adult literacy rate[1] for Suriname in 2012 was 94.7%. Youth literacy rates[2] for the period 2005-2012 were placed at 98% and 99% for males and females respectively (Word Bank, 2014b).

In terms of enrolment, UNICEF (2013) reports that in 2012, the net primary school enrolment ratio[3] in Suriname was 92.4 for males and 93.3 for females, while the net secondary school enrolment ratio[3] was 51.6 and 62.8 for males and females respectively. The most recent year for which information on tertiary enrolment is provided is 2012, where a gross tertiary enrolment ratio[4] of 12.08% was stated for both sexes by the UNESCO Institute for Statistics (2014) and World Bank (2014c).

While literacy rates are based on the ability to read and write and therefore do not necessarily translate to computer literacy, enrolment rates are useful to consider in any EEE inventory or e-waste assessment as they roughly indicate the student populations that must be catered for by the country's information technology base.

3.1.3 Access to ICT services and trade in the ICT goods

Estimates for Suriname show that in the year 2012 there were 106 mobile cellular subscriptions per 100 persons in the country while 35% of the population were estimated to have been using the internet (ITU, 2013). The latter represents a five-fold increase in the percentage of internet users from the year 2005 to the year 2012 (UNSD, 2005). While these figures represent intangible services and not physical ICT equipment,

[1] Adult literacy rate refers to the percentage of persons aged 15 and over who can read and write.

[2] Youth literacy rate refers to the percentage of persons aged 15-24 who can read and write.

[3] The net primary (secondary) school enrolment ratio refers to the "number of children enrolled in primary (secondary) school who belong to the age group that officially corresponds to primary (secondary) schooling, divided by the total population of the same age group (UNICEF, n.d.)

[4] The gross tertiary enrolment ratio is defined as "the ratio of total enrolment in tertiary education, regardless of age, expressed as a percentage of the total population of the five-year age group following on from secondary school leaving." (World Bank Group, 2014c)

they are useful to consider in a national WEEE assessment as they provide some indication of the quantities of WEEE that will potentially be generated as more and more persons utilize these services.

With respect to the trade of ICT goods, according to the United Nations Conference on Trade and Development's (UNCTAD) statistical database (2014), ICT goods constituted 2.78% of total imports into Suriname in 2011, and approximately 0.09% of total exports for the same year. While these percentages might seem small, it is more relevant to note the actual quantities in units, or masses of equipment that are imported and exported, which is what this assessment attempts to do.

3.1.4 Employment

The World Bank (2014c) reports that the total labour force in Suriname in 2012 was 210,247 persons. This figure represents approximately 40% of the country's total population in the same year. Unemployment[5] in males fluctuated between 8 and 10% for the period 2002-2012, while unemployment in females was observably higher, never falling below 19% during the same time period (World Bank, 2014c). Total unemployment over this ten-year period fluctuated, decreasing slightly from 13% to 12.8% between 2002 and 2007 and then rising again to 13.1% in 2009. Subsequently, unemployment figures showed a general decrease to 12.7% in 2012 (World Bank, 2014c).

The recent downward trend in unemployment, however slight it may be, is important to note as it indicates that there are more persons now than before with a source of disposable income, which they can use to spend on consumer goods including mobile phones, computers and other technology. This has implications for the quantities of these goods demanded and used and, consequently, the waste generated from these technologies.

In terms of sectorial distribution of employment, the industrial sector remains the predominant employer for Surinamese with 23% of the labour force working in industry compared with only 8% in agriculture, based on a 2004 estimate (UNSD, 2013).

3.2 Economy

3.2.1 Trade and Revenues from Economic Activities

The gross domestic product (GDP) of Suriname continues to rise, increasing from US $4.35 billion in 2010 to $4.61 billion in 2011 (UNSD, 2013) and $5.012 billion in 2012 (World Bank, 2014a). These figures give the country an "upper middle income" status according to the World Bank (2014a). In 2012, the gross national income (GNI) per capita stood at US $8680 (World Bank, 2014a).

The economy of Suriname is largely dependent on gold, alumina and crude oil as these are the major commodities exported out of the country and therefore serve as a source of foreign revenue (Ministry of Trade & Industry of the Republic of Suriname, 2012). According to the Observatory of Economic Complexity (2011), gold and alumina constituted 32.34% and 27.68% respectively of exports in 2011. According to Inter-

[5] Unemployment refers to the share of the labour force that is without work but is available for and seeking employment (World Bank Group, 2014d).

American Development Bank (IDB, 2005) the bauxite industry alone accounts for more than 15% of GDP and 70% of export earnings. Exported commodities are mainly destined for the United States, the United Arab Emirates and Canada (CIA, 2014; UNSD, 2013). The inflation rate in Suriname was also recorded at 2.90% in February 2014 (IDB, 2015).

On the other side of the spectrum, the main commodities imported into Suriname are refined petroleum and capital equipment namely cars, large construction vehicles and delivery trucks (Ministry of Trade & Industry of the Republic of Suriname, 2012; Observatory of Economic Complexity, 2011). According to the Observatory of Economic Complexity (2011), the former constituted 19.78% of imports in 2011.

Imports originate mainly from the United States, Trinidad and Tobago, the Netherlands and China (CIA, 2014; UNSD, 2013).

The increasing trend in the GDP of Suriname is noteworthy as it indicates that the country's economy and thus wealth is on the rise. Increasing wealth has implications for Suriname's level of WEEE generation as it means that the country has the finances to expand and develop its ICT base for the benefit of the country's economy and its citizens.

3.2.2 ICT Developments

Over the last decade, there have been several initiatives of the public and private sector that have had and will continue to have implications for the usage of information and communications technology (ICT) equipment in Suriname. According to the Inter-American Development Bank (IDB) (2015), these include the following:

- Entry into force in 2007 of the Telecommunications Act ending the monopolistic position held by Suriname's then only telecommunications service provider Telesur. Until 2015 there were three (3) telecom operators in this sector, but now there are 2 – Digicel and Telesur This has resulted in competitive prices and an increasing demand for ICT services.
- An e-government program that is being developed in order to reduce the digital gap between the society and its administration. The Office of the Vice-President is responsible for this initiative, which is part of the National Development Plan for ICT in order to support government services. This National Development Plan states that ICT is essential for modernizing Suriname.
- The Ministry of Transport, Communication and Tourism (TCT) has also undertaken actions for the development of a national ICT strategy that will align Suriname with the Single ICT Caribbean space.
- The development of a digital inclusion strategy on Education by the implementation of the following projects:
    - Second Basic Education Improvement: Jointly financed by the IDB and GoRS, this project is implementing a pilot program focused on the development of the legal and regulatory framework for ICT in education, the design of educational content and specialized teacher training

- Computer Aided Learning: Supported by UNICEF, each participating school received 25 laptops. Educational software was made available on the laptops for math and Dutch language. Teachers took part in training to use the laptops in the classroom.
- Project2link: Through a new ICT platform, facilitates the exchange of knowledge, labour, transport and materials offered to help to find resources for Surinam local projects.
- National School Connectivity Plan: Part of the plan was a pilot involving 4 schools that received a computer lab, and broadband Internet access.
- More Effective Schools in Suriname Programme: Supported by the Belgian bilateral cooperation (VVOB), it trained several teachers in ICT skills and resulted in donations of computers to schools.
- One Laptop Per Child project: Suriname was selected in 2008 as one of the first LAC countries to participate in this project to provide one basic laptop to the poorest.
- Suriname National School Connectivity Plan: This draft plan developed by the Telecommunications Authority Suriname (TAS) and the International Telecommunications Union (ITU) outlined a pilot among 4 schools that received a computer lab and broadband internet access.
- Telesur's corporate social responsibility (CSR) initiative 'PCs for Schools Project' in 2012, which aims to stimulate ICT education in schools. Telesur has so far donated 549 computers to 71 schools in the country (Telesur, 2013). This has implications for the quantities of WEEE to be generated in the near future.

Significant efforts are being made to invest in new transmission and access technology, such as broadband or 4G wireless networks with associated products and services, including the building out of a fiber network in Paramaribo (IDB, 2015) to support these initiatives.

Within one year after the liberalisation of the telecommunications sector, a sharp rise in the number of mobile cellular subscriptions was observed. Statistics from the World Bank showed a drastic increase in mobile cellular subscriptions from 74 per 100 persons in the year 2007 to 128 per 100 persons in the year 2008 (World Bank, 2014c). The magnitude of this increase was twice that of the increase that took place in the three years from 2005 to 2007. This increase in mobile phone subscriptions is correlated with increased mobile phone usage and consequently has led to or will lead to increased e-waste when these phones have reached end of life.

ICT strategic policy and ICT programs carried out by the Suriname government over 2010 - 2014 have been successful. These ICT polices promoted the use of and access to ICTs, accompanied by high investments in broadband, user training and ICT educational programs. Thus, Suriname is one of the only Caribbean countries for which the Networked Readiness Index (NRI) has improved in the last three years by as many as 13 positions, from 126th to 113th. Additionally, it is expected that the Suriname NRI index will continue to improve in the coming years due to the previously reported ICT policies. Some other important ICT-related statistics to note include:

- The average percentage of computer homes in Suriname was 30.64% in 2012. The Paramaribo and Wanica districts, have percentages of 42.42% and 30.59% respectively. Meanwhile, the Brokopondo and Sipaliwini districts have percentages of 5.88% and 3.38% respectively (ITU, 2013).
- Estimated Internet Users per 100 inhabitants improved from 31.58% in 2010 to 37.4% in 2013 (ITU, 2013).
- In terms of fixed broadband, the number of fixed broadband subscriptions per 100 inhabitants in Suriname at the end of 2013 was approximately 6.60%. This translates to an increase of 190% in the last two years, given that the rate in 2010 was 2.99% (IDB, 2015).
- Mobile (voice) penetration has increased from 74.49 subscriptions per 100 inhabitants in 2007 to 127 subscriptions per 100 inhabitants in 2013. Many Surinamese have up to three mobile lines with different providers, pushing penetration figures upward of 120% (ITU, 2013).
- Mobile broadband subscription per 100 inhabitants was 15% (ITU, 2013).

In 2010, a decision was made not to tax computers and other related equipment entering the country. Consequently, a sharp rise in imported ICT equipment is expected. While statistics from the World Bank actually showed an immediate decrease in ICT goods imports as a percentage of total goods imports one year after the decision was made, statistics for more recent years; 2012 and 2013, were unavailable.

3.3 Environment

Suriname has a total area of 163,820 square kilometres (UNSD, 2013). The United Nations Statistics Division (UNSD, 2013) reported 95% of the land area to be forested in 2014. The country has a high diversity of biological species, housing 715 species of birds (7.9% of the world's bird species), 192 species of mammals (4.8% of the world's mammal species) and 318 species of freshwater fish (3.1% of the world's fish species) (Auboter 2012; Haversmidt et al. 1994; Abuys 2003; Alonso and Berrenstein 2006; Alonso and Mol 2007; ATM Country profile 2009; O'Shea et al. 2011)

Urban development coupled with increasing GDP and disposable income has implications for the amount of solid waste generated in the country. These factors in many instances lead to increased demand for technologies that will provide entertainment, comfort and improve efficiency in daily activities. The World Bank (2014) states that high-technology exports accounted for 6.5% of manufactured exports in 2012. The resulting waste generated requires environmentally sound management in order to prevent risks to human health and the environment.

3.4 Solid Waste Management

3.4.1 Collection

PAHO (2003) reported that a proper waste collection and disposal system was only available in Greater Paramaribo, however there is currently a system in the Paramaribo District whereby residents can place their paper and plastics in bags that are collected by the private sector and non-governmental organizations (NGOs) (Abdoelrazak, 2013). Furthermore while there is collection of waste in other districts as well, the persons responsible for collection differ between Greater Paramaribo and the other districts in the country.

3.4.2 Landfilling and incineration

According to the 2002 country analytical report for Suriname, current waste management practices in Suriname pose many health and environmental hazards especially near old dumpsites and illegal dumps (PAHO, 2003). The report goes further to say that the system for solid waste management has remained relatively unchanged over the past decades and the current meagre state of solid waste institutions can be attributed to the poor economic performance of the country since the 1980s. More recently, the Ministry of Labour, Technological Development and Environment of Suriname (ATM) reported in the country's National Implementation Plan (NIP) that waste management in the country is in a developmental stage, and existing systems can barely cope with the wastes being generated (ATM, 2011a).

The waste from greater Paramaribo and the district of Wanica is disposed of in a landfill that is only partly managed and has no bottom liner or leachate treatment (ATM, 2011a). This landfill, Ornamibo, is located in district Para and is the only public landfill which is a government entity. Ornamibo has reportedly been in a state of rehabilitation since 2002, in an effort to transform it into a controlled landfill to accommodate the disposal of chemical waste (ATM, 2011a). Other landfill areas in Suriname, assigned by the Districts Commissioners (DCs), are open dumpsites, which are not regularly supervised. For the most part, disposal sites are open dumps managed by the government rather than controlled landfills. Lack of government funds has hindered investment in sanitary landfills and as such private companies operate the few sanitary landfills that exist.

There are ten (10) reported disposal sites in Suriname, seven of which are open dumps (PAHO, 2003). Two of the remaining three disposal sites are waste dumps, Curmotibo and Paranam, which receive non-hazardous household and office waste and are operated by the private bauxite firm Suralco L.L.C. The final disposal site, Stowell, is operated by the bauxite mining company, BHP Billiton Group, and receives household waste from district Para as well as non-hazardous household and office waste from BHP Billiton and its contractors (PAHO, 2003).

These controlled and sanitary landfills are exceptions to the norm where final disposal occurs in open dumps located in population centres. In fact, PAHO (2003) reports that 99.9% of solid waste ends up in open air dumps or waterways in large population centres (>200,000 inhabitants) while 100% of waste ends up in open air dumps or waterways in small population centres (<50,000 inhabitants). While data on the waste ending up in landfills was unavailable, the aforementioned figures point to a dangerous reality; that the vast majority of solid waste is dumped in disposal sites that are not controlled as well as in the open environment.

It should be noted that the three landfills that exist in Suriname only receive non-hazardous waste. While the bauxite company Suralco L.L.C has some landfills for hazardous wastes. These sites are reserved for the hazardous waste generated by the company itself. There therefore exist no landfills to accommodate hazardous waste generated by households and small businesses and facilities. This presents a dilemma for the disposal of hazardous wastes especially as statistics obtained from the Ministry of Works point to a growing volume of hazardous waste materials despite a general decrease in the amount of waste disposed (ATM, 2011b). At the open dumps, no separation occurs therefore the waste that is dumped here from small

industries, shops, workshops and households may contain hazardous waste materials including WEEE and WEEE components.

Medical waste, which is one category of WEEE outlined by the EU WEEE Directive, is incinerated in the country. There are three operational incinerators in Suriname that handle all medical waste. However these incinerators do not meet BAT (best available technique) criteria. According to the country's national implementation plan (NIP), there is a plan to assign responsibility to a company for medical waste management in Suriname. In addition, the Ministry of Public Health (MVG) has signed a public private partnership (PPP) contract with a waste management company as part of the government's policy to outsource some of its activities associated with the collection and disposal of waste (ATM, 2011a).

Apart from contained incineration, open burning of waste is also done. During an inventory on obsolete and POPs-pesticides stockpiles, open burning was identified as a prominent source of unintentionally produced persistent organic pollutants (uPOPs). According to the former Ministry of ATM (2011a), smouldering and open burning of WEEE takes place locally. Wires in such equipment are burned to recover the copper however the process releases high concentrations of uPOPs, which are harmful to the environment and the human population.

3.4.3 Recycling

In Suriname, recycling is done at a very small scale. While the actual quantity of recycled materials is unknown, PAHO (2003) believes that this figure is probably very low. There exists some small scale initiatives for mainly PET, but also HDPE and glass bottles, aluminium containers, lead from batteries, and scrap metals from abandoned industrial equipment, however most recycling is done on an informal basis.

Waste collectors gather aluminium, iron and lead scrap to make a living. The scrap material is sold to export companies. In some cases the iron is re-used to fabricate cooking ware (ATM, 2011b).

3.5 Legal and Institutional Framework

3.5.1 Legislative & Policy Frameworks and Mechanisms

The Government of Suriname has ratified more than fifteen multilateral environmental agreements (MEAs). As a result of its formal commitment to these MEAs, the country must adhere to certain provisions at the international level which dictate how hazardous waste including e-waste, should be handled. Such provisions are detailed under the treaties to which Suriname has acceded, including:

- The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989)
- Stockholm Convention on Persistent Organic Pollutants (2001)
- The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1988)
- The Vienna Convention for the Protection of the Ozone Layer (1985) and its Montreal Protocol on Substances that Deplete the Ozone Layer
- The International Convention for the Prevention of Pollution from Ships (MARPOL) (1973/1978)

- The Convention on the Prevention of Marine Pollution by Dumping of Marine Pollution and other Matter (1972)

Although a draft law is currently being prepared and revised, there is currently no existing national legislation solely dedicated to the management of solid and hazardous waste management (IBD, 2005). Aspects of solid and hazardous waste are however covered by:

- The Pesticides Act
- The Criminal Law Act
- The Nuisance Act

In addition to the above, there exist pieces of legislation that address environmental pollution in general:

- The Hindrance Act (1972), which intends to prevent pollution arising from industrial activities and applies to firms that produce waste that can cause nuisance, danger or damage
- The Mining Decree (1986) and the State Decree of Mining Installations (1989), which governs the environmental impacts of mining operations
- The Penal Code (1911), which penalizes the contamination of water resources
- The Police Criminal Law (amended 1990) which penalizes the disposal of chemical waste in public places as well as the pollution of a water resource
- The Harbors Decree (1981), which prohibits the discharge of chemical waste and oil into public waters

In addition, in the Criminal Law Act articles 225a and 225b refer to punishment when people deliberately dump waste into the environment.

While these regulations exist, they fail to include specific pollution standards and are weakly enforced. These factors, together with the sectoral or fragmented nature of the above pieces of legislation, compromise their effectiveness as regulatory tools. In Suriname, the absence of a holistic environmental management framework that encompasses environmental management plans, environmental impact assessments and pollution control measures has created a situation where environmental protection from pollution and other human activity is greatly neglected.

While there has been an attempt to develop a comprehensive statute for environmental management and protection, the bill is yet to be passed and put into practice. The Environmental Policy and Management Bill which was presented for approval by the National Assembly of Suriname in 2002 and reviewed in 2004, has been undergoing revision since that time. The original version of the policy and management bill from 2002 has since been divided into two separate bills, an Environmental Management Act and an Institutional Arrangements Act. The former establishes the instruments and procedures for environmental management and the latter establishes the institutional capacity to implement them. These bills are yet to be approved by the National Assembly. Environmental Impact Assessment (EIA) procedures have also been drafted however revisions, like those for the bills, are still in progress (IDB, 2005). These delays are hindering progress in

implementing and enforcing environment-related policies in Suriname. More technical and political support is needed to push environmental legislation forward.

3.5.2 Institutional and Operational Framework

The National Institute for Environment and Development in Suriname (NIMOS) is one agency responsible for environmental management in the country. However, there are advisory groups that have equally important roles to play, for example the Inter-Ministerial Advisory Committee (IMAC) and the National Council for the Environment (NCE) (IDB, 2005). The above groups and agencies, together with the Ministry of Natural Resources (MNH), Ministry of Trade and Industry (MHI) and the Ministry of Agriculture, Animal Husbandry and Fisheries (MLVV), are responsible for environmental management in general. National Environmental Policy Coordination at the Office of the President of the Republic of Suriname, is the national coordinating unit for environmental policy.

However, there are ministries that are designated with tasks and activities associated specifically with the operational aspects of solid waste and its management. In Suriname these responsibilities are distributed across several government agencies and ministries who deal mainly with the technical and regulatory aspects of management (PAHO, 2003), including the Ministry of Public Works through its Waste Collection Department, the Ministry of Regional Development and the Ministry of Public Health.

4 ASSESSMENT METHODOLOGY

4.1 General approach to the assessment

The approach that was used in order to perform this assessment was similar to what the Centre used in its previous WEEE assessment in Trinidad and Tobago, which was an application of the methodology developed by the Swiss Federal Laboratories for Materials Science and Technology (EMPA). This included a combination of quantitative and qualitative activities that would collate, analyse and synthesise data and information obtained via primary and secondary sources in order to understand the generation, flows and management of WEEE and EEE with the ultimate end-point of developing recommendations that would lead to the design and implementation of a national strategy to enhance the ESM of WEEE in Suriname.

The work performed under this assessment to collect the primary data and information included a combination of desktop surveys and two (2) in-country missions coordinated and supported by the former Directorate for Environment of the Ministry of Labour, Technological Development and Environment of Suriname (DoE/ATM). It took into consideration that Suriname has a geographical area of 163,820km and is divided into 10 districts. Given the large size of the country and constraints in human resources and time, the study focused on the capital city, Paramaribo, which is also Suriname's largest city, and its district with almost half of the country's population.

Furthermore, the capital city and district also remains home to the majority of national businesses and their headquarters as well as the country's major port. However, the study also included primary data collection and observations from a small sample of stakeholders in one other city, Nieuw-Nickerie, which is in the district of Nickerie and is the 3rd largest town in the country. A larger data collection drive in other districts could not have been facilitated given human resource and time constraints for in-country work.

In the data collection phase a variety of methods were used to garner information for this study including interviews, observations and reviews of the existing literature, documents and databases.

4.2 Methods and Techniques

In this study, several methods were used in order to gather information, including stakeholder interviews, observations made from site visits and the review of existing databases and information.

4.2.1 Secondary data collection

4.2.1.1 Review of existing literature

EMPA, StEP and UNEP reports and methodology guidelines as well as case studies of WEEE assessments in both developed and developing countries, inclusive of the BCRC-Caribbean's 2013 WEEE assessment for Trinidad and Tobago, was used to guide the methodology for this study as well as to gain insight on e-waste management strategies adopted in various countries worldwide. Country reports for Suriname from national and international bodies were also reviewed in order to obtain insight into the local situation.

4.2.1.2 Trade data review

Using the list of e-waste categories outlined under Annex IB of the WEEE Directive (see Section 1.3) as a reference point, the trade (imports and exports) in the corresponding items were extracted from the applicable tariff codes from the Harmonised System (HS) in Suriname. The identification of the codes were based on similar codes used by the BCRC-Caribbean during its 2013 Trinidad and Tobago assessment with additional verification of the codes during examination of the trade database. The complete listing of HS codes used during the assessment are presented in **Annex I**.

Archival records sourced online from the International Trade Centre's Trademap database was then used as the primary database to acquire both the imports and exports for the products abstracted from the HS Codes. The trade data was classified at the level of the 6-digit HS codes for the period 2007-2011 and this information was then compiled in a database and trends observed.

While the 8-digit level of HS codes allows for more detailed analysis, statistics in the online database for Suriname show only two years, 2010 and 2011, at this level. Thus to gather data for a slightly longer timeframe, that is, three years and more, the 6 digit level was used.

4.2.2 Primary data collection

4.2.2.1 Stakeholder identification

The collection of primary data and information for the assessment took place primarily through the performance of interviews with key stakeholders. The stakeholders were identified using online directories and searches as well as membership listings of local business chambers where possible. Using the BCRC-Caribbean (2013) study as a guide for identifying key WEEE and EEE stakeholder groups, the main groups of stakeholders interviewed were:

- Distributors (wholesalers and retailers)
- Consumers (businesses)
- Local e-waste brokers / recyclers
- Waste collectors
- Scrap dealers

The stakeholders identified above were those involved at one point or more of the product life chain of EEE, whether at the distribution end, usage or final disposal. The data and information that were expected to be obtained from these stakeholders, which forms the rationale for their selection, is presented in **Table 4.1** below.

The Centre developed an initial listing on this basis, which was further refined as the project progressed (refer to Section 4.3 for more details). Out of a total of 54 stakeholders contacted, a total of 41 responses were received, equating to a response rate of approximately 75%. The final listing of interviewed stakeholders can be found in **Annex II** while the distribution of the survey respondents is presented in Figure 4.1.

Table 4-1: Breakdown of stakeholder groups for the Suriname WEEE Assessment and the expected data and information in possession of these stakeholders

STAKEHOLDER GROUP	DATA AND INFORMATION	
	QUANTITATIVE	QUALITATIVE
Wholesale distributors	▪ Lifespans of products	▪ Take-back arrangements ▪ Methods of record keeping ▪ Sources of the products they distribute – whether local, overseas or both
Retail distributors	▪ Sales	▪ Main clientele ▪ Post-sale services offered e.g. refurbishment and repair
Business/government consumers	▪ Purchases ▪ Turnover rates	▪ Methods of disposal and record keeping ▪ Knowledge of WEEE and its dangers ▪ Policies that govern stock turnover and/or disposal of equipment
Local e-waste brokers	▪ Quantities of WEEE received ▪ Quantities exported for further processing ▪ Ratios of mechanical to human labour	▪ Methods employed and protective measures taken in operations ▪ Countries to which material is exported for further processing ▪ Main categories of WEEE received
Waste collectors	▪ Monthly or annual quantities of e-waste collected	▪ Methods of data collection and recording ▪ Destinations for the collected waste ▪ Main categories of WEEE collected
Scrap dealers	▪ Average quantities of scrap collected, processed and sold ▪ Quantities exported, if any ▪ Revenues earned	▪ Methods employed in operations ▪ Final destination of the scrap metal, whether local, overseas or both ▪ Knowledge of WEEE and its dangers

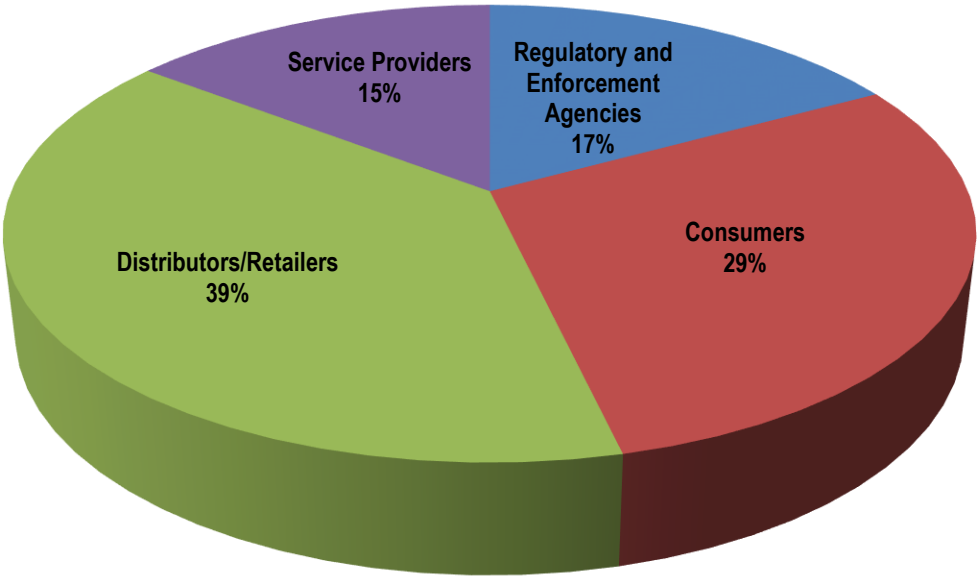

Figure 4-1: Distribution of respondents for the stakeholder interviews performed

4.2.2.2 Stakeholder surveys and data capture

Stakeholder questionnaires based on the BCRC-Caribbean's WEEE assessment for Trinidad and Tobago (2013) were developed and tailored to suit the respective stakeholders and specific WEEE categories. These questionnaires were used in order to perform the semi-structured interviews that took place with stakeholders, which would guide the direction of the interviews while allowing freedom in the responses, comparison amongst different interviewees and the flexibility to include additional questions where further insights are deemed necessary. A sample of each questionnaire can be found in **Annex III** to this report.

The DoE/ATM and the BCRC-Caribbean made contact with the initial listing of stakeholders identified and went on to arrange interviews and site visits where agreed. "Snowball sampling" also came into effect as feedback from the initial set of interviewed stakeholders allowed for identification of further key players who were added to the interview schedule where possible.

The bulk of the stakeholder interviews were performed during the two in-country missions performed by the BCRC-Caribbean along with the DoE/ATM. In instances where physical interviews and site visits could not have been performed during the Centre's in-country visit, remote interviews were performed by telephone or email correspondence.

4.2.2.3 Challenges and lessons learned from stakeholder surveys

While stakeholder interviews formed the basis of the primary data collection under the assessment, this means of data collection presented several challenges to the execution of the project. This included the following:

- Reluctance of stakeholders to be interviewed during initial contact.
- Respondents not being able to fully provide responses.
- Lack of timeliness on the part of interviewees to provide requested data and information resulting in a lengthy wait for data and information that would be the primary findings and inputs into the project.
- Logistical difficulties in arranging the stakeholder interviews and site visits during the short in-country work periods given the variability and conflicts in the locations and availability of the stakeholders.
- Unavailability of team members from the local collaborating agency in order to perform the necessary data collection within the project schedule.
- Unavailability of stakeholders willing to be interviewed during the project timeframe.

4.2.3 Data and information analysis

Subsequent to the collection of the secondary and primary data and information, these were compiled in appropriate Excel spread sheets and analysed for trends and key issues and responses based on the application of discrete statistics, where applicable. Stakeholder responses were also summarised in order to obtain and present a comprehensive understanding of the local management framework for WEEE and the various roles that the stakeholders play in contribution to the generation of these wastes.

4.3 Limitations

4.3.1 Data Sources

The trade data from the Trademap database for Suriname was the most consummate available datasets that could have been used to fortify the e-waste assessment for the SurWEEE project. However the use of the trade data from the HS Codes presented several challenges. Specifically the main issues that were encountered were as follows:

- In light of the fact that the Surinamese codes were extrapolated from the Trinidad and Tobago codes and verified on the Trademap database owing to the non-possession of the full list of HS codes for Suriname, uncertainties on the complete coverage of all of the applicable codes and related descriptions for the various WEEE categories exist.
- The vague description of the HS codes may have led to the inclusion of irrelevant or exclusion of pertinent data. The classification of codes described as “Other” will have also presented limitations to the assessment.
- Most of the HS Codes that were selected for the study illustrated data for volume but only a few of these HS Codes in the categories studied had unit values. For example the HS Codes studied in the Category 7 – (Toys and Leisure) had data in terms of volume but no data available for unit quantities. This presented a limitation in comparing that dataset with those provided by some stakeholders, which were mainly provided in quantities.
- Within the database there was an overlap of products between two categories. For instance sewing machines fell under Category 2 – Small household appliances and Category 6 – Electrical and Electronic Tools: ‘8452.10.00-Sewing machines of the household type’. To avoid duplication of data,

the product was made exclusive to one category, however, there is the possibility this may have occurred in other instances and gone unnoticed.

- There was no trade data available for the year 2008 in the database, which skewed the dataset and, in some instances, had to be omitted to facilitate analysis.

4.3.2 Data Collection

During the data collection phase for the project there were several challenges faced. The main issues that were encountered were as follows:

- While all attempts were made to identify and include a range of stakeholder responses for each of the ten (10) EU WEEE categories, some category-specific stakeholders, especially at the sub-category level, were exempted in the final pool of interviewed stakeholders given that these stakeholders declined or were unable to participate in this work during the project timeframe. This was the situation for the monitoring and control equipment category.
- It was difficult to get stakeholders on a broad geographical scope outside of Paramaribo and Nickerie since Suriname is a large country. Therefore, large stakeholders were the main focus, but some of the categories did not have a representative sample size for example household appliances, electrical and electronic tools and monitoring equipment.
- Additionally, during the interviews some stakeholders were reluctant to disclose vital pieces of quantitative data (e.g. stock data) as it may have been deemed confidential.

5 WEEE GENERATION AND MANAGEMENT IN SURINAME

5.1 Trade in EEE/WEEE: Imports, Exports and Accumulation

In Suriname there is no manufacturing of EEE therefore all equipment that is used or will be used are imported by local stakeholders. With respect to the import and export of EEE in Suriname, Table 5.1 compares the trade statistics for the different categories of EEE considered under the scope of the project for the period of 2007-2011. The trade statistics for Suriname in Table 5.1 depicts that the quantity of imports for the different categories outweigh their export counterparts, with total imports of all EEE categories being *35,282,285 kilograms* for the 5-year period and total exports being *3,381,486 kilograms*.

According to the data, the major categories of EEE imports are large household appliances (LHHA), electrical and electronic tools, consumer equipment, and IT and Telecommunication equipment in that order. The major export categories were LHHA followed by consumer equipment then electrical and electronic tools.

Table 5-1: Total imports and exports of EEE for the period of 2007-2011

CATEGORY	TOTAL IMPORTS (KG)	TOTAL EXPORTS (KG)
1. Large Household Appliances	14,268,939	1,503,534
2. Small Household Appliances	2,208,390	115,359
3. IT & Telecommunications Equipment	3,280,036	62,500
4. Consumer Equipment	4,420,770	1,107,661
5. Lighting	1,512,495	11,615
6. Electrical & Electronic Tools	5,645,005	452,278
7. Toys, Leisure & Sport Equipment	2,973,304	77,041
8. Medical Equipment	19,542	609
9. Monitoring & Control	852,918	49,422
10. Automatic Dispensers	100,886	1,467
GRAND TOTAL	***35,282,285***	***3,381,486***

Figure 5.1 compares the imports for the different EEE categories over the period of 2007-2011. The analysis of the trade data depicted that the import of EEE into Suriname has been generally increasing over the years for most of the EEE categories except toys and leisure equipment, which illustrated a sharp decline over the years. This trend may be due to the greater appeal of mobile devices such as mobile phones and tablets in exchange for toys due to the advancements in the ICT sector over the years. Most of the categories except large household appliances show a slight decrease or levelling-off in the quantities imported during the year 2011, which may be attributed to economic factors such as stabilisation of purchasing power and demand for these products.

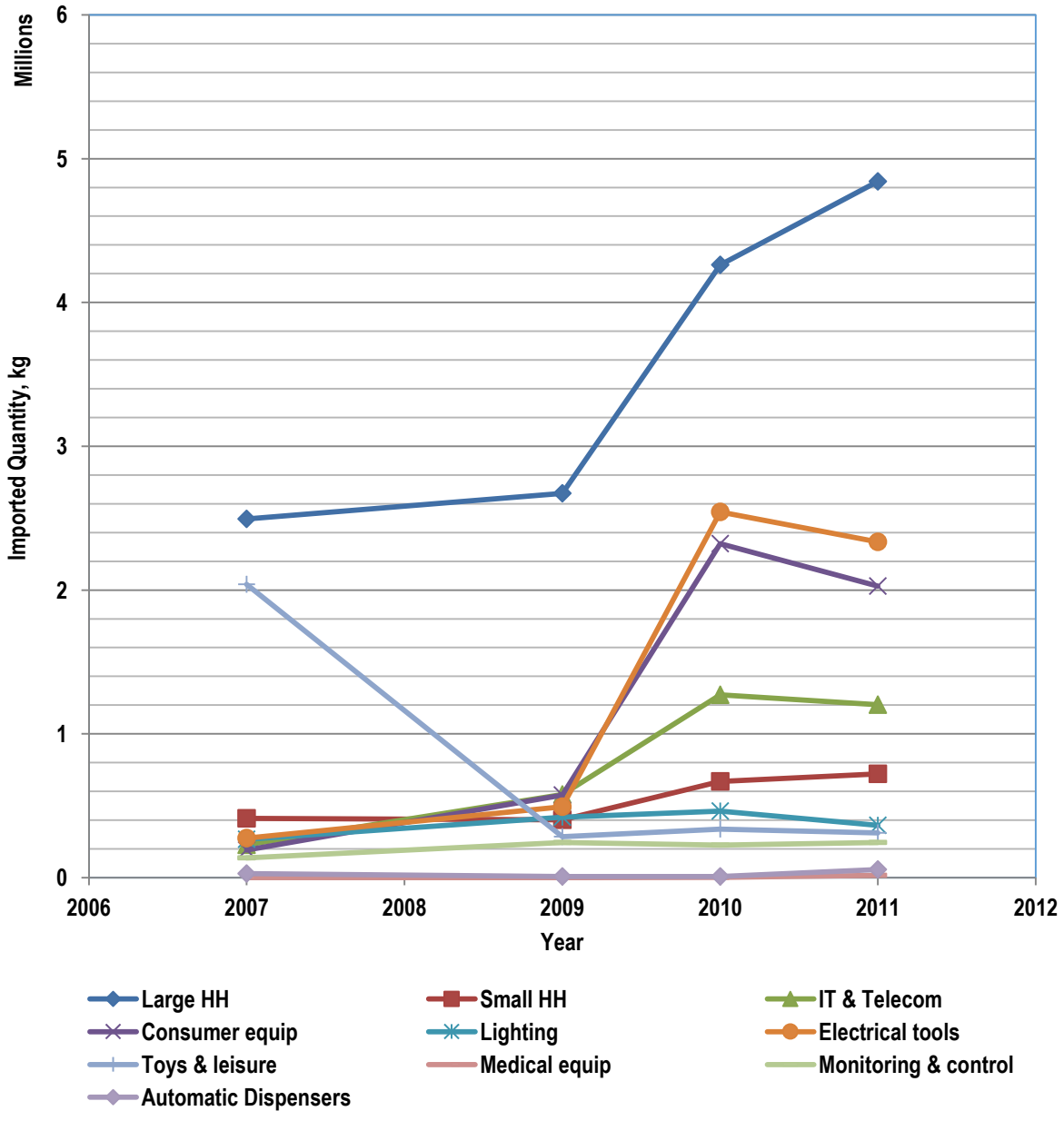

Figure 5-1: Annual quantities of EEE imported into Suriname for the period 2007-2011

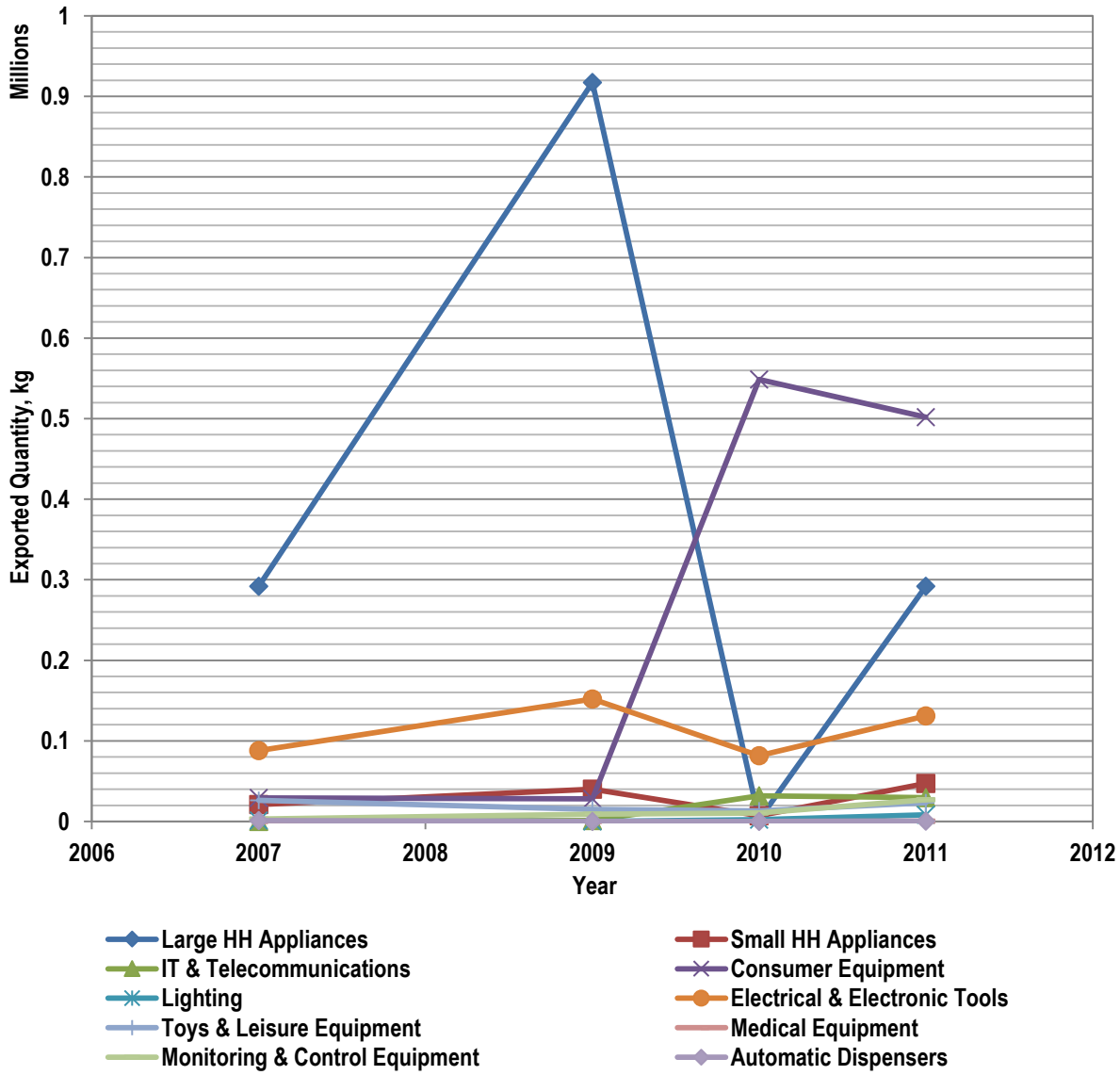

Figure 5-2: Annual quantities of EEE exported from Suriname for the period 2007-2011

In Suriname, the export of EEE related items is done on a significantly smaller scale than importation. This can be seen by the values presented in Table 5.1 and is also illustrated in Figure 5.2. The analysis of the trade data showed that the export of EEE from Suriname has been inconsistent for the different categories over the years. It was observed that there were fluctuations for LHHA, consumer equipment and electrical and electronic tools, which were the largest observed exports. There was a significant peak in the quantity of LHHA exported in 2009, while a downward trend is observed for the categories as they approached 2011.

It should be noted that the nature of these exports, that is, whether they are new equipment, UEEE or equipment at their EOL, is unknown as this information is not readily available from the trade information. Therefore, it cannot be ascertained that the export figures are equivalent to the level of international treatment of UEEE and/or EOL units or if there are other factors at play. However, stakeholder responses from the

medical equipment and automatic dispensers categories did indicate that they would export related functional and EOL equipment under different circumstances ranging from warranty returns with suppliers to exchange in machines with branches in other parts of the World.

Given that there is a significant disparity between the quantities of imports and exports, the potential for accumulation of WEEE in Suriname is quite high. This is demonstrated by the accumulation figures presented in Table 5.2 below. It should be noted that the exports for 2008 were omitted from this data due to the unavailability of a complete dataset for this year.

Table 5-2: Accumulation of EEE in Suriname for the period of 2007-2011

YEAR	IMPORT	EXPORT	*ACCUMULATION*
2007	6,072,000	461,003	***5,610,997***
2008	-	-	**-**
2009	5,680,116	1,162,300	***4,517,816***
2010	12,105,399	697,454	***11,407,945***
2011	12,120,770	1,060,729	***11,060,041***
TOTAL	***35,978,285***	***3,381,486***	***32,596,799***

Given the values presented in Table 5.2, over *32 million kilograms* of EEE would have been accumulated in the country during the 5-year period from 2007 to 2011. This figure, which is only marginally less that the amount of imports, could be translated into the potential WEEE volumes that the country would have generated since that time. However, this does not signify all of the WEEE that has been generated since 2007 because some of the imported EEE with long lifespans, such as new medical and solar equipment should still be in use across the country.

5.2 EEE and WEEE Assessment

As indicated earlier, Suriname does not manufacture EEE therefore stakeholders acquire their products from foreign suppliers. Hence the characteristics defining the EEE imported into the local system would be linked to factors such as brand selection, procurement frequency, life-span, and value-added services to prolong the life of these pieces of equipment. On the other hand, the WEEE segment of the EEE life cycle would be characterised by the available options to ensure that ESM is possible.

Based on the data presented in Table 5.1, IT & telecommunication was one of the major categories of EEE imports into Suriname. Consequently, the most cited brands identified by the stakeholders were those

manufacturing ICT equipment. As displayed in Figure 5.3, the survey responses indicated that the leading EEE brands used were HP, Dell and Lenovo. Respondents highlighted the strong brand reputation and affordability as the main reasons for choosing HP and Dell equipment. Generally, most stakeholders across all EEE categories believed that performance varied by brand.

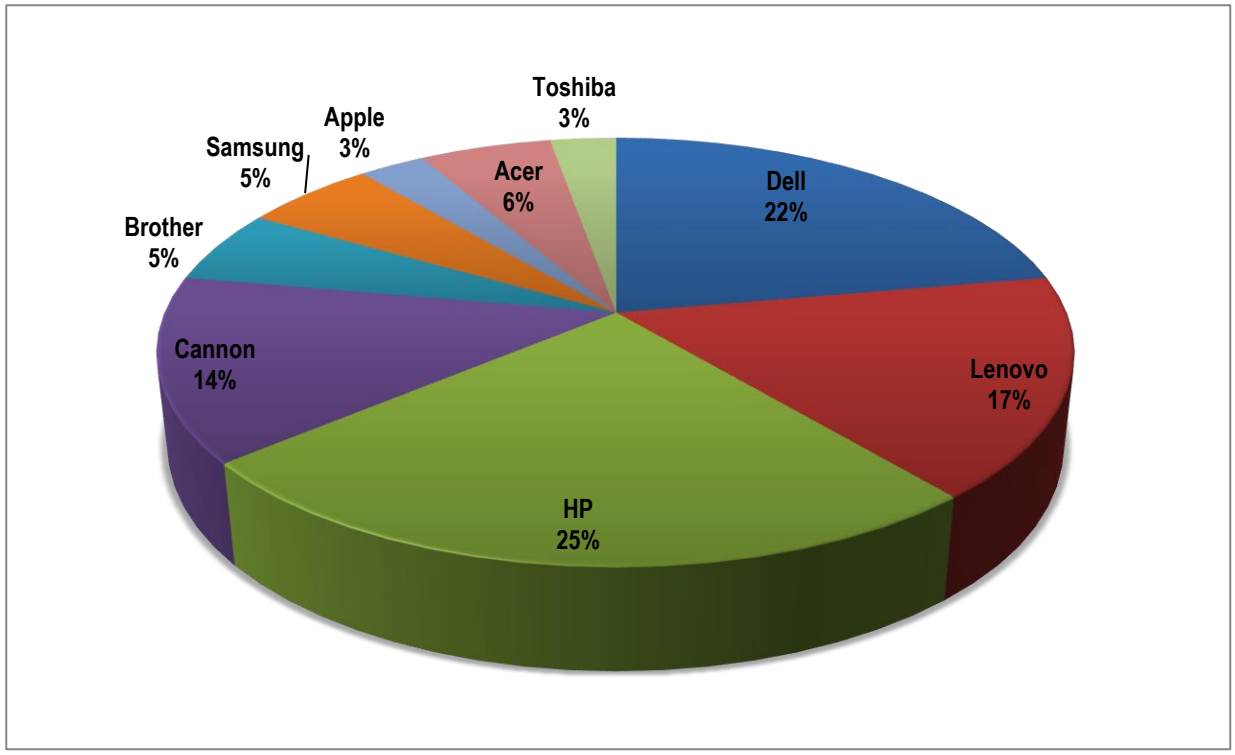

Figure 5-3: Major ICT brands used in Suriname

Distribution and retailing stakeholders across the board indicated that they get warranties on the items that they import but that whenever problems are encountered with EEE, re-exporting to the OEM is not practiced since it is a costly process. Based on the results, it was found that stakeholders provide their customers with a warranty period on their purchases and some stakeholders even have repair services available.

There were variations in the procurement of new stock among the stakeholder categories. While some indicated that their stocks are replenished approximately every month, others, mainly retailers, stated that stocktaking is done annually with procurement occurring every few months, while large consumers typically ordered on an-as-needed or project basis. Stakeholders in the medical equipment category import their stocks based on orders from their customers because medical equipment are expensive to keep in stock for a small number of consumers. For the most part, the items that are selected by distributers and retailers as well as large companies were based on customer preference.

From the information provided by the interviewed stakeholders, tablets, lights and small household appliances (SHHA) appear to have the shortest lifespans of the range of items highlighted during the surveys. This is demonstrated in Figure 5.4. Meanwhile, the longest lifespans belong to switches and photovoltaic (PV) equipment, namely solar panels. Generally, the lifespans of the majority of the categories were inferred

from the warranties provided by suppliers in the absence of consumer end information. It should be noted that experiences with EOL PV equipment were cited as not being broad thus the lifespan was based mainly on the specification and warranty from the manufacturers. Stakeholders also indicated that the average lifespan of equipment were dependent on the brand. It was further explained that in Suriname there are fluctuations in the voltage supply which is a major factor affecting the lifespan of EEE.

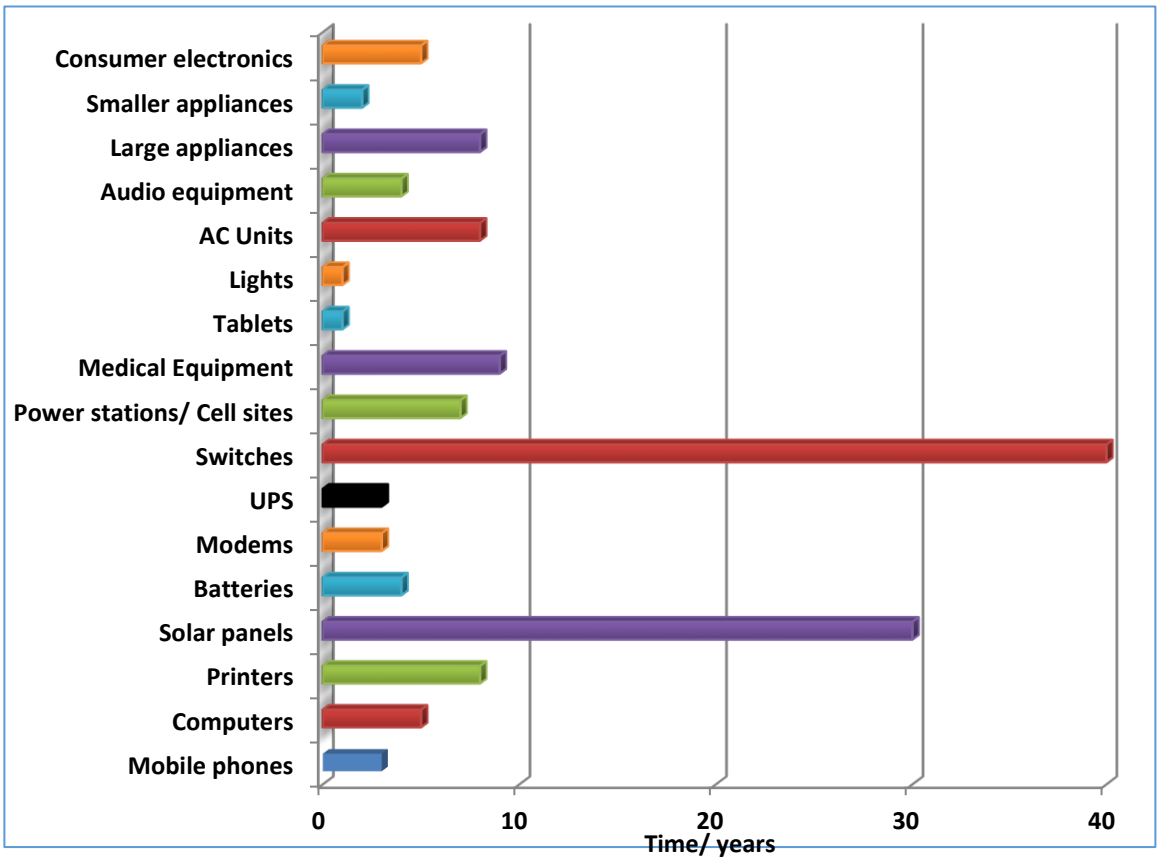

Figure 5-4: Average lifespans of EEE in Suriname

Telecommunication companies noticed that the average life span of a mobile device has been decreasing over the years due to consumers wanting new updated versions and not necessarily because the device is no longer functional. The stakeholders in the telecommunications sector highlighted that rapid advancement in technology and the releasing of new models are a major factor in determining the lifespan of these mobile devices.

Based on the stakeholder responses, it was found that organisations and institutions do not have any formal policy or procedure for dealing with e-waste. With respect to the EOL treatment of WEEE by the stakeholders, it would appear that very little EOL equipment ended up in the municipal waste stream (MSW). According to Figure 5.5, the majority of EOL equipment (50%) is stored by the stakeholders, followed by the option of repair. All of the remaining options were evenly distributed in third place. In some instances, the retention of

non-functional or EOL equipment was to facilitate the easy winning of parts, some kept them on due to internal procedures that must ensure proper delisting of such equipment, while others bemoaned the lack of final disposal options. Given the popularity of in-house storage, it would be profitable and logical to create a more formalized collection system to address these stored quantities on a larger scale. The results from the survey further highlighted that the informal salvagers / scrap collectors seem to play a major role in the collection of e-waste in Suriname since many stakeholders indicated that they give their waste to collectors/scrap dealers who pass infrequently.

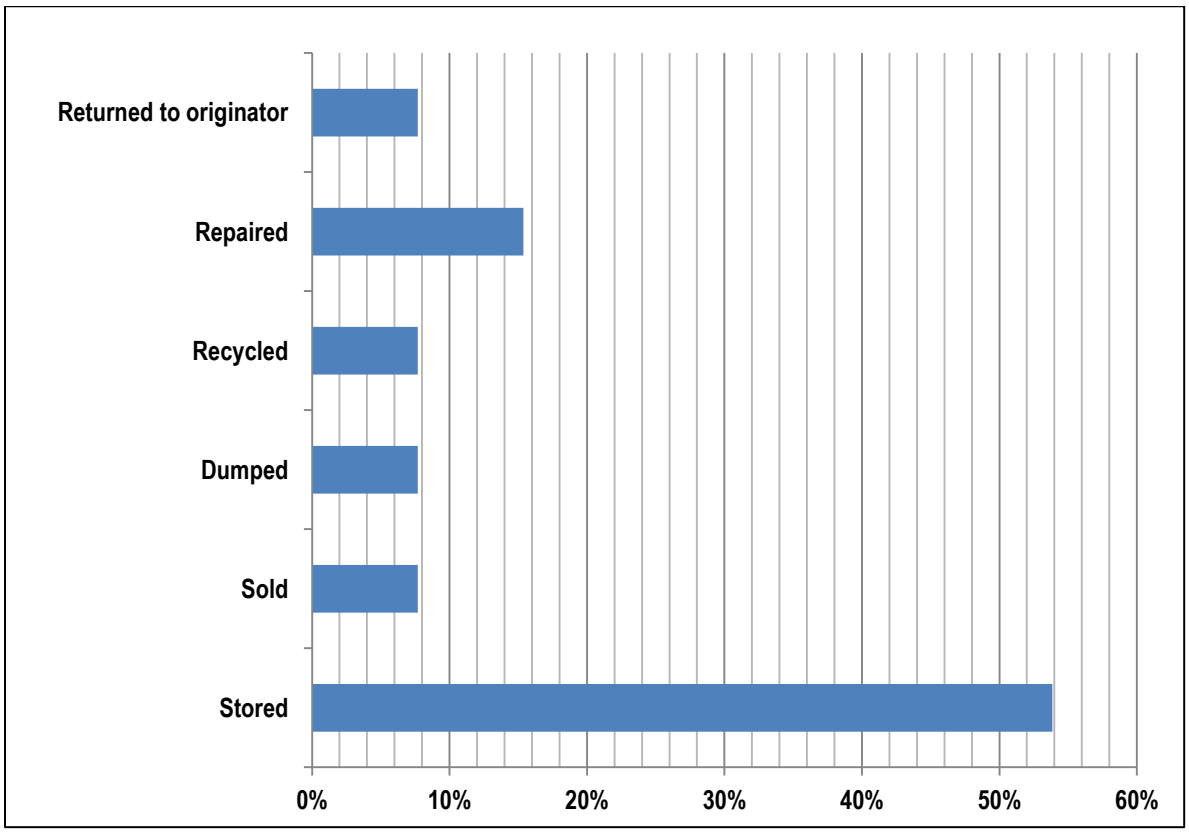

Figure 5-5: Methods of treatment of EoL equipment by consumers in Suriname

The survey responses highlighted records of equipment inventories are kept and are always updated. It was found that stakeholders managed data records electronically some utilised excel spreadsheets while others had specific software for equipment and data management. The stakeholder responses indicated that the updating of equipment inventories would usually be the responsibility of the IT department in large organisations whereas in small businesses the responsibility would fall upon the store manager or proprietor. The major regulator and enforcement agency of EEE in Suriname i.e. Ministry of Trade and Industry, highlighted that it is very difficult to track every piece of EEE that is imported and exported since they are usually placed under different names, thus their records may not provide a good representative of the quantities. Figure 5-6 below illustrate the type of information that is recorded by stakeholders when keeping inventories. According to Figure 5-6, all stakeholders ensure that quantities of EEE are recorded. All of the

other key information that is recorded are model numbers, source and supplier information and brand of the equipment.

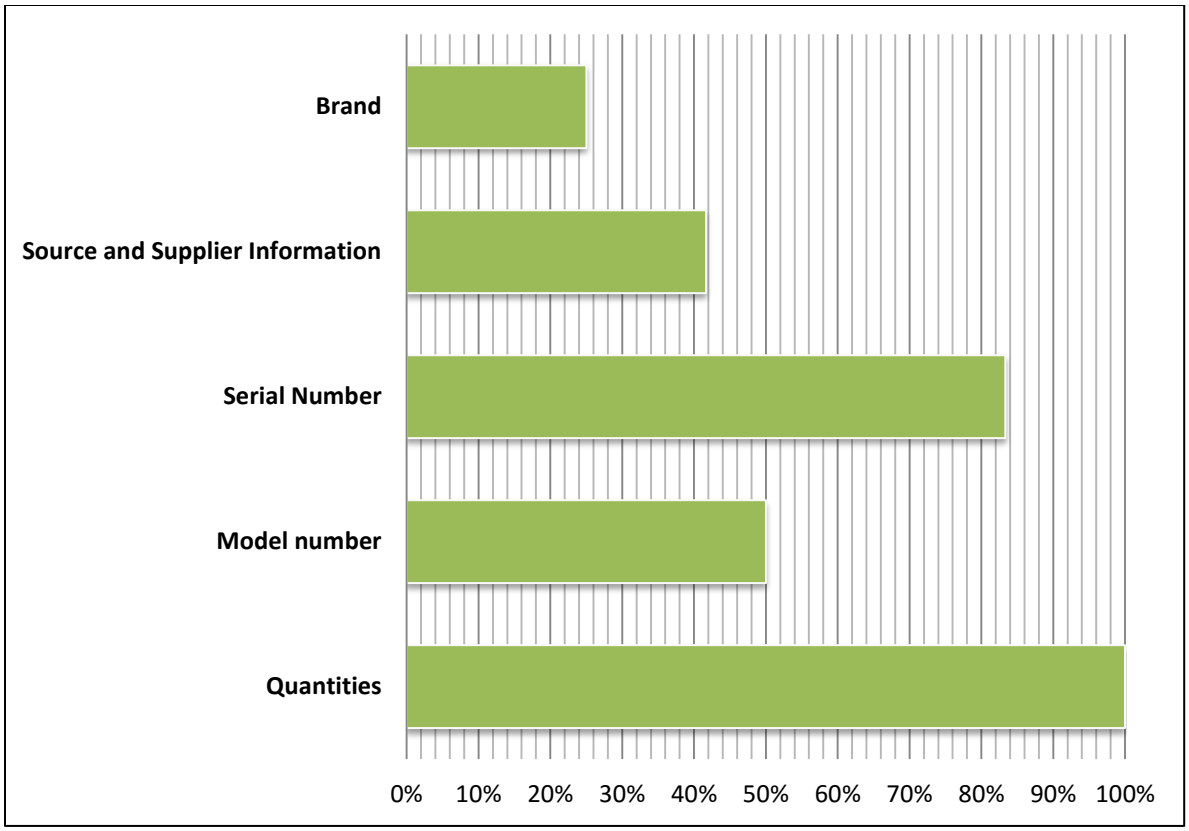

Figure 5-6: Type of data recorded by stakeholders when keeping inventories

5.3 WEEE Generation Snapshot

Figure 5-6 displays the expected (not projected) generation of WEEE for selected EEE items based on the corresponding WEEE accumulated in the country from imported EEE over the period 2007 to 2011. The year of generation was ascertained primarily from the responses provided by stakeholders on the average lifespan of the EEE items that they imported, distributed or used, as displayed in Figure 5-4 and elaborated in Section 4. Therefore, the time segments presented simply provides a snapshot of the WEEE arising in Suriname that will require management in the short- to medium-term and which will occur continuously over time and evolve based on the economic, technological and social drivers that influence EEE imports over time.

In Figure 5-6, the waste generated from the accumulated EEE items imported during the 2007-2011 period commenced from the year 2010 and can be expected to continue until the year 2021. From the generation snapshot, it can be seen that lighting and computing equipment, namely computers and laptops, of the WEEE stream pose the greatest concern to waste management in terms of volume as well as the speed at which it

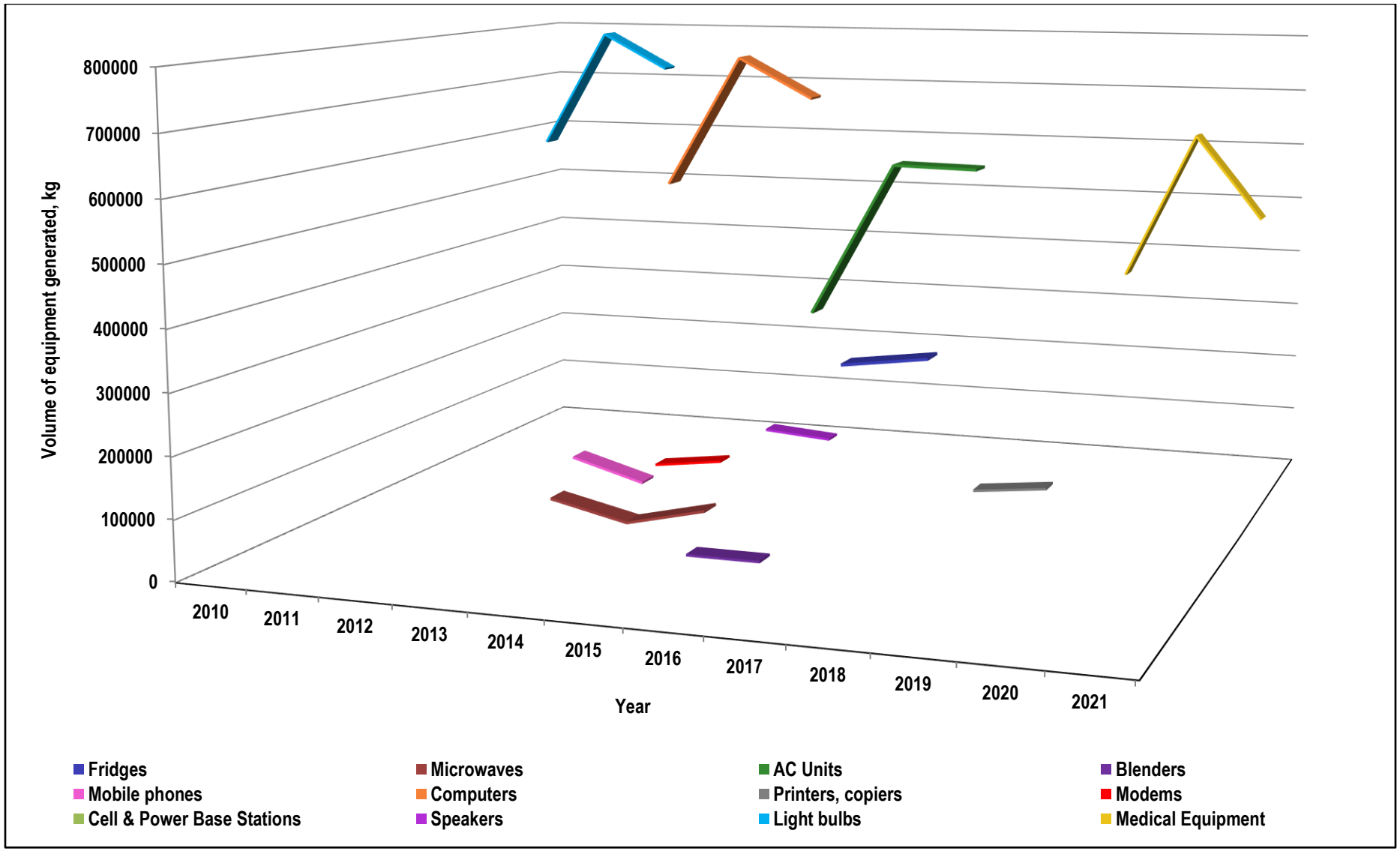

Figure 5-7: Expected generation of WEEE from accumulated EEE imported into the local system over the period 2007 to 2011

such waste is being generated. Further to this, the waste volumes expected to be generated from A/C units, medical equipment, microwaves and mobile phones must also be paid special attention during the 2010 to 2021 time frame.

5.4 Mass Flow Assessment

The mass flow assessment (MFA) presented in Figure 5-8 illustrates the generalised flow of all EEE throughout the life cycle within the Surinamese system. The main stages and processes within a product's lifecycle include:

- Importation by distributers, retailers and private entities;
- The sale of these items (with the exclusion of the private households), consumption and storage until they lose their functional usage, becoming used EEE (UEEE) and ultimately WEEE;
- The stage at which this used EEE (UEEE) is then converted to WEEE;
- UEEE/WEEE is then addressed through the options of landfilling, either through MSW collection or otherwise, open dumping and burning, and collection for resale on the scrap market, either directly by scrap dealers or indirectly by salvagers for resale to scrap dealers.
- Scrap dealers as well as informal salvagers are also processing UEEE/WEEE for sale on the international markets or to foreign entities purchasing scrap in Suriname.

The mass flow diagram is split into two different segments, with the first section illustrating the useful life of EEE and the other displaying the management of EEE when it is converted to UEEE or WEEE.

5.4.1 MFA Segment-Useful Life of EEE

As there is negligible manufacturing of EEE in Suriname, the predominant share of equipment enter through importation either directly from OEMs or indirectly from other international suppliers. As previously indicated, these imports amounted to a total of ***35,978,285 kilograms*** of EEE and their components entering Suriname over the 5-year period covered by this study. These pieces of EEE are brought into the country by local distributors, retailers and in some instances, companies and individuals for private or commercial use.

All imports must be cleared by the Customs Division while consumer electronics and electrical equipment destined for the local market are inspected by the Suriname Standard Bureau in order to ensure that labelling standards are met. Once these imports are cleared, they then either enter the consumption phase of the MFA or are placed for sale or kept as stock in storage. In some instances, pieces of equipment are not sold and remain as dead stock on the hands of the distributors or retailers. Most retailers indicated that they make concerted efforts to avoid having dead stock through the promotion of sales on non-purchased items while some will use such items as giveaways during in-store promotions. Once such measures have been exhausted, the dead stock may proceed directly to the WEEE management phase locally or be sent back to the international suppliers under warranty or through an established take-back, in accordance with parent company policies.

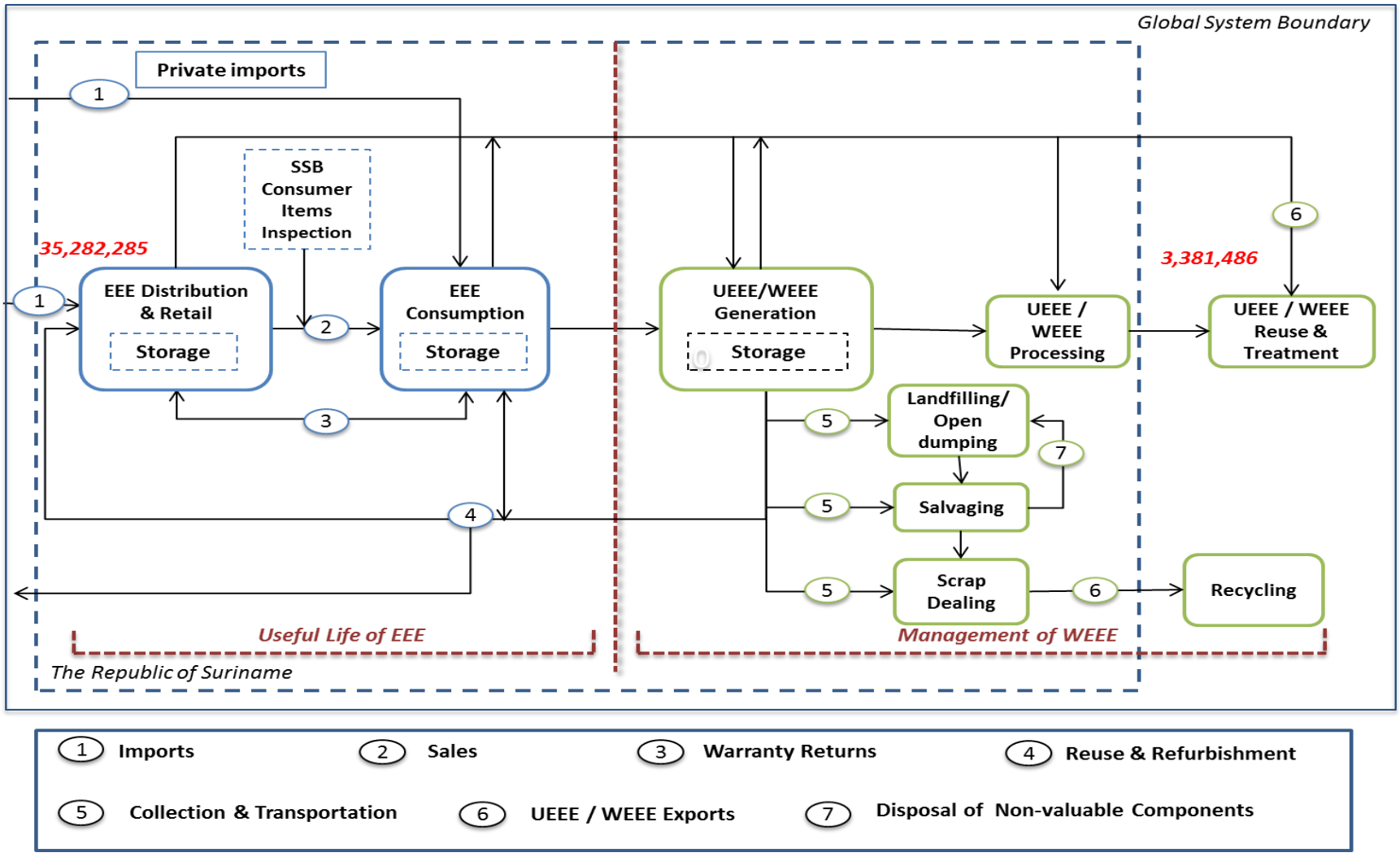

Figure 5-8: Mass Flow Assessment showing the generalised flows of EEE and WEEE through the Suriname

The consumption phase of the MFA is where the stakeholder base broadens to include private organisations, the public sector and private individuals and households. It is also where the private imports enter the local system. It is during the consumption phase that the use of EEE becomes diverse and complex, with multiple stakeholders using several items across the WEEE categories. With both local and international suppliers of several categories of WEEE offering warranty for defective equipment for limited periods of time, a small amount of the EEE being consumed may find its way back to these stakeholders.

Alternatively, EEE that is in use may be sent for repair or refurbishment should the need arise. Refurbished equipment may be returned to the consumer or even enter the retail and distribution phase once again. Once the equipment has been deemed non-functional or is no longer wanted, then the transition into the WEEE management phase begins. This phase also incorporates some level of storage by the consumer upon reaching to the end of its useful life and prior to any EOL processing and treatment, where applicable. As previously noted, this storage process is quite pervasive in the local context given the lack of sound, formalised options for the management of WEEE. Over the 5-year period a total of ***13,001 kilograms*** of EoL equipment were kept in storage by consumers in the private sector.

The lack of a formal collection system for WEEE has resulted in a high level of scrap dealing of EEE in Suriname. Figures from a local scrap dealer indicated that an estimated figure of ***20,000 kilograms*** of WEEE was collected for the period of 2007-2011.

It is interesting to note that the WEEE and EEE exported and re-exported to international suppliers and otherwise would be considered as a subset of the total export figure of ***3,381,486 kilograms***. However, it is difficult to ascertain from the trade data how much of the exported volumes are WEEE, UEEE being returned under warranty, repaired or refurbished EEE, or even new EEE being sent out to other markets. This shortcoming of the trade data is highlighted in the case of one major consumer of automatic dispensers. This stakeholder, which is part of an international chain, sometimes participates in an exchange of functional pieces of equipment with others in regional countries belonging to the chain. Therefore, there is a need for further clarification of the EEE/WEEE exports being observed in order to understand the nature of these connections within the system in order to effectively monitor and manage the UEEE and WEEE in the country, while ensuring national compliance with the Basel Convention.

5.4.2 MFA Segment-WEEE Management

5.4.2.1 Current Management Strategies

Upon reaching the end of its useful life, the EEE products then progress to the WEEE phase of the MFA, following which there may be several outcomes to treat with the WEEE generated. Firstly, the WEEE or UEEE may not be transferred immediately by stakeholders to the existing management options that are available but will be kept in storage for a period of time. As previously mentioned, this may be attributed to internal policies domesticated from international parent companies or that fall under environmental management certifications and also as a result of the time required in order to write certain pieces of equipment off of the books.

Because of the fact that there is no formalised collection and management system for e-waste in Suriname, stakeholders seeking to get rid of their UEEE/WEEE use other options available to them. For some companies, they may sell their UEEE/WEEE at a low cost to individual repairers and refurbishers who are looking for replacement parts in support of their businesses. Such a practice had been indicated by one mobile phone entity. Meanwhile, another company indicated that their phones are sometimes shipped to a repair centre in another country that is part of their international organisation. Other organisations may also ship their WEEE abroad due to security issues associated with their equipment given the fact that they do not dispose of any of their equipment locally. Prior to doing so however, this company would perform their own internal repairs using company technicians.

For the remaining UEEE and WEEE generated locally, the primary option available to stakeholders is final disposal by landfilling or, in some cases, open-dumping and burning. WEEE may sometimes enter the regular MSW channels and end up in the main landfills and dump sites. At these landfills and dump sites, the WEEE may or may not be segregated into a separate area of the site. Until the end of 2014, all of the large WEEE entering the Ornamibo dumpsite in district Wanica had been placed for years in a large hole on the site. Other popular dump sites for WEEE include abandoned mines on private land.

At the landfills and dump sites, WEEE may then be given another life through the work of salvagers operating at these sites. These individuals will actively pick the valuable metal components from the WEEE present on these sites for resale to scrap metal dealers. Furthermore, salvagers also operate outside of landfills and may actively go around communities and commercial operations in order to collect scrap for processing and resale to dealers.

With respect to the scrap dealers, some of these may receive UEEE/WEEE directly from the generators who may sell their stockpiles. One large consumer noted that this was done in the past with a container of unwanted equipment. These scrap dealers also purchase WEEE components directly from salvagers and other persons for brokering on the international scrap markets. In the case of the formally established dealers with registered businesses, one such stakeholder only purchased pre-specified metal components obtained from WEEE, including hard drives and printed circuit boards. They did not accept the whole item nor accepted any non-valuable parts. As a result, salvagers and other individuals would need to remove the non-valuable components and discard of them, further adding to the issue of improper disposal of plastic and glass components that would contain hazardous substances such as brominated flame retardants and glass.

An additional dimension at the scrap dealing stage of the WEEE management segment is the presence of foreign individuals purchasing scrap locally. This was noted in both Paramaribo and Nickerie, where scrap dealers and salvagers noted that Brazilian nationals were operating in these areas; sometimes specifying which items they wished to obtain. Local salvagers would meet with these individuals when they arrive via sea and sell their scrap to them. It was noted that these Brazilians would sometimes come as frequently as every two weeks to Nickerie in order to collect the scrap and return to their country by boat with these items. It was not possible to determine what happened to the scrap when it leaves Suriname. However, this would account for a loss of valuable materials that can add value within the local system and that would also remain unaccounted for under the official export documentation with such actions being equivalent to illegal trade.

5.4.2.2 Percentage Recovery

Using the trade statistics and data provided by interviewed stakeholders for the period of 2007-2014, an attempt was made to determine the level of possible recovery based on quantities of WEEE kept in storage by stakeholders for the various WEEE categories. Table 5-3 below presents the volumes imported and the quantities kept in storage and the possible percentage recovery using the quantities kept in storage. The data represented in the table was segregated into the different WEEE categories while the categories with no data were omitted from the table.

Table 5-3: Percentage of possible WEEE recovery in Suriname for the period 2007-2011

Category	Total Units Imported from Trade Data	Total Units Kept in Storage	Percentage of possible recovery of EEE in Suriname
IT & Telecommunication Equipment	3280,036	12,906	0.393%
Consumer Equipment	4420,770	95	0.002%
TOTAL	**7700,806**	**13,001**	**0.396%**

The highest possible recovery based on the analysis can be obtained from the IT & Telecommunications category. The consumer equipment category showed a very small recovery based on the data that was available. This indicates that consumer equipment is either disposed inappropriately due to a lack of awareness about proper disposal practices or kept in storage. The lack of local e-waste brokers and a national framework that mandates the collection of WEEE for processing are the main factors attributed to why stakeholders improperly dispose of their items or keep them in storage.

The large volumes of equipment in the IT and telecommunications category is due to the fact that computing equipment falls into this category. Since there is a high turn-over rate of computing equipment in industries, large private organisations and government ministries most of these organisations need to have disposal guidelines and standards that must be followed. This is the main reason why these items are kept in storage since there are no proper disposal options available in Suriname.

5.4.3 System Management

The stages and processes that exist and interact within both segments of the MFA, that is the EEE useful life and WEEE management segments, are generally regulated by different national regulatory and institutional frameworks. These frameworks are not all-encompassing and mainly address the needs of a specific sector and not the particular issue of the life cycle management of EEE. However, some actors have been identified as having a role to play in this respect and are as follows:

- The Ministry of Trade and Industry (MTI);
- The Inspectorate of Customs and Excise (Customs Suriname);
- The Bauxite Institute of Suriname;

- The Suriname Standards Bureau (SSB);
- The Ministry of Public Works; and
- The Office of the President of the Republic of Suriname, specifically the Bureau for National Security charged with the Coordination for Environmental Policy.

The former Directorate for Environment in the Ministry of Labour, Technological Development and Environment (ATM) had a role at the initiation and execution period of the project. However, since March 2015 this ministry was restructured and the Directorate fro Environment now resides in the Office of the Cabinet of the President. The imports and exports of EEE and UEEE/WEEE are generally monitored and regulated by the MTI and its respective departments as well as by Customs Suriname, which falls under the Ministry of Finance. The MTI is responsible for the promotion of domestic and foreign trade, including import and export policies, and granting import and export licenses, in cooperation with the relevant Ministries (MTI, n.d.). Customs Suriname verifies the correct application of import duties, export and transit of goods, and is responsible for facilitating the trade and movement of cross-border goods while protecting government revenue (Ministry of Finance, n.d.).

The MTI has highlighted that while Suriname does have a negative list there are no electrical products on the list. Only if an item is viewed as a danger to the state, health and the environment then it will be added to the negative list. However, this is a lengthy process and the Ministry must also work alongside the relevant technical Ministry or Ministries in this respect. Furthermore, the MTI has no control over the scrap metal industry since 2006 when controls on trade in these materials were removed.

At present, the Bauxite Institute of Suriname has a mandate to check the exports of scrap metals and international metal prices, including for Iron, Aluminium and Copper scraps, used lead acid batteries (ULABs) and other related scraps such as printed circuit boards (PCBs). Traditionally established to regulate the bauxite industry, the Bauxite Institute inspects shipments, materials and related documents, grants the necessary approvals and certifications, verifies prices and advises on the correct taxes to be levied on the associated shipments. It also advises the MTI when trading in such materials is going to happen. With reference to the PCBs, the Institute noted that it simply looks at the materials to confirm that it is a circuit board and nothing more. However, the Bauxite Institute did note that it can facilitate a greater role in the inspection of e-waste components at the national level given their current involvement in monitoring the scrap metal trade.

The Suriname Standard Bureau is Suriname's national institute of standards and fulfils a facilitating role in the field of standards management. It establishes, adopts, maintains and promotes the use of standards and technical regulations that must lead to an adequate standards infrastructure to stimulate socio- economic activities and to protect the health and safety of human, animal and plant life as well as the environment in which they live. Currently, the SSB has no regulations or standards that cover any EEE. There is only a labelling standards which the organisation enforces through the inspection of labels on the packaging of consumer electronics and similar items, which ensures that the labels must be in Dutch or English.

With respect to the management of WEEE, this would fall under the purview of the primary agencies with responsibility for the management of wastes as well as the environment. At the time of this work, these

entities are mainly the Ministry of Public Works, which has the responsibility for waste collection and management, and ATM, which was the environmental management mandate. It has been indicated that there is no official solid waste management bill in the country, although one has been drafted and debated in Parliament. The NIMOS in collaboration with the obsolete ATM has also prepared an environmental framework law, which is also still under review by the Government. In both instances, the issue of e-waste and e-waste management has not been adequately addressed nor do they include national definitions and classification of these items.

Other actors in the local system have been identified as having the potential to ultimately influence the management of WEEE in Suriname, either directly or indirectly. For example, the Telecommunications Authority of Suriname (TAS), which is the primary policy-making and regulatory body for the ICT sector, can consider the downstream implications of the development of the ICT sector during the execution of its functions and during policy development. It can also facilitate the promotion of awareness among key ICT stakeholders at the national level and encourage the development of corporate social responsibility (CSR) initiatives among these entities in this respect.

The Ministry of Regional Development is another entity that has a role in the management of wastes in Suriname. The Ministry focuses on waste collection in the districts outside of Paramaribo and would also manage the smaller landfills of these areas. It was noted that while it currently does not intentionally collect WEEE and dispose of them, it is cognisant of its role in this respect and is willing to grow into this role to support the collection and management of WEEE in the districts. Also, the National Institute for Environment and Development in Suriname (NIMOS) may also have a future role in the management of WEEE given its intricate responsibility for environmental management in the country.

5.5 Data Management and Awareness

For the most part, data record and management for WEEE was very basic, if present at all, among the stakeholders interviewed. Those who did possess an inventory of their WEEE did so in simple Excel spreadsheets and/or manual data log sheets. This would include information on the type of waste, the number of units and the date or year of storage. However, more detailed records of EEE stocks were noted among the stakeholders.

For the retailers and distributors, records of stock items are generally entered into a computerised database developed for maintaining stock inventories, with details of quantities, brand, model, location and so on being kept. In the case of the large consumers, procured EEE and similar data related to brand, model, quantities, supplier, location, and so on are recorded. Such data management would typically be segregated according to the type of EEE being managed and their importance with respect to the operations of the organisations. For example, records for IT and telecommunications equipment were typically developed and maintained by IT departments and technicians. On the other hand, EEE directly used to support the operations of a company would be either managed by an appropriate operations division and/or the respective procurement departments.

Generally, from the results from the questionnaires as well as from the interactions with the stakeholders during interviews and site visits, it was clearly stated that the majority of stakeholders are not aware of the

dangers that are posed by the improper management of WEEE. This status can be extrapolated to the wider public in general and is also true for knowledge of what are the proper management and treatment methods of WEEE. All stakeholders noted the importance of greater awareness among the general public on the issue as well as the need for the dissemination of more information on the subject nationally.

6 RECOMMENDATIONS AND NATIONAL STRATEGY FOR THE ESM OF WEEE IN SURINAME

Given the present state of WEEE management in Suriname coupled with the typical life cycle of EEE in the country as presented in Chapter 5.0, there are indeed significant gaps that must be addressed in order to ensure that the environmentally sound management of WEEE is achieved. This Chapter outlines some of the actions that, once applied, would not only improve in-country WEEE management, but can also facilitate the sound development of this sector.

6.1 Education and Awareness

As identified in Section 5.4, the present knowledge and understanding of the impacts of WEEE and improper management are extremely limited among all of the stakeholders engaged throughout the life cycle of EEE. Therefore, it is imperative that any future actions to enhance the ESM of WEEE in Suriname must be based on a well-developed awareness and public education campaign. Such a campaign can initially target key stakeholders involved in the life cycle management of EEE and WEEE followed by a broader public awareness campaign.

The education drive can be facilitated through the use of mixed media and fora, including the holding of sensitisation sessions on-site and workshops with the key stakeholder groups and the development and circulation of paper-based and audio-visual materials among these groups. Such materials and sessions should focus on how existing actions can be enhanced and how the various stakeholders can promote ESM practices in addition to the implications of WEEE and its management. Meanwhile, sector specific WEEE workshops can be held for important agencies such as the Suriname Customs, the Ministry of Trade and Industry, the Telecommunications Authority of Suriname, the Suriname Standards Bureau and others in order to facilitate information exchange and greater understanding of the local scenario and their roles in the management framework, leading to the development of measures to address some of the key issues affecting the stages and processes of the EEE life cycle and WEEE management.

Targeted awareness sessions at schools and research institutions can also constitute a part of this national awareness strategy to sensitize the public on the dangers and promote greater collection and the ESM of WEEE. Such work can also consist of the use of competitions and community-based initiatives to allow members of the general public to contribute to the sound collection and storage of WEEE where it does not currently exist.

6.2 Regulatory Development and Institutional Strengthening

There is no legislation specific to the management of WEEE currently enacted in Suriname. As a result, this is a critical priority in order to support the development of ESM of WEEE in the country. This can be facilitated in the context of broader waste or environmental management legislation that is yet to become a reality in the country. Appropriate regulations and standards can be develop under such a law to support the monitoring of and improvement in existing collection and storage practices as well as in the EOL treatment

of EEE. The Suriname Standards Bureau can also facilitate the development of standards to support the life cycle management of EEE and the ESM of WEEE.

Any legislation or regulations that are to be developed in support of environmentally sound WEEE management will also facilitate in solidifying the national definition for and classification of WEEE. Such a definition is a necessity for ensuring that all stakeholders possess a common understanding of the concept of WEEE and what would constitute the waste stream. Such legislation would also ensure that the proper management of WEEE is well characterised and understood by all in order to ensure ESM.

Along with the development of an appropriate legal framework to support the ESM of WEEE, the establishment of a national coordinating body comprising of membership from the various stakeholder groups with roles throughout the life cycle management of EEE should be done in the early stages. This coordinating body can facilitate the holistic development of a national system and strategy to support the ESM of WEEE in Suriname. All activities outlined in this chapter can be promoted and facilitated through such a body, to ensure that a complete life cycle approach to the management of WEEE is achieved.

Furthermore, this coordinating body can ensure that the duplication of work is avoided among the key regulatory stakeholders and can lead to greater information and experience sharing. This is necessary from a monitoring and enforcement perspective, particularly in light of the trade in scrap metals and WEEE and the illegal trade being conducted by foreign entities as previously identified. Therefore, a way forward to deal with this issue and the loss of resources can be addressed under this body.

This body can also facilitate enhanced recording and records management of EEE and WEEE at the national level in general. It can take stock of the data and information that is already being compiled by the different stakeholders and a national mechanism to support data capture as well as decision making and monitoring can be further devised.

6.3 Promoting Environmentally Sound Management Practices for WEEE

6.3.1 Collection and Storage

The development of formalised collection systems for WEEE is another important recommendation arising out of this project work. The issue of stored volumes being a significant means of EOL management of EEE would be reduced should better collection and disposed options become available to stakeholders.

A collection system can be devised in order to address both commercial and household WEEE. In the case of the households, secure community-based collection points may facilitate the intermittent collection of WEEE. However, a full household survey would need to be performed in advance of the establishment of such a point to understand the specific WEEE needs to be met in the various communities. The promotion of proper interim storage by larger consumers as well as the establishment of appropriate transfer stations to accommodate the sound storage of WEEE in the various districts across the country.

With respect to Government institutions, a public sector initiative to collect current stockpiles of WEEE resident in their buildings may be a necessity and can be done on a project basis in partnership with private

sector individuals. Added to this, an internal government policy or standard on green procurement as well as on EOL management of EEE can be developed and implemented by the Government sector.

Furthermore, a supporting facility or capacity development mechanism to improve the practices of those private collectors, salvagers and scrap dealers currently collecting WEEE and components from private companies can be developed. This can be done with the oversight of the national coordinating body on WEEE management as previously elaborated. It can ensure that an ESM culture is promoted among these stakeholders while allowing them to continue to benefit off of the system. This will also assist in addressing the implications of existing practices that result in the mismanagement of hazardous components of WEEE while the precious materials are stripped.

6.3.2 The Role of the ICT Sector and Promotion of Take-back Systems

The role of the ICT sector in facilitating the collection of WEEE can be further developed in future. Given the recent shift of the local telecommunications networks to 3G/4G, the expansion of these networks and greater penetration being demonstrated by the local population, the importers, distributors and retailers of ICT-related equipment should facilitate the channelling of WEEE generated in this regard to the ESM facilities. This can be done through the development and roll-out of formal take-back programmes among these entities.

Some ICT stakeholders already offer take-back opportunities for their clients in the form of infrequent or seasonal promotions to allow the trade in of old equipment and support transitioning to newer ones. An example of such an initiative was demonstrated by one such telecoms stakeholder that was considering the implementation of a take-back programme in interior communities to facilitate the trade-in and collection of old mobile phones for new 4G handsets. Therefore, the inherent propensity for the telecommunications entities as well as other distributors and retailers to improve the collection of key WEEE categories of computing equipment and mobile devices should be considered and developed where possible.

However, the development of such programmes will need to be supported by the availability of ESM options for the treatment of WEEE. This topic is further addressed in Section 6.3.3.

6.3.3 Opportunities for Advanced WEEE Treatment and Private Sector Investment

At present, there are no ESM options available in country for the treatment of WEEE. Any dismantling performed is being done informally in order to obtain the valuable metals contained in WEEE. This results in the manifestation of poor WEEE management practices that are unsafe and ultimately affect environmental and human health given the improper disposal of the non-valuable and hazardous components that take place. Consequently, there is a scope for the establishment of a dismantling facility in the country. This is not only necessary to support the scrap trade, which is focused solely on the valuable metals and metal-containing components, but to also ensure the environmentally sound disposal of the hazardous components. This is especially critical in the case of the key EEE of concern highlighted in Figure 5.6, lighting equipment, computing equipment and medical equipment, which all contain a number of hazardous substances including mercury, cadmium and lead.

Currently, there is a number of stored WEEE existing in Suriname. In addition, as the economy and ICT sector continues to grow, there may be increased flows into the country and generated volumes of WEEE.

Furthermore, with improved data recording and analysis among a broader pool of stakeholders, the volumes may be more than what has been identified here. Altogether, these volumes can be fed directly by the various stakeholders into a dismantling facility that can act as an intermediary between the useful life and end of life segments of the local EEE/WEEE system.

Such a facility can either be a private or publicly established one. It can also be formed through a formal cooperation of salvagers and dealers operating in the local system with the requisite government support to ensure that the operations of the facility are environmentally sound and sustainable for those involved. The focus of this dismantling facility can initially be on the more profitable and widely available WEEE, including computing equipment and mobile phones, and allow for the WEEE of the generating stakeholders, including the outputs of any take-back programmes, to be addressed by these entities. This initial scope can then be broadened in the future as the WEEE stream evolves and additional opportunities arise.

Given Suriname's history in the mining and refining/processing of gold and bauxite/alumina, a significant potential exists for the development of a facility to support the recovery of precious metals present in WEEE. Suriname already possesses a suitable workforce with the technical capabilities as well as related institutions, which have been developed through the nation's industrial mining sector with the support of the multinational companies that have invested in the country. It must be acknowledged that the country's present WEEE volumes and composition alone will not be sufficient to support the investment required for such a facility. However, Suriname's location on the South American continent, its proximity to the Caribbean and its centralised position in relation to the rest of the Americas means that such a facility can easily develop its re-refining business within the Americas.

With countries such as Argentina, Brazil, Chile, Colombia and Peru already progressing with respect to the development of systems for the collection and treatment of WEEE, and with the range of WEEE management activities occurring throughout the region, the flows of material containing precious metals within the Latin American and Caribbean region are expected to increase over time. Furthermore, Suriname's participation in the Union of South American Nations (MERCASUR) and the Caribbean Community (CARICOM) as well as its trading ties with the Guianas and developed countries through the mining sector can further bolster such an initiative to serve as the regional hub for the re-refining of precious metals in WEEE components. The country also has the requisite land space to support such a facility and is experiencing constant improvements in its energy supply as well as developments in the oil industry, which, altogether, provides an environment in which such an investment may be worthwhile. Moreover, the establishment of a formal means to support the recovery of gold and other precious metals in Suriname will result in job creation opportunities and potentially support the development of associated downstream industries.

6.4 National Strategy and Way Forward

It is imperative that a national strategy for the ESM of WEEE is fully fleshed out in advance of the development and execution of any activities to address the issue. Such a strategy may be based on the recommendations contained within this report, which may be further developed by the action plan to be implemented under this

strategy. Such a strategy can be drafted under a national WEEE coordinating body, as previously mentioned, and then executed either collectively by this body or by the various participating entities with singular or collective responsibility for different activities. More importantly, such a strategy should be done with consideration being given to the roles of the different stakeholders as identified by this assessment, and with these stakeholders being able to possess ownership of some of the action items by their direct participation in these activities once implementation begins.

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ANNEX I: LIST OF HS CODES

Large Household Appliances

Category	HS Code	HS Description
1. Large Household Appliances	8415.10.00	AC machines - Windows or wall types, self-contained or "split-system"
	8415.81.00	AC machines Incorporating a refrigerating unit and a valve for reversal of the cooling/heat cycle (reversible heat pumps)
	8415.82.00	Other AC machines, incorporating a refrigerating unit
	8415.83.00	AC machines Not incorporating a refrigerating unit
	8415.90.00	Parts of AC machines
	8418.21.00	**HH, compression type (includes 8418.21.30 which is non-electrical)**
	8418.21.10	HH refrigerators, compression type, frost free, electrical
	8418.21.20	HH refrigerators, compression type, other, electrical
	8418.29.10	Other refrigerators, electrical
	8418.30.00	Freezers of the chest type, not exceeding 800 litre capacity
	8418.40.00	Freezers of the upright type, not exceeding 900 litre capacity
	8418.50.00	Other furniture for storage and display, incorporating refrigerating or freezing equipment; Other refrigerating or freezing equipment; heat pumps
	8418.61.00	Heat pumps other than air conditioning machines of heading 84.15
	8418.69.00	Other refrigerating or freezing equipment
	8418.99.00	Parts of refrigerating or freezing equipment
	8421.12.10	Clothes dryers for domestic use
	8421.91.10	Parts for the clothes-dryers of subheading 8421.12.10
	8422.11.00	Dish washing machines of the household type

	8450.11.10	HH or laundry-type, fully-automatic washing machines for domestic use
	8450.12.10	Other machines, with built-in centrifugal drier for domestic use
	8450.19.10	Other machines for domestic use
	8450.20.10	Machines, each of a dry linen capacity exceeding 10kg for domestic use
	8450.90.00	Parts
	8516.10.00	Electric instantaneous or storage water heaters and immersion heaters
	8516.21.00	Storage heating radiators
	8516.50.00	Microwave ovens
	8516.60.00	Other ovens; cookers, cooking plates, boiling rings, grillers and roasters
	8516.60.90	Other ovens; cookers, cooking plates, boiling rings, grillers and roasters

Small Household Appliances

Category	HS Code	HS Description
2. Small Household Appliances	8508.11.00	Vacuum cleaners with self-contained electric motor of a power not exceeding 1500W and having a dust bag or other receptacle capacity not exceeding 20L
	8508.19.00	Other vacuum cleaners with self-contained motor
	8508.60.00	Other vacuum cleaners
	8508.70.00	Parts for vacuum cleans
	8509.40.00	**Food grinders and mixers; fruit or vegetable extractors**
	8509.40.10	Food grinders and mixers; fruit or vegetable extractors
	8509.40.20	Food grinders and mixers; fruit or vegetable extractors
	8509.80.00	Other appliances
	8509.80.10	Blenders
	8509.80.20	Floor polishers
	8509.80.30	Kitchen waste disposers
	8509.80.90	Other electro-mechanical domestic appliances with self-contained electric motor
	8509.90.00	Parts for above
	85.10.00	Shavers, hair clippers and hair removing appliances, with self-contained electric motor
	8510.10.00	Shavers
	8512.20.00	Hair clippers
	8510.30.00	Hair-removing appliances
	8510.90.00	Parts for above

	8516.31.00	Hair dryers
	8516.40.00	Electric smoothing irons
	8516.71.00	Coffee or tea makers
	8516.72.00	Toasters
	8516.79.00	Other electro-thermic appliances
	8452.10.00	Sewing machines of the HH type
	9101.11.00	Wrist watches, eletrically operated with mechanical display only
	9101.19.00	Other electrically operated wrist watches
	9101.21.00	Wrist watches with automatic winding
	9101.29.00	Other wrist watches with a case of precious metal
	9101.91.00	Other pocket watches and other watches battery or accumulator powered & with a case of precious metal
	9101.99.00	Other pocket watches and other watches with a case of precious metal
	9102.11.00	Wrist-watches, pocket-watches and other watches, including stop-watches, other than those of heading 91.01: Other wrist watches, electrically operated with mechanical display only
	9102.12.00	With opto-electronic display only
	9102.19.00	Other electrically operated wrist watches
	9102.21.00	Other wrist watches with automatic winding
	9102.29.00	Other
	9102.91.00	Other pocket watches and other watches battery or accumulator powered
	9102.99.00	Other pocket watches and other watches
	9103.10.00	Clocks with watch movements, excluding clocks of heading 9104.00.00, electrically operated
	9103.90.00	Other clocks with watch movements, excluding clocks of heading 9104.00.00

	9105.11.00	Alarm clocks, electrically operated
	9105.19.00	Other alarm clocks
	9105.21.00	Electrically operated wall clocks
	9105.29.00	Other electrically operated wall clocks
	9105.91.00	Other clocks, battery, accumulator or mains powered
	9105.99.00	Other clocks
	9106.10.00	Time-registers; time recorders
	9106.90.00	Other time of day recording apparatus
	9107.00.00	Time switches with clock or watch movement or with synchronous motor
	9108.11.00	Watch movements with mechanical display only or with a device to which a mechanical display can be incorporated
	9108.12.00	Watch movements with opto-electronic display only
	9108.19.00	Other electrically operated watch movements
	9108.20.00	With automatic winding
	9108.90.00	With hand winding only
	9109.11.00	Electrically operated clock movements of alarm clocks
	9109.19.00	Other electrically operated clock movements
	9109.90.00	Other
	9110.11.00	Complete watch movements, unassembled or partly assembled (moving parts)
	9110.12.00	Incomplete watch movements, assembled
	9110.19.00	Rough watch movements
	9110.90.00	Rough clock movements
	9114.10.00	Clock or watch springs, including hair springs

	9114.30.00	Dials
	9114.40.00	Plates and bridges
	9114.90.10	Other clock parts
	9114.90.20	Other watch parts

IT & Telecommunication

Category	HS Code	HS Description
3. IT & Telecommunication	8443.12.00	Offset printing machinery, sheet fed, office type (using sheet with one type and not exceeding 22 cm and the other side not exceeding 36 cm in the unfolded state)
	8443.13.00	Other offset printing machinery
	8443.14.00	Letterpress office printing machinery, reel fed, excluding flexological printing
	8443.15.00	Letterpress office printing machinery, reel fed, excluding flexological printing
	8443.16.00	Flexographic printing machinery
	8443.17.00	Gravure printing machinery
	8443.19.00	Other
	8443.31.00	Other printers, copying machines and facsmile….. Etc
	8443.32.00	Other capable of connecting to an automatic data processing machine or to a network
	8443.39.00	Other
	8443.91.00	Parts and accessories: Parts and accessories of printing machinery used for printing by means of plates, cylinders and other printing components of heading84.42
	8443.99.00	Other
	8469.00.00	Typewriters other than printers of heading 84.43; word processing machines
	8470.10.00	Electronic calculators capable of operation without an external power source of electric power and pocket-size data recording, reproducing and displaying machines and calculating functions
	8470.21.00	Other electronic calculating machines: Incorporating a printer device
	8470.29.00	Other

	8471.30.00	Portable automatic data processing machines, weighing no more than 10 kg, consisting of at least a central processing unit, a keyboard and a display. Other automatic data processing machines:
	8471.41.00	Comprising in the same housing at least a central Processing unit and an input unit
	8471.49.00	Other, presented in the form of systems
	8471.50.00	Processing units other than those of sub-heading
	8471.60.00	Input or output units, whether or not containing storage units in the same housing
	8471.70.00	Storage units
	8471.80.00	Other units of automatic data processing machines
	8471.90.00	Other
	8517.11.00	Telephone sets including telephones for cellular networks or for other wireless networks: Line telephone sets with cordless handsets
	8517.12.90	Other
	8517.18.00	Other
	8517.61.00	Other apparatus for transmission or reception of voice, images or other data, including apparatus for communication in a wired or wireless network (such as a local or wide area network): Base stations
	8517.62.00	Machines for the reception, conversion and transmission or regeneration of voice, images or other data, including switching and routing apparatus
	8517.69.00	Other
	8517.70.00	Parts
	8519.50.00	Telephone answering machines

Consumer Equipment

Category	HS Code	HS Description
4. Consumer Equipment	8518.10.00	Microphones and stands therefore Loudspeakers, whether or not mounted in their enclosures:
	8518.21.00	Single loudspeakers, mounted in their enclosures.
	8518.22.00	Loudspeakers, whether or not mounted in their enclosures Multiple loudspeakers, mounted in the same enclosure
	8518.29.00	Other
	8518.30.00	Headphones and earphones, whether or not combined with a microphone, and sets consisting of a microphone and one or more loudspeakers
	8518.40.00	Audio-frequency electric amplifiers
	8518.50.00	Electric sound amplifier sets
	8518.90.00	Parts
	8519.20.00	Apparatus operated by coins, banknotes, bank cards, tokens or by other means of payment
	8519.20.10	Coin- or disc-operated record-player
	8519.20.90	Other
	8519.30.00	Turntables (record-decks)
	8519.81.00	Other apparatus: Using magnetic, optical or semiconductor media:
	8519.81.10	Transcribing machines
	8519.81.20	Pocket-size cassette-players
	8519.81.30	Dictating machines not capable of operating without an external power source
	8519.81.40	Other magnetic tape recorders incorporating sound reproducing apparatus

	8519.81.90	Other
	8519.89.00	Other
	8521.10.00	Magnetic tape-type
	8521.90.00	Other
	8522.10.00	Pick-up cartridges
	8522.90.00	Other
	8523.21.00	**Magnetic media: Cards incorporating a magnetic stripe:**
	8523.21.10	Unrecorded
	8523.21.90	Recorded
	8523.29.00	Other:
	8523.29.10	Unrecorded audio tapes
	8523.29.20	Recorded audio tapes
	8523.29.30	Unrecorded video tapes
	8523.29.40	Recorded video tapes
	8523.29.50	Unrecorded magnetic discs
	8523.29.60	Magnetic tapes for reproducing phenomena other than sound or image
	8523.29.70	Diskettes
	8523.29.90	Other
	8523.40.10	Dics for laser reading system for reproducing phenomena other than sound or image
	8523.40.20	Discs for laser reading system for reproducing phenomena other than sound only
	8523.40.30	Other discs for laser reading system
	8523.40.40	Audio compact discs

	8523.40.50	Other compact discs
	8523.40.60	Unrecorded Audio compact discs DVD's
	8523.40.70	Recorded DVD's
	8523.40.90	Other
	8525.50.00	Transmission apparatus
	8525.60.00	Transmission apparatus incorporating reception apparatus
	8525.80.00	Television cameras, digital cameras and video camera recorder
	8526.10.00	Radar apparatus
	8526.91.00	Radio navigational aid apparatus
	8526.92.00	Radio remote control apparatus
	8527.12.00	Radio-broadcast receivers capable of operating without an external source of power: Pocket-size radio cassette-players
	8527.13.00	Other apparatus combined with sound recording or reproducing apparatus
	8527.19.00	Other
	8527.21.00	Radio-broadcast receivers not capable of operating without an external source of power, of a kind used in motor vehicles: Combined with sound recording or reproducing apparatus
	8527.29.00	Other
	8527.91.00	Combined with sound recording or reproducing apparatus
	8527.92.00	Not combined with sound recording or reproducing apparatus but combined with a clock
	8527.99.00	Other
	8528.41.00	Cathode-ray tube monitors: Of a kind solely or principally used in an automatic data processing system of heading 84.71
	8528.49.00	Other

	8528.51.10	Of a kind solely or principally used in an automatic data processing system of heading 84.71
	8528.59.90	Monitors incorporating television reception apparatus
	8528.61.00	Projectors: Of a kind solely or principally used in an automatic data processing system of heading 84.71
	8528.69.00	Other
	8528.71.00	Reception apparatus for television, whether or not incorporating radio-broadcast receivers or sound or video recording or reproducing apparatus: Not designed to incorporate a video display or Screen
	8528.72.00	Other, colour
	8528.73.00	Other, black and white or other monochrome
	8540.11.00	Cathode-ray television picture tubes, including video monitor cathode-ray tubes: Colour
	8540.12.00	Cathode-ray television picture tubes, including video monitor cathode-ray tubes: Black and white or other monochrome
	8540.20.00	Television camera tubes; image converters and intensifiers; other photo-cathode tubes
	8540.40.00	Data/graphic display tubes, colour, with a phosphor dot screen pitch smaller than 0.4 mm
	8540.50.00	Data/graphic display tubes, black and white or other monochrome
	8540.60.00	Other cathode-ray tubes
	8540.81.00	Receiver or amplifier valves and tubes
	8540.89.00	Other
	8540.91.00	Parts: Of cathode-ray tubes
	8540.99.00	Parts: Other
	8541.40.00	Photosensitive semiconductor devices, including photovoltaic cells whether or not assembled in modules or made up into panels; light emitting diodes

	9201.10.00	Upright pianos
	9201.20.00	Grand pianos
	9201.90.00	Other
	9202.10.00	Played with a bow
	9202.90.00	Other
	9205.10.00	Brass-wind instruments
	9205.90.00	**Other:**
	9205.90.10	Harmoniums
	9205.90.20	Mouth organs
	9205.90.90	Other
	9206	Percussion musical instruments (for example, drums, xylophones, cymbals, castanets, maracas).
	9206.00.10	Steel band instruments
	9206.00.90	Other
	9207.10.00	Keyboard instruments, other than accordions
	9207.90.00	Other
	9208.10.00	Musical boxes
	9208.90.00	Other
	9209.30.00	Musical instrument strings
	9209.91.00	Other: Parts and accessories for piano
	9209.92.00	Parts and accessories for the musical instruments of heading 92.02
	9209.94.00	Parts and accessories for the musical instruments of heading 92.07
	9209.99.00	Other

Lighting Equipment

Category	HS Code	HS Description
5. Lighting Equipment	8512.10.00	Lighting or visual signalling equipment or the kind used on bicycles
	8512.20.00	Other lighting or visual signalling equipment
	8513.10.00	Portable electric lamps, designed to function by their own source of energy, other than lighting equipment of heading 85.12 (85.13) - Lamps
	8513.90.00	Parts for above
	8539.10.00	Sealed bean lamp units
	8539.21.00	Tungsten halogen filament lamps
	8539.22.00	Filament lamps of a power not exceeding 200 W and for a voltage exceeding 100 V
	8539.29.00	Other filament lamps, excluding ultra-violet or infra-red lamps
	8539.31.00	Fluorescent lamps, hot cathode
	8539.32.00	Mercury or sodium vapour lamps; metal halide lamps
	8539.39.00	Other discharge lamps other than UV lamps
	8539.41.00	Arc lamps
	8539.49.00	Ultra-violet or infra-red lamps
	8539.90.00	Parts for ultra-violet or infra-red lamps; arc lamps
	9006.61.00	Discharge lamps ("electronic") flashlight apparatus
	9006.69.00	Other photographic flashlight apparatus

Electrical and Electronic Tools

Category	HS Code	HS Description
6. Electrical & Electronic Tools	8424.20.00	Spray guns and similar appliances
	8424.81.00	Other appliances:
	8424.89.00	Agricultural or horticultural
	8424.90.10	Parts:
	8424.90.90	Other
	8432.80.10	Lawn or sports-ground rollers
	8432.80.90	Other
	8432.90.00	**Parts**
	8432.90.10	Of lawn or sports-ground rollers of sub-heading 8432.80.10
	8432.90.90	Other
	8452.21.00	Other sewing machines: Automatic units
	8452.29.00	Other
	8452.90.00	Other parts of sewing machines
	8455.10.00	Tube mills
	8455.21.00	Other rolling mills: Hot or combination hot and cold
	8455.22.00	Cold
	8455.90.00	Other parts
	8458.11.00	Horizontal lathes: Numerically controlled
	8458.19.00	Other
	8458.91.00	Other lathes: Numerically controlled
	8458.99.00	Other
	8459.61.00	Other milling machines: Numerically controlled

	8459.69.00	Other
	8459.70.00	Other threading or tapping machines
	8461.20.00	Shaping or slotting machines
	8461.30.00	Broaching machines
	8461.40.00	Gear cutting, gear grinding or gear finishing machines
	8461.50.00	Sawing or cutting-off machines
	8461.90.00	Other
	8462.21.00	Bending, folding, straightening or flattening machines (including presses): Numerically controlled
	8462.29.00	Other
	8462.31.00	Shearing machines (including presses), other than combined punching and shearing machines: Numerically controlled
	8462.39.00	Other
	8462.41.00	Numerically controlled presses
	8462.49.00	Other
	8462.91.00	Other: Hydraulic
	8462.99.00	Other
	8463.20.00	Thread rolling machines
	8463.90.00	Other
	8464.10.00	Sawing machines
	8464.20.00	Grinding or polishing machines
	8464.90.00	Other
	8465.10.00	Machines which can carry out different types of machining operations without a tool change between such operations
	8465.91.00	Other: Sawing machines

	8465.92.00	Planning, milling or moulding (by cutting) machines
	8465.93.00	Grinding, sanding or polishing machines
	8465.94.00	Bending or assembling machines
	8465.95.00	Drilling or mort icing machines
	8465.96.00	Splitting, slicing or paring machines
	8465.99.00	Other
	8466.10.00	Tool holders and self-opening dieheads
	8466.20.00	Work holders
	8466.30.00	Dividing heads and other special attachments for machine-tools
	8466.91.00	Other: For machines of heading 84.64
	8466.92.00	For machines of heading84.65
	8466.93.00	For machines of headings 84.56 to 84.61
	8466.94.00	For machines of heading 84.62 or 84.63
	8467.21.00	With self-contained electric motor: Drills of all kinds
	8467.22.00	With self-contained electric motor: Saws
	8467.29.00	Other
	8467.81.00	Other tools: Chain saws
	8467.91.00	Parts: Of chain saws
	8467.99.00	Other
	8468.10.00	Hand-held blow pipes
	8468.80.00	Other machinery and apparatus
	8468.90.00	Parts

Toys, Leisure and Sporting Equipment

Category	HS Code	HS Description
7. Toys, leisure and sporting equipment	8903.99.00	Other
	9504.10.00	Video games of a kind used with a television receiver
	9504.30.00	Other games, operated by coins, banknotes, bank cards, tokens or by other means of payment, other than bowling alley equipment

Medical Equipment

Category	HS Code	HS Description
8. Medical Equipment	9011.10.00	Stereoscopic microscopes
	9011.80.00	Other microscopes, for photomicrography, cinephotomicrography or microprojection
	9011.90.00	Parts and accessories for above
	9012.10.00	Microscopes other than optical microscopes; diffraction apparatus
	9012.90.00	Parts and accessories for diffraction apparatus
	9018.11.00	Electro-diagnostic apparatus (including apparatus for functional exploratory examination or for checking physiological parameters (90.18) - electro-cardiographs
	9018.12.00	Ultrasonic scanning apparatus
	9018.13.00	Magnetic Resonance Imaging apparatus (MRI)
	9018.14.00	Scintigraphic apparatus
	9018.19.00	other electro-diagnostic apparatus[1]
	9018.20.00	Ultra-violet or infra-red ray apparatus
	9022.12.00	Computed tomography apparatus
	9022.13.00	X-ray apparatus for dental use
	9022.14.00	Other x-ray apparatus for medical, surgical or veterinary uses
	9022.21.00	Apparatus based on the use of alpha, beta or gamma radiations, whether or not for medical, surgical, dental or veterinary uses, including radiography or radiotherapy apparatus: For medical, surgical, cental or veterinary uses
	9022.30.00	X-ray tubes
	9022.90.00	X-ray tubes

Monitoring & Control Equipment

Category	HS Code	HS Description
9. Monitoring & Control Equipment	8531.10.00	Burglar or fire alarms and similar apparatus
	9016.00.00	Balances of a sensitivity of 5cg or better, with or without weights
	9026.10.00	Instruments and apparatus for measuring or checking the flow or level of liquids
	9026.20.00	Instruments and apparatus for measuring or checking pressure
	9026.80.00	Other instruments and apparatus for measuring or checking variables of liquids or gases
	9026.90.00	Parts of ins & app for measuring or checking variables of liquids or gases
	9030.10.00	Instruments & apparatus for measuring or detecting ionising radiations
	9030.20.00	Cathode-ray oscilloscopes and oscillographs
	9030.31.00	Multimeters
	9030.32.00	Multimeters with recording device
	9030.33.00	Instruments & app for measuring or checking voltage, current
	9030.39.00	Instruments & app for measuring or checking voltage, current etc (w/o recording device)
	9030.82.00	Instruments for measuring or checking semiconductor wafers or devices
	9030.83.00	Recording electrical measurement instruments
	9030.84.00	Instruments and appliances for measuring or checking electrical quantities
	9030.89.00	Instruments and apparatus for measuring or checking electrical quantities

	9030.90.00	Parts and accessories for instruments and apparatus for measuring or checking electrical quantities
	9031.10.00	Machines for balancing mechanical parts
	9031.20.00	Test benches
	9031.30.00	Profile projectors
	9031.41.00	Optical instruments for checking semiconductor wafers
	9031.49.00	Other optical instruments for measuring or checking
	9031.80.00	Other measuring or checking instruments, appliances and machines
	9031.90.00	Parts and accessories for measuring or checking instruments
	9032.10.00	Automatic regulating or controlling instruments and apparatus (90.32) - thermostats
	9032.20.00	Manostats
	9032.81.00	Hydraulic or pneumatic automatic regulating or controlling instruments & appliances
	9032.89.00	Automatic regulating or controlling instruments and apparatus (90.32)
	9032.90.00	Parts for above
	9033.00.00	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof

Automatic Dispensers

Category	HS Code	HS Description
10. Automatic Dispensers	8472.90.00	Other
	8476.21.00	Other
	8476.29.00	Other
	8476.81.00	Other machines: incorporating heating or refrigerating devices
	8476.89.00	Other

ANNEX II: LIST OF INTERVIEWED STAKEHOLDERS

CATEGORY	SUB-CATEGORY	COMPANY	WEEE CATEGORY
Regulators and Enforcement Agencies	Environmental Regulators	National Institute for the Environment and Development in Suriname (NIMOS)	Large Household Appliances
		Ministry of Labour, Environment and Technology	All Categories
	Waste Management Regulators	Ministry of Public Works	All Categories
		Ministry of Regional Development	All Categories
	Telecommunications	Telecommunications Authority of Suriname (TAS)	IT & Telecommunications equipment
	Trade & Industry	Ministry of Trade & Industry	All Categories
		Suriname Standard Bureau	All Categories
Major ICT Service Providers	Telephone Companies	Digicel Suriname	IT & Telecommunications equipment
		Intelsur N.V. / Uniqa	IT & Telecommunications equipment
		Telesur	IT & Telecommunications equipment
Major EEE Consumers	Mining and Industrial Companies	Bauxiet Institute Suriname	IT & Telecommunications equipment
		IAMGOLD Rosebel Gold Mine N.V.	IT & Telecommunications equipment
		SurGold	IT & Telecommunications equipment
	Utility Companies	EBS NV (Power/electrical company)	Lighting Equipment

	Banking, Finance and Insurance Intuitions	RBC Royal Bank	IT & Telecommunications equipment
		Hakrinbank	IT & Telecommunications equipment
	Medical Institutions	Streekziekenhuis Nickerie (Hospital)	Medical Equipment and IT & Telecommunications equipment
		s' Lands hospital (Hospital)	Medical Equipment and IT & Telecommunications equipment
		Academisch Hospitaal (Hospital)	Medical Equipment and IT & Telecommunications equipment
	IT & Telecommunication	STAATSOLIE NV	IT & Telecommunications equipment
		SURALCO L.L.C.	IT & Telecommunications equipment
	Educational Institutions	Anton De Kom (ADeK) University of Suriname	IT & Telecommunications equipment
	Other	Suriname Princess Casino	Automatic Dispensers
Major EEE Distributors	**LHHA/SHHA**	Kirpalani	Large & Small Household Appliances
		B & J Home Centre	Large & Small Household Appliances
	IT and Telecommunications	Cellular planet	IT & Telecommunications equipment
		Computer and Repairs	IT & Telecommunications equipment
		Computer and Office Supplies	IT & Telecommunications equipment

	Consumer Equipment	Pro Cool	Large Household Appliances
		Roy's Electronics	Consumer Equipment
		Ishaak's Electro Web	IT & Telecommunications equipment and Consumer Equipment
	Lighting Equipment	Beni's Christmas Palace	Lighting Equipment
		Guguplex Technologies SAC	Lighting Equipment
		HD Lighting	Lighting Equipment
	Electrical and Electronic Tools	Beni's Technical Trading	Electrical & Electronic Tools and Consumer Equipment
	Medical Devices	Biomedical Systems	Medical Equipment
Service Providers	**Scrap Dealer**	Multi Options Recycling Scrapyard	IT & Telecommunications equipment
		Babel	IT & Telecommunications equipment and Large & Small Household Appliances
		Stichting Samarja	IT & Telecommunications equipment
	Repairer/Refurbisher	Core Computers	IT & Telecommunications equipment
		B & J Home Centre	Large & Small Household Appliances
	Recycler	ReComSur	IT & Telecommunications equipment

ANNEX III: SAMPLE QUESTIONNAIRES

BASEL CONVENTION REGIONAL CENTRE

ASSESSMENT ON WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

Questionnaire

Regulators & Enforcement Agencies

1. What is the function of your organisation?
2. Are waste electronic and electrical equipment considered hazardous/special waste in your country?
    - Yes
    - No
    - Not sure
3. Does your organisation have a definition of e-waste or is their one nationally?
4. As a Regulator and Enforcement Agency are there any policies in place that address the management of e-waste?
5. If yes, please describe.
6. If no, are there any plans in place for the development of regulations, standards or guidelines in your country?
7. Does your organisation monitor the equipment imported by its operators?
8. If yes, which types of equipment?
9. Are there any regulations/ guidelines for types of equipment that are imported by operators?
10. Are operators mandated to report figures for imports and exports of equipment?
11. Can you provide these figures?
12. Do you know of the practices operators engage in when disposing of e-waste in Suriname?

BASEL CONVENTION REGIONAL CENTRE

ASSESSMENT ON WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

Questionnaire

Consumers (General)

1. What types of electrical and electronic equipment are utilized at your establishment?
2. What are the major brands of equipment used? (P*lease separate based on type of equipment*). Why were these particular brands selected?
3. What are the average lifespans of the equipment? (*please separate based on type of equipment*)
4. Do the lifespans vary according to brand? If yes, which brands last longer?
5. **Who i**s responsible for keeping equipment inventories and **how** is the data stored?
6. What types of information on the equipment are recorded?
    - Quantities?
    - Values?
    - Serial numbers?
    - Source/Supplier information?
7. When do you procure equipment? (*tick all that apply*)
    a. When you see the need – for example to facilitate increased output of services
    b. When there is a fall in market price
    c. When existing equipment have become obsolete
    d. When policy dictates
    e. When funding becomes available
    f. Other (please specify)
8. When additional equipment is purchased are they generally new or second-hand?
9. What are the annual figures on the **quantities** of new equipment purchased**?** *Please separate based on type of equipment.*
10. From where do you procure equipment?
    a. Overseas manufacturer/producer
    b. Local wholesaler/retailer/distributor
    c. Other
11. Who is responsible for equipment checks and for determining when parts or entire machines/apparatus need to be replaced or discarded? What is the procedure for replacement?

12. What is the definition used for the End of Life (EoL) of equipment within the organization?
13. What is the general procedure for EoL equipment/parts: Are they stored, dumped, sold, returned to originator, repaired, donated, refurbished or recycled?

Questions 14-16 are applicable if 'stored' was selected as an option in question 13.

14. What are the main factors behind retention of non-functional unwanted equipment, (select as applicable):
    a. internal parts can be used
    b. belief that the e-waste is repairable and therefore functional in the future,
    c. bought at a high price so that they were storing or returning back to head offices waiting for collectors to buy from them rather than having to pay for collection
    d. Company policy: unsure of main reasons
    e. Difficulty in writing off from the books
    f. Other: *please indicate*
15. Where is this non-functional equipment stored?
    a. Internally
    b. Externally: e.g. warehouse
    c. Other: *please indicate*
16. What are the quantities of equipment stored?
17. Do you have any arrangements for take-back of any equipment with suppliers?
18. Does your establishment have any environmental certifications?
19. Does your establishment have a policy for the management of e-waste?
    - If not, does your establishment plan to adopt a policy of e-waste management?
20. Would you be ready to pay for your electrical equipment to be collected and disposed of or recycled? Yes /No
    a. If yes, at what conditions? (e.g. pick-up service, guarantee of proper disposal, etc.)
21. What knowledge do you have on the outcome of WEEE locally (what happens to it)?
22. From your point of view, what are the main obstacles for proper e-waste treatment in general?
23. What knowledge do you have on treating WEEE?
24. Do you have any knowledge of the dangers of poorly treated or mismanaged WEEE?
25. In your opinion, do you think the average person in Suriname is aware of the environmental and health risks associated with improper disposal of WEEE? Yes/No

26. What reasons do you think account for this?
27. Where do you think the primary responsibility lies for dealing with WEEE?

BASEL CONVENTION REGIONAL CENTRE

ASSESSMENT ON WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

Questionnaire

Distributor (General)

1. What types of products do you distribute?
2. What are the main models (brands) of products distributed?
3. On average, what is the fastest selling product?
4. What is the fastest selling model/brand? Can you think of any reasons for its popularity?
5. What is the average lifespan of the products you distribute?
6. Does the lifespan vary based on the model (brand)?
7. Do you use a particular set of criteria when selecting which models you distribute?
    - Customer preference
    - Designs based on efficiency/quality
    - Price
    - Market forces
    - Long-standing business relationship
    - Other: please indicate
8. What are the annual figures on the **quantity** and **weights** of these products imported? (Please separate according to product type)
9. What are the annual figures on the **quantity** and **weights** of these products sold? (Please separate according to product type).

10. Is there a particular time period when sales are the highest?
    - If yes, does the time frame correlate with particular types of products?
11. What is the procedure for replenishing your stocks?
    - Re-order based on demand?
    - Re-order in bulk based on pre-defined time period?
    - Other: please indicate
12. How often do you need to replenish your stocks of products?
13. Who is responsible for keeping stock inventories and how is the data stored?
14. What type of information is stored?

15. What is the procedure for dealing with unsold products?
16. Do you have any arrangements for take-back of any products with **suppliers** and/or **customers**?
17. Are there any additional services your company provides to customers with regard to maintenance and care of the product (s)? If yes, please expand.

    If refurbishment/repair:

    -Where are parts sourced from?

    -What happens to unwanted parts?

    -What happens to irreparable products?
18. Who are your major clients?
19. Does your company have any environmental certifications?
20. Does your company have a policy for the management of e-waste?
    - If not, does your company plan to adopt a policy of e-waste management?

21. What knowledge do you have on the outcome of WEEE locally (what happens to it)?

22. From your point of view, what are the main obstacles for proper e-waste treatment in general?

23. What knowledge do you have on treating WEEE?

24. Do you have any knowledge of the dangers of poorly treated or mismanaged WEEE?

25. In your opinion, do you think the average person in Suriname is aware of the environmental and health risks associated with improper disposal of WEEE? Yes/No

26. What reasons do you think account for this?

27. Where do you think the primary responsibility lies for dealing with WEEE?

BASEL CONVENTION REGIONAL CENTRE

ASSESSMENT ON WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

Questionnaire

Waste Collectors (General)

1. From which areas/ districts does your company collect waste?
2. What types of waste are collected?
3. Is collection based on a regular schedule or based on the requests of waste generators?
4. If waste collection is based on a schedule, please describe this schedule.
5. Who are your major clients?
6. Is there a fee charged for the collection of waste? If yes, how is this fee determined?
7. Are there any specific types of WEEE that are collected more than others?
8. Do you have any data on the average annual quantities of WEEE collected? Have any trends been observed?
9. What may account for the trends observed in the volumes and types of WEEE collected?
10. What safety precautions are taken to minimise leakages during transportation of the waste?
11. What safety precautions are taken by personnel collecting the waste to protect themselves from exposure to potentially harmful substances?
12. What is usually done with the waste (including any e-waste) that is collected?
    a. Sent to the landfills for disposal
    b. Exported for recycling/disposal – To which countries and why?
    c. Other (please state)
13. Is any of the waste intercepted by informal players between collection and final treatment/disposal?
14. Is your company involved in any waste handling procedures other than collection?
    a. Sorting
    b. Treatment/recycling
    c. Disposal
    d. Other (*please specify*)
15. If the waste is sorted, please describe the process in terms of:

a. What categories is the waste sorted under, and which category does e-waste fall under, if it is not a category by itself
b. Who does the sorting and how much of the process is manual versus mechanical
c. What safety precautions are taken when sorting

16. If the waste is treated or disposed of by your company, please describe the processes in terms of:
    a. Who carries out the procedures and what is the ratio of mechanical to manual labour utilized
    b. What safety precautions are taken
17. Do you work with any companies to ensure that the WEEE is dealt with properly after collection? If yes:
    a. Which company/companies? Why were these companies chosen?
    b. Are you aware of what happens to the waste after it has been sent to this company or companies?
18. Are there are procedures that must be followed when transactions, such as the handing over of waste to these companies, occur? If yes, please describe.
19. What data collection/data management procedures are in place?
    a. Who is responsible for data collection?
    b. How is the data stored (manually, spreadsheets, etc.) and in what format (what parameters are used)?
20. What are the main challenges your company experiences in terms of waste collection?
    - High operational costs
    - Lack of public awareness
    - Inadequate infrastructure
    - Insufficient government support: policies, legislation etc.
    - Limited technical capacity: size of labour force/ qualifications etc.
    - Other
21. Do you have knowledge of alternative treatment or disposal procedures/facilities for WEEE in Suriname?
22. Do you have knowledge of the local markets for the components of dismantled WEEE?
23. Where do you think the primary responsibility lies for dealing with WEEE?

24. Do you believe there are opportunities for potential recycling or re-use of WEEE via linkages to organizations?
25. In your opinion, do you think the average person in Suriname is aware of the environmental and health risks associated with improper disposal of WEEE? Yes/No
26. What reasons do you think account for this?
27. Do you have any suggestions for improving the e-waste management system in the country?
28. From your point of view, what are the main obstacles for proper e-waste collection and e-waste treatment in general?
29. Do you have knowledge of alternative data sources of WEEE generation rates for Suriname?

BASEL CONVENTION REGIONAL CENTRE FOR THE CARIBBEAN

ASSESSMENT ON WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

Questionnaire

Waste Disposers (General)

1. What types of waste do you dispose of?
2. Do you dispose of these wastes within the country or do you ship them overseas?
3. If you ship the waste, to which countries and why were these countries chosen?
4. From whom do you receive the waste?
5. Is there a fee charged for disposal? If yes, how is this fee determined?
6. Does WEEE constitute any of the waste disposed of by your company? If yes, which particular items?
7. Do you have any data on the average annual quantities of WEEE collected? Have any trends been observed on the types and quantities of WEEE being sent for disposal?
8. What may account for the trends observed in the volumes and types of WEEE disposed?
9. What safety precautions are taken when handling waste for disposal?
10. Is any of the waste intercepted by informal players between collection and final disposal?
11. Is your company involved in any waste handling procedures other than disposal?
    a. Collection
    b. Sorting
    c. Treatment/recycling
    d. Other (*please specify*)

12. If the waste is sorted prior to disposal, please describe the process in terms of:
    a. What categories is the waste sorted under, and which category does e-waste fall under, if it is not a category by itself
    b. Who does the sorting and how much of the process is manual versus mechanical
    c. What safety precautions are taken when sorting

13. Please describe the disposal (and recycling, if any) process in terms of:

a. Who carries out the procedures and what is the ratio of mechanical to manual labour utilized
b. What safety precautions are taken

14. Do you work with any other local companies to ensure that the WEEE is disposed of properly (or recycled)? If yes:
    a. Which company/companies? Why were these companies chosen?
    b. Are you aware of what happens to the waste after it has been sent to this company or companies?

15. Are there are procedures that must be followed when transactions, such as the handing over of waste to these companies, occur? If yes, please describe.
16. What data collection/data management procedures are in place?
    a. Who is responsible for data collection?
    b. How is the data stored (manually, spreadsheets, etc.) and in what format (what parameters are used)?
17. What are the main challenges your company experiences in terms of waste disposal?
    - High operational costs
    - Lack of public awareness
    - Inadequate infrastructure
    - Insufficient government support: policies, legislation etc.
    - Limited technical capacity: size of labour force/ qualifications etc.
    - Other?
18. Do you have knowledge of alternative treatment or disposal procedures/facilities for WEEE in Suriname?
19. Do you have knowledge of the local markets for the components of dismantled WEEE?
20. Where do you think the primary responsibility lies for dealing with WEEE?
21. Do you believe there are opportunities for potential recycling or re-use of WEEE via linkages to organizations?
22. In your opinion, do you think the average person in Suriname is aware of the environmental and health risks associated with improper disposal of WEEE? Yes/No

23. What reasons do you think account for this?
24. Do you have any suggestions for improving the e-waste management system in the country?
25. From your point of view, what are the main obstacles for proper e-waste disposal and e-waste treatment in general?
26. Do you have knowledge of alternative data sources of WEEE generation rates for Suriname?

BASEL CONVENTION REGIONAL CENTRE

ASSESSMENT ON WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

Questionnaire

Recyclers

1. For how long have you been in operation?
2. What was the motivation for getting into the recycling business?
3. What types of waste material are recycled by your company? Why were these chosen?
4. Is there a system for determining or defining End of Life (EoL) for waste? For instance, how do you determine if something can be recycled or not?
5. What is the fate of items that cannot be recycled?
6. What procedures do you utilize when handling and treating the waste?
7. Is recycling done in the country or are the items shipped abroad to be recycled?
8. If items are shipped abroad for recycling, can you provide information on:
    - Volumes shipped?
    - Final market?
    - Do you have any knowledge of the WEEE after shipment?
9. What are the approximate quantities of waste received annually?
10. Who are your major clients?
11. What is the general trend of WEEE received?
    - Any reasons that may account for this?
12. Can you describe the data collection procedure, in terms of:
    - What general type of information is collected?
    - How often is data collected?
    - Who holds the responsibility for collection?
13. Can you describe the data management system, in terms of:
    - Storage mechanism
    - Procedure
    - Type of system employed: standard/international/ in-house
14. What is the staff size?
15. What general qualifications are required for employment?

16. Are there training sessions during the employment term? More specifically for :
    - Dealing with current waste stream?
    - Dealing with shifts in the waste stream?
    - How frequently are these training sessions carried out?
17. **What** are the service charges for WEEE generators and **how** are they determined?
18. What method is used to attract clients:
    - Advertising/marketing campaign
    - Networking
    - None: companies take their own initiative
    - Other

12. What are the main challenges your company experiences with respect to waste collection and treatment?
    - Costs
    - Lack of public awareness
    - Infrastructure
    - Government
    - Technical capacity: company size/ limited qualifications etc.
    - Other
13. Does your company have any relevant local or global certifications?
14. If yes, are there any challenges related to gaining certification: E-Steward, MAR?
    a. For example, requirements, timeframe
15. Does your company have a WEEE policy?
16. Why was Suriname selected as a location site for the company:
    a. High WEEE generation rates?
    b. Strategic location: hub-point?
    c. Government incentives?
    d. Local impetus?
17. Do you believe there is potential for expansion of the WEEE treatment market locally (esp. w.r.t volume generation rates) or is it still a niche sector?
18. Where do you think the primary responsibility lies for dealing with WEEE?
19. What do you think is the general public perception of WEEE?
20. What small-scale activities can be implemented to reduce the WEEE generation locally?

21. What are your thoughts on the future WEEE trend locally and globally?
22. Do you have knowledge of alternative data sources of WEEE generation rates for Suriname?
23. What policies or systems do you believe should be implemented to improve the existing WEEE management system?

BASEL CONVENTION REGIONAL CENTRE

ASSESSMENT ON WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

Questionnaire

Repairers/Refurbishers

1. For how long has your company been in operation?
2. What was the motive for getting into the repair/refurbishment business?
3. What e-waste activities does the company carry out? *(please tick all that apply)*
    - Collection
    - Refurbishment
    - Sale of refurbished products
    - Repair
    - Dismantling/Recycling
    - Export
    - Other _____ *(please specify)*
4. What types of electrical and electronic equipment (EEE) do you repair/refurbish?
5. By which strategies and channel does your company receive e-waste?

    a. Customers bring in for themselves their damaged EEE to be refurbished/repaired
    b. Customers call the company who then dispatches transport to collect the item(s) to be refurbished/repaired.
6. If you selected (b) in question (3), do you do your own collection or do you cooperate with other companies/authorities for collection purposes? If you cooperate with other companies, which, and what kind of arrangement do you have with them?
7. Is your company certified? E.g ISO, STOW. If yes, which, and what challenges, if any, did you face in acquiring certification?
8. If not, are there plans to become certified?
9. In the table below, please provide a breakdown of the products you repair/refurbish, the quantities repaired/refurbished per month, average repair charges, and in the case of

refurbishers, the average prices that you pay for the damaged products you refurbish, and the average prices at which you sell the refurbished products.

Product	Average quantity repaired/refurbished per month	Average repair price	Average purchase price*	Average sales price*

*Applies to refurbishers

10. From whom do you receive most of the products to be refurbished? E.g. Industries, private businesses, government, households?
11. By what means do you attract new clientele?
    - Active advertising
    - Word of mouth/referrals
    - Other _____(please specify)

Questions 12-14 apply to refurbishers.

12. What factors determine the price that you will pay for a product that you will refurbish?
    - Condition of the equipment
    - Market demand for the product
    - Market price
    - Other_____ (please specify)
13. What factors determine the price at which you will sell the refurbished product?
    - Condition of the equipment
    - Market demand for the product
    - Market price
    - Other_____ (please specify)
14. To whom do you sell most of your refurbished products? Do you export any? If yes, to which countries and why were these countries chosen?

15. What is done with parts or products which cannot be repaired or used for refurbishment?
    - They are given back to the customer
    - The irreparable product/parts are accepted from the customer with/without a fee
    - Recommendations are made on alternate places where the customer may be able to repair/refurbish or dispose of the damaged equipment
    - Other (please specify) _____

16. What criteria are used for checking if something can or cannot be repaired or refurbished? Is there a particular person who is responsible for determining this?
17. How many workers are engaged in the repair/refurbishment operation?
18. What is the ratio of mechanical to manual labour utilized in repair/refurbishment operations?
19. Are there any special requirements/qualifications which persons must have before they can be employed as a refurbisher at your company?
20. Does the company provide any training to its employees? If yes, which, and how often are these training sessions conducted?
21. What health and safety measures are undertaken by the company to protect persons who are physically involved in the repair/refurbishment process?
22. What environmental measures does your company undertake to prevent the release of hazardous substances?
23. Is your company working on a formal basis or is it an informal company?
24. What parameters are used for recording information on goods that are repaired/refurbished? Will you be willing to provide a sample template of your record sheets?
25. How is the data stored and how often is it updated?
26. Who is responsible for data recording and management?
27. What are the main challenges faced by your business?

- Low demand for repair services
- High operational costs
- Low or unskilled labour

- Difficulty in obtaining specialised equipment
- Other (please specify) _____

28. From your point of view, what are the main obstacles for proper e-waste treatment in general?
29. Aside from refurbishment, do you have any knowledge of what happens to WEEE locally?
30. Do you have any knowledge on the dangers of poorly treated or mismanaged WEEE? If yes, please specify.
31. In your opinion, do you think the average person in Suriname is aware of the environmental and health risks associated with improper disposal of WEEE? Yes/No
32. What reasons do you think account for this?
33. From your point of view, what are the main obstacles for proper e-waste treatment in general?
34. In your opinion, what should be done to facilitate e-waste management? Where should the primary responsibility for dealing with WEEE/e-waste lie?
35. Do you have knowledge of alternative treatment or disposal procedures/facilities for WEEE in Suriname?
36. Further comments?

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ASSESSMENT ON WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

Questionnaire

Scrap Dealer

1. For how long have you been in operation?
2. What was the motivation for getting into the scrap metal business?
3. From where do you obtain/collect your scrap material?
4. Do you import any scrap material to be sold locally? If yes, from which country/countries and in what quantities?
5. What types of WEEE/scrap material does your establishment receive and sell?
6. What activities are carried out at your establishment? *(please tick all that apply)*
    - Scrap purchase
    - Sorting
    - Dismantling
    - Recovery
    - Sale of useable components to repair shops
    - Sale to other scrap dealers
    - Export
    - Other_____ *(please specify)*
7. Please provide a brief description of each activity, including the processes, materials and safety measures that are involved.
8. How many persons are employed at your establishment?
9. How many persons are delegated per activity?
10. What is the ratio of mechanical to manual labour overall and/or per activity?
11. How often does purchase/collection take place? (daily/weekly/other)
12. On average, what weight and quantity of material is collected/ received? (per week/month/year)
13. On average, how much do you offer to pay (per unit/per kg) for the WEEE/scrap material that you receive? *(Please separate according to types of scrap material where possible)*
14. What factors determine how much you pay for the scrap material? *(please tick all that apply)*
    - Condition of the material

- Market price
- Market demand
- Other_____*(please specify)*

15. What factors determine the prices at which you sell the scrap material? *(please tick all that apply)*
    - Condition of the material
    - Market price
    - Market demand
    - Other_____*(please specify)*

16. On average, what are the selling prices (per unit/per kg) of your locally sold scrap material? *(Please separate according to types of scrap material where possible)*
17. Who are your main clientele?
18. On average, what weight and quantity of material is sold locally? (per week/month/year)
19. What is the average monthly/annual revenue earned from scrap material sold locally? (*If possible, please provide a breakdown of this total figure according to type of scrap material*)
20. What is the average time period between date of purchase and date of sale for your materials?
21. What factors influence the retention time? *(please tick all that apply)*
    - Demand
    - Depreciation (i.e. sell items before they depreciate to a non-profitable value)
    - Market Price (eg. keep items until market prices increase)
    - Other _____ *(please specify)*

22. Is any of the material exported? Yes/No

Questions 22-28 apply if answered yes to question 21.

23. To which countries do you export?
24. Why did you choose these countries to export to? *(please tick all that apply)*
    - High demand
    - High Price
    - Guaranteed Market

- Other_____(*please specify*)

25. What types of overseas establishments purchase your scrap material?
26. Do the materials fetch a higher price overseas compared to when they are sold locally? Yes/No. If yes, what factors account for this?
27. On average, what are the selling prices (per unit/per kg) of your exported scrap material? [If different from the responses given to question 15]
    (Please separate according to types of scrap material where possible)
28. What is the average monthly or annual weight and/or quantity of scrap material exported?
29. What is the average monthly/annual revenue earned from exported scrap material?
    (*If possible, please provide a breakdown of this total figure according to type of scrap material*)
30. Who is responsible for keeping inventories and how is the data stored?
31. What types of information are recorded?
32. How often are the inventories updated?
33. Are there any specific qualifications or training that persons need to have before they can be considered for employment at your company? If yes, which?
34. Does the company provide training to employees? If yes, what types of training?
35. How often are these training sessions carried out?
36. Are you required to have a license for your operations? Yes/No
37. If yes, which, and how often is it renewed?
38. Who is the authority responsible for issuing such licenses and what information do you need to provide to them when applying for one?
39. What conditions must be satisfied before you are granted a license?
40. Does your establishment have any environmental certification? If yes, which?
41. Does your establishment have a WEEE policy? (e.g. to describe how WEEE items received have to be treated and handled). If yes, please state this policy.
42. What are the main challenges that your company faces as a scrap metal business? *(please tick all that apply)*
    - Lack of markets/low demand for certain scrap materials
    - Low or unstable market prices for certain materials
    - Local competition
    - Competition from overseas

- High operational costs
- High shipping costs
- Obtaining certification
- Other _____*(please specify)*

43. Do you have any knowledge on the dangers of improperly treated WEEE? *(If yes, please specify).* How did you come across this information?

44. Aside from scrap metal activities, do you have any knowledge on what happens to WEEE locally? *(If yes, please specify)*

45. In your opinion, do you think the average person is aware of the environmental and health risks associated with improper disposal of WEEE? Yes/No

46. What reasons do you think account for this?

47. Where do you think the primary responsibility lies for dealing with WEEE?

48. Do you have any suggestions for improving the e-waste management system in the country?

49. Do you have any knowledge of other scrap metal dealers operating in the country?

ANNEX IV: STAKEHOLDER RESPONSES

Table A4-1: WEEE Stakeholder Responses - Regulatory and Enforcement Agencies

Organisation	Name	Position/ Designation	1. Can you give a description of the function your organisation?	2. Are waste electrical and electronic equipment considered hazardous/ special waste in your country?	3. Does your organisation have a definition of e-waste or is there one nationally?	4. As a Regulator and Enforcement Agency are there any policies in place that address the management of e-waste?	5. If yes, please describe.	6. If no, are there any plans for the development of regulations, standards or guidelines in your country/organisation?	7. Does your organisation monitor the equipment imported and exported by its operators?	8. If yes, which types of equipment and why?	9. Are there any regulations or guidelines for the types of equipment that are imported by operators?
Telecommunications Authority Suriname (TAS)	Jai Udit	Coordinator Policy & Innovation	The function of the TAS are: a. to enhance the introduction of new technologies and services; b. to advise the Minister on affairs related to telecommunication, if so requested or on its own accord; c. to prepare the concessions to be granted and to monitor the compliance with the concession conditions by the concession holders; d. to supervise the rates for services that are regulated and/or assigned; e. to grant licenses and to monitor the compliance with the licensing conditions by the license holders; f. to represent the Republic of Suriname with international organisations; g. to manage the frequency spectrum; h. to manage the number plan; i. to standardize and to control peripherals; j. to settle disputes; k. to manage the Universal Services Fund; l. to perform the activities assigned to the TAS by and pursuant to this	Not sure	The TAS does not have a definition of e-waste.	The TAS does not has a policy in place that address the management of e-waste.	-	The TAS will consider the development of guidelines with support from relevant agencies (e.g. the NIMOS in Suriname). In her strategy the TAS considers that growth in the telecommunications and ICT must be accompanied by a sustainable environmental consciousness.	No	-	Currently there are no regulations or guidelines.
Vice President Office	-	ICT Manager of VicePresident	They manage ICT equipment. They are currently working with software. are working on a system that will connects all Government organisations	No	No	No		Yes there are plans that entails of a specific procedure for procuring equipment. The E-Gov program is working towards the electronic equipment procurement, where equipment value <4000 SRD requires no process while equipment >4000 SRD requires quotes from three different organisations and the best option is choosen.	No	-	No
Bauxiet Instituut Suriname	Raymondo D. Emmanuels	Control & Monitoring Officer - Jr. Staff	- Checking Fe, Al, Cu scraps - Examinig PCB's for international market prices - Giving approvals for exporting of metals - Exporters must pay statistics and concession taxes on shipments so the Bauxite Institute must check prices to provide retailers and the Ministry of Trade the minimum cost upon which taxes are determined. -Monitor the Bauxite Industry -Exporters bring their documents to the Institute , the shipment is inspected, a report is done, approval is given.	No	No	No	-	Not aware of any actions.	Yes	Scrap materials are checked for Cu, Al, Fe and PCB's	No
Surinamer Customs Authority (Suriname Customs)	Dave Kamit	Customs Officer	-	No	No	No	-	-	No	-	-
Surinaams Standaarden Bureau (Suriname Bureau of Standards)	Mr. Pawirodinomo Murwin and Mrs. Razia Gaffar-Alli	Standards Officer	There are no policies, plans or activities that allow for the enhanced management of EEE and WEEE.	No	No	No, however there is an inspection procedure for the labels on EEE packages but this is not enforced.	-	-		-	-
Ministry of Trade and Industry	Aroen Jadoenathmisier	Manager	Suriname has officially switched from the 2007 HS codes to the Asycuda system on the 1st February, 2015. Suriname no longer has control over scrap metals since the removal of the licence in 2006. Suriname does have a negative list but e-waste is not on the list.	No	No	No	-	-		-	-

Table A4-1: WEEE Stakeholder Responses - Regulatory and I

Organisation	Name	Position/ Designation	10. Are operators mandated to report figures for imports and exports of equipment?	11. Can you provide these figures?	12. Do you know the practices operators engage in when disposing of e-waste in Suriname?	Additional Comments?
Telecommunications Authority Suriname (TAS)	Jai Udit	Coordinator Policy & Innovation	No.	-	NA	-
Vice President Office	-	ICT Manager of VicePresident	Ministries are required to perform inventories before new equipment is procured.	-	-	-
Bauxiet Instituut Suriname	Raymondo D. Emmanuels	Control & Monitoring Officer - Jr. Staff	A report is done on the shipments for export.	-	There is an existing problem of illegal exports of e-waste to Brazil also there are illegal imports from both Guyana and French Guiana.	The Bauxite Institute has a bigger role to play in the inspection of e-waste components together with other agencies.
Surinamer Customs Authority (Suriname Customs)	Dave Kamit	Customs Officer		-	-	Mr. Kamit explained that Customs does have a database for everything being imported into the country but is unaware if any system is in place to record data on items being exported. He indicated that there is a lack of export data because sometimes they are exported under different names.
Surinaams Standaarden Bureau (Suriname Bureau of Standards)	Mr. Pawirodinomo Murwin and Mrs. Razia Gaffar-Alli	Standards Officer	-	-	-	Mrs. Gaffar-Alli added that the public should be aware of how to buy better quality products. This would assist in regulating the volume of imports and waste which is created since there are no regulations preventing the imports of EEE. She indicated that electrical lights have always been a major issue which was raised in the Government. A campaign was held to promote the use of energy saver bulbs.
Ministry of Trade and Industry	Aroen Jadoenathmisier	Manager	-	-	-	-

Table A4-2: WEEE Stakeholder Responses - Banking Sector

Name of organisation	Name	Position/ Designation	1. What are the main categories of telecommunication and IT equipment used by your company?	2. What are the main brands of telecommunication and IT equipment used by your company?	3. Generally when the equipment is replaced is it new or second-hand?	4. What are the annual figures on the quantities of new equipment purchased and/or donated? (Please separate based on type of equipment e.g. ATM or Other IT & Tele Equipment)	5. What is the average lifespan of the equipment used? (Please separate based on type of equipment: e.g. ATM or Other IT & Tele Equipment)	6. What is the average turnover rate of your equipment used? (Please separate based on type of equipment: e.g. ATM or Other IT & Tele Equipment)	7. Is there a policy that guides how often equipment should be replaced?	8. If yes, please indicate the designated time frame and please differentiate by category of equipment if necessary.	9. If there is no such policy, what factors determine when new equipment will be purchased? (Select all that apply)	10. What is the general procedure for replacing equipment?
RBC Royal Bank	Avinash Biharie	IT Department	PC's, Laptops, Servers, Network equipment	Policy states: PC's - Lenova, Samsung screens Servers -IBM HP Printers	New	-	Follow up	Follow up	Yes	3-5 years	-	-
Hakrinbank N.V.	Armand Sewedi	Head ICT Department	-POS devices -PC's -Servers -Switches -Routers -Cables -Printers -Telephones	-IBM -HP, Dell, Lenova, ATM's - Dibold POS-Hypercom	All new	Currently have approximately 300 PC's in stock. Usually budgets for 100 new PC's every year.	PC's -4 years Printers -10 years	-	No	-	When the need arises – for example to facilitate increased productivity	No general procedure. PC's are replaced when they are non-functional

Table A4-2: WEEE Stakeholder Responses - Banking Sector

Name of organisation	Name	Position/ Designation	11. Do you have any arrangements for take-back of products with suppliers?	12. If yes, what are the quantities returned per annum? (Please separate based on type of equipment: e.g. ATM or Other IT & Tele Equipment)	13. What is the definition used for the End of Life (EoL) equipment within the company?	14. What is the general procedure for non-functional equipment: stored, dumped, sold, returned to originator, repaired, donated, refurbished or recycled? (Please separate based on type of equipment: e.g. ATM or Other IT & Tele Equipment)	15. If the equipment is sold or donated, who are the main clients?	16. What are the main factors behind retention of non-functional unwanted EEEs, (select as applicable) :	17. Where is this non-functional equipment stored?	18. What are the quantities of equipment stored? (Please separate based on type of equipment: e.g. ATM or Other IT & Tele Equipment)	19. Can you describe the data management system for records of stored, replaced and discarded equipment?
RBC Royal Bank	Avinash Biharie	IT Department	Yes	Only if it needs to be replaced, but no official records were available.	None	Stored and every year they are exported to be recycled. The company GEEP Global is used to recycle their e-waste.	None. During the RBTT period equipment were donated to schools but not anymore.	Policy dictates that parts are not to be removed. Equipment are stored to be exported annually to be recycled.	Internally	-	Data storage mechanism: manual entries, computerized etc.
Hakrinbank N.V.	Armand Sewedi	Head ICT Department	Yes	For IT equipment they are only returned if they are under the warranty period.	When the IT department decides that the equipment cannot be repaired.	Internal control needs to write off the equipment.	-	Internal parts can be used	-	-	None

Table A4-2: WEEE Stakeholder Responses - Banking Sector

Name of organisation	Name	Position/ Designation	20. Does your establishment have a policy for the management of e-waste?	21. If not, does your establishment intend to adopt a policy of e-waste management?	22. Would you be ready to pay for your electrical equipment to be collected and recycled?	23. If yes, at what conditions? (e.g. pick-up service, guarantee of proper disposal, etc.)	24. Does your company have any environmental certifications?	25. What knowledge do you have on the outcome of WEEE locally?	26. What knowledge do you have on treating WEEE?	27. Do you have any knowledge of the dangers of improper disposal of electronic equipment?	28. Where do you think the primary responsibility lies for dealing with WEEE?
RBC Royal Bank	Avinash Biharie	IT Department	Yes	-	Yes	Certification of proper treatment.	No	Sent to scrap dealers	Contains heavy metals.	Yes, pollutes the environment.	Everyone
Hakrinbank N.V.	Armand Sewedi	Head ICT Department	No	Eventually it will.	No	None	None	None	None	No	Government

Table A4-3: WEEE Stakeholder Responses - Corporate Sector

Name of organisation	Name	Position/ Designation	1.What types of electrical and electronic equipment are utilized at your establishment?	2.What are the major brands of equipment used? (Please separate based on type of equipment). Why were these particular brands selected?	3.What are the average lifespans of the equipment? (please separate based on type of equipment)	4.Do the lifespans vary according to brand? If yes, which brands last longer?	5.Who is responsible for keeping equipment inventories and how is the data stored?	6.What types of information on the equipment are recorded?	7.When do you procure equipment? (tick all that apply)	8.When additional equipment is purchased are they generally new or second-hand?	9. What are the annual figures on the quantities of new equipment purchased? (Please separate based on type of equipment).	From where do you procure equipment?	11.Who is responsible for equipment checks and for determining when parts or entire machines/apparatus need to be replaced or discarded? What is the procedure for replacement?	12.What is the definition used for the End of Life (EoL) of equipment within the organization?	13.What is the general procedure for EoL equipment/parts: Are they ?	14.What are the main factors behind retention of non-functional unwanted equipment, (select as applicable) :	15. Where is this non-functional equipment stored?
TELESUR	Steven Tjitrotaroeno	Deputy CTO & Manager Data Communications Service	Computing equipment, switches, routers, cooling systems, computing systems	IBM, CISCO (switches), HP (servers, printers & copiers), Ericsson, Hauwei	3 year policy on laptops, pc's, routers and switches	-	IT Department	Quantities, Serial numbers	When policy dictates	New, however in the past refurbished switches were bought from Airway but this was discontinued.	-	Laptops from a local dealer and other equipment from overseas manufacturer	IT Department is responsible for trouble shooting	Software limitations specified by the supplier.	-	-	-
IAMGOLD- Rosebel Gold Mines N.V.	Henk Ost	IT Departmrnt	Computing equipment, Mobile phones, DVR's solar panels	Computers- Dell Printers -HP, Canoon, Brothers They were based on the Parent's company choice in brand.	Computers- changes every 5 years Printers- 7 years	Can't say but the HP gives a better quality.	IT Department and the data is updated quarterly into an intranet database.	Quantities	When you see the need – for example to facilitate increased output of services, When policy dictates	New	-	A mix of both	IT Department	Most equipment are changed based on policy but for some, it will be when it's non-functional	Stored	Company policy: unsure of main reasons	Internally
STAATSOLIE	Dennis R. Mac Donald	Manager HSEQ	Field equipment - pumps, motors, generators Office - Computing equipment, control room equipment	Lenova, HP, Cannon, ABB transformers	Computers- 5 year policy Field equipment - repaired, parts are replaced	-	Production Operations department - they keep track of inventory	Quantities, Serial numbers	When policy dictates, Field equipment are kept in stock	New	-	Field equipment- overseas	-	-	-	-	-
STAATSOLIE	Dennis R. Mac Donald	Manager HSEQ	Field equipment - pumps, motors, generators Office - Computing equipment, control room equipment	Lenova, HP, Cannon, ABB transformers	Computers- 5 year policy Field equipment - repaired, parts are replaced	-	Production Operations department - they keep track of inventory	Quantities, Serial numbers	When policy dictates, Field equipment are kept in stock	New	-	Field equipment- overseas and has an agreement with a local supplier for computing equipment	Operations: perform maintenance and reliability testing	-	Computing equipment are auctioned off	Internal parts can be used	Internally
Suriname Aluminium Company, L.L.C.	Rigillio Bansie	Environmental Engineer	Computer equipment, Control system equipment, Variable frequency drives, analyzing meters	Lenova	Minimum of 3 years	-	Electrical Maintenance department, IT Department	Quantities, Serial numbers, Source/ Supplier information	Based on need (computers) & Based on inventory (there is a min and max value for stocks)	New	-	Overseas manufacturer/producer, Local wholesaler/retailer/distributor, Computers (local) other equipment (overseas)	General Maintenance Department and the IT Department	Computers- use until failure other electronics - no definition	Stored	Company policy: unsure of main reasons	Internally
Anton De Kom University	Winston Soetosenojo	Chief Network Administrator University Center for IT Services	Computing Equipment, Network Equipment, Printers	UPS: APC/ Forza CE: Logitec, Novamov, Dell, Lenova	UPS - 3years Desktop - 3-5 years	Never noticed any differences.	IT Department	Quantities, Values, Serial numbers, Source/ Supplier information, Purchase Date, Type of CPU	When you see the need – for example to facilitate increased output of services, When existing equipment have become obsolete, When funding becomes available	New	Desktops -30 per year Printers- 30 per year UPS - 30 per year	Overseas manufacturer/producer, Local wholesaler/retailer/distributor	IT department The have a procedure: Equipment is checked by technical assistants, they give purchasing advice.	They use the manufacturers definition only.	Stored	Parts are salvaged after the internal auditing process	Internally
Digicel	Ronaldo Veldma	SA/CX Manager	Backup batteries at cell sites Server Solar equipment (interior locations-42) Cables, Antennas Radio's IT equipment Radio bay station	IT Equipment - Cisco Power staion - Emerson Cell sites - Ericsson Generators - FG	6-8 years	They are all basically the same.	Store Supervisor using an Ericsson software	Quantities, Values, Source/ Supplier information, Type, Location	When existing equipment have become obsolete, Technology advancements and software updates	All new	They have annual bill of quantity which is done at the beggining of every year.	Overseas manufacturer/producer	ONM team is responsible for these activites	They replace when there are new technology advancements not necessarily when equipment is obsolete.	Stored	No ESM option available for disposal	Internally
EBS N.V.	Chiquita and Faye	HSQ and Senior Engineer	-Switches -Bulbs (street lights) -Meters -PC's and other computing equipment -Communication equipment	-Lenova, Dell, Apple *Follow up o brands of switches etc	switches - 40 years Currently in the process of replacing switches for the first time since establishment of EBS	Never noticed	-Automation and Testing of Transmission Department: Switches, transformers and other operational equipment. -IT Department: Computing equipment and peripherals	Quantities, Values, Serial numbers	When you see the need – for example to facilitate increased output of services, When funding becomes available	New	-	Overseas manufacturer/producer, Local wholesaler/retailer/distributor	-Manager of Trnasmissions Department -ICT department	Used until its no longer functional.	Stored	No ESM option available for disposal	Externally: e.g. warehouse
SurGold	Kirti Ramdin and Melissa	HSE team	Computing Equipment	Dell, IBM, HP, ACER	Computing: 2-5y, Networking 5y<, Printing 4-6y, Telephony 1-3y, Radio 2-4y, TV 2y	Yes, Cisco	IT Department and when it becomes a waste it is the responsibility of the HSE Department	Quantities, Values, Serial numbers, Model, Type of equipment	When you see the need – for example to facilitate increased output of services	New	N/A	Overseas manufacturer/producer, Local wholesaler/retailer/distributor	IT Department	Varies	Stored	No ESM option available for disposal	Internally
Suriname Princess Casino	Albert Rasoelbaks	Security & Human Resource Manager	CCTV systems, Computing equipment, machines	EGT, Euroganes, Novamatic, HP, Cannon	Machines: 5 years CE > 5 years or less	Yes but it depends on the product, brand and quality obtained from producer.	IT and Slot Technical Department	Serial numbers, Source/ Supplier information, Specs, model number, brand	When existing equipment have become obsolete, Depends on new technology	New	The figures for machines varies. With respect to computing equipment mainly parts are purchased.	Overseas manufacturer/producer, Local wholesaler/retailer/distributor	IT and Slots technical Department with permission from the managers from each department.	When they are non-functional (CE) For the machines the manager of the Sots Technical department determines when equipment are no longer functional.	Stored	Internal parts can be used	Externally: e.g. warehouse

Table A4-3: WEEE Stakeholder Responses - Corporate Sector

Name of organisation	Name	Position/ Designation	16.What are the quantities of equipment stored?	17.Do you have any arrangements for take-back of any equipment with suppliers?	18.Does your establishment have any environmental certifications?	19. Does your establishment have a policy for the management of e-waste?	20. If no to previous question, does your establishment plan to adopt a policy of e-waste management?	21. Would you be ready to pay for your electrical equipment to be collected and disposed of or recycled?	22. If yes, at what conditions? (e.g. pick-up service, guarantee of proper disposal, etc.)	23. What knowledge do you have on the outcome of WEEE locally (what happens to it)?	24. From your point of view, what are the main obstacles for proper e-waste treatment in general?	25. What knowledge do you have on treating WEEE?	26. Do you have any knowledge of the dangers of poorly treated or mismanaged WEEE?	27. In your opinion, do you think the average person in Suriname is aware of the environmental and health risks associated with improper disposal of WEEE?	28.What reasons do you think account for this?	29. Where do you think the primary responsibility lies for dealing with WEEE?	30. Do you have any other relevant information that you wish to share at this point in time?
TELESUR	Steven Tjitrotaroeno	Deputy CTO & Manager Data Communications Service	-	-	No	No	It depends on the severity of the effects.	No	-	They dumped and sent to the landfills.	Policies should be in place to increase the awareness, thus changing the mind set of the public.	No	No	No	Awareness and proper legislations	It lies with the owner of the waste.	-
IAMGOLD- Rosebel Gold Mines N.V.	Henk Ost	IT Departmrnt	-	No	ISO 14001-2004 OSHA 18001-2007	No	Has an integrated environmental health and safety policy. Yes	Yes	Must be picked up and properly disposed of with some assurance.	It is usually dumped.	Lack of options and facilitities. More campaigns and legislation made by the Government.	Some components can be recycled especially the metal parts.	-Aware of the Impact of toner powder - Can pose as a health risk	No	Awareness	With the owner or user of the product.	-
STAATSOLIE	Dennis R. Mac Donald	Manager HSEQ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
STAATSOLIE	Dennis R. Mac Donald	Manager HSEQ	-	No	No. Internal HSE policy.	No	Yes	Yes	Proper disposal of equipment.	Goes to the landfill	There is not a facility available to provide companies and the public with a proper waste disposal option.	Basic knowledge	Basic knowledge	No	Lack of education and awareness	Joint effort between the Government and Companies	-
Suriname Aluminium Company, L.L.C.	Rigillio Bansie	Environmental Engineer	-	No. Currently trying to force Cannon to take back used ink cartridges due to their recycling policy.	ISO 14001 - 2004	No		Yes	The Waste must be properly disposed off and since Alcoa mandates that waste must be audited and monitored.	Disposed into the landfills	Willingness to the Government to make and enforce legislation in the public domain.	No	Yes exposure to humans and animals are dangerous and also leaching is a major problem.	-	The public dos not see the importance and awareness	Creating a facility for treatment and the waste disposal should the responsibility of the user.	-
Anton De Kom University	Winston Soetosenojo	Chief Network Administrator University Center for IT Services	-	Only for equipment that are still on warranty.	ISO 9001 in the science labs only	No	Have not decided yet.	Yes	Must be certified and must provide transportation services.	Not aware of any company in Suriname that collects e-waste. It only goes to the landfill.	Lack of expertise to set up a management process.	General knowledge on the dismantling equipment to be recycled.	They contain heavy metals in the motherboards.	No	Lack of education, not much information available on the dangers	Government, All stakeholders and NGO's	No
Digicel	Ronaldo Veldma	SA/CX Manager	-	Yes they do throughout the lifetime of the equipment.	No	No	Yes	Yes	Can guaranty that it is properly disposed off	Dumped in the landfill	In 3rd world countries setting up a treatment facility is not viable.	None	Contains heavy metals and can contaminate the soil and water	No	Lack of awareness	NEMOS, Ministry of ATM, Ministry of Health	No
EBS N.V.	Chiquita and Faye	HSQ and Senior Engineer	-	No	ISO 17001	No	Yes	Yes	EBS will give specific requirements and they have to be complied with.	None	Availability of treatment facility	Information provided by the EPA	Yes, presence of heavy metals.	No	Lack of awareness	Private sector Ministry of ATM Ministry of Public Works	No
SurGold	Kirti Ramdin and Melissa	HSE team	n/a	No	No	No	They plan to adopt a hazardous waste policy and yes e-waste is listed as one their hazardous wastes.	Yes	Company must be certified	Dumped in Landfill	No options available.	Dismantling and separation of metals and plastic	Have knowledge on the leaching of heavy metals	No	Awareness	With everyone	No
Suriname Princess Casino	Albert Rasoelbaks	Security & Human Resource Manager	They keep logs of all equipment that are stored.	They get customer support from all major brands for repair and replacement.	-	No	No	No	-	-	-	-	-	-	-	Government should provide options for treatment. Department of Health Police BCRC	-

Table 4-4: WEEE Stakeholder Responses - ICT Sector

Name of organistaion	Name	Position/ Designation	1.What types of IT& telecommunications equipment are utilized at your establishment?	2.What are the major brands of IT& telecom equipment used? (Please separate based on type of equipment). Why were these particular brands selected?	3.What are the average life spans of the equipment? (Please separate based on type of equipment).	4.Do the lifespans vary according to brand?	If yes, which brands last longer?	5.Who is responsible for keeping equipment inventories and how is the data stored?	6. What types of information on the equipment are recorded?
TELESUR	Steven Tjitrotaroeno	Deputy CTO & Manager Data Communications Service	Computing equipment, switches, routers, cooling systems, computing systems	IBM, CISCO (switches), HP (servers, printers & copiers), Ericsson, Hauwei	3 year policy on laptops, pc's, routers and switches	-	IT Department	Quantities, Serial numbers	When policy dictates
Intelsur N.V.	Mrs. Genevieve Sairras	Legal Officer	Primarily computing equipment and larger networking equipment.	The main brands used for computing equipment are HP and Canon. This was derived from their affiliation with United Telecommunications Services (UTS), of which Uniqa was the UTS Suriname-based subsidiary. Will follow up to confirm this information.	All of the equipment lifespans vary but they will generally last about 5 years. Will follow up.	Yes	Not sure, will follow up.	The IT department maintains their own inventory in an Excel spreadsheet which they manage internally.	Will follow up to confirm.

Table 4-4: WEEE Stakeholder Responses - ICT Sector

Name of organistaion	Name	Position/ Designation	7.When do you procure equipment? (tick all that apply)	8.When additional equipment is purchased are they generally new or second-hand?	9.What are the annual figures on the quantities of new equipment purchased? (Please separate based on type of equipment).	10.From where do you procure equipment?	11.Who is responsible for equipment checks and for determining when parts or entire machines/apparatus need to be replaced or discarded? What is the procedure for replacement?	12.What is the definition used for the End of Life (EoL) of equipment within the organization?	13.What is the general procedure for EoL equipment/parts: Are they stored, dumped, sold, returned to originator, repaired, donated, refurbished or recycled?	14.What are the main factors behind retention of non-functional unwanted equipment, (select as applicable) :
TELESUR	Steven Tjitrotaroeno	Deputy CTO & Manager Data Communications Service	New, however in the past refurbished switches were bought from Airway but this was discontinued.	-	Laptops from a local dealer and other equipment from overseas manufacturer	IT Department is responsible for trouble shooting	Software limitations specified by the supplier.	-	-	-
Intelsur N.V.	Mrs. Genevieve Sairras	Legal Officer	At the start of operations in 2007, an initial stock inventory was filled. Since then, procurement has been based on replacement on as-needed basis. For smaller quantities, IT would do the procurement. However, for larger quantities, an internal Purchasing Evaluation Committee would make the decision on these items.	The company purchases new equipment only.	Don't know, will follow up.	Local wholesaler/ retailer/ distributor, Equipment were originally procured through some international companies when they were under UTS.	For the computing equipment, IT will perform the requisite checks. For the big networking equipment, the suppliers will do so (2G - Huawei, 3/4G - Ericsson).	There is no internal definition for EoL - equipment are generally used until they are no longer functional.	Not sure, will follow up.	Not sure, will follow up.

Table 4-4: WEEE Stakeholder Responses - ICT Sector

Name of organistaion	Name	Position/ Designation	15.Where is this non-functional equipment stored?	16. What are the quantities of equipment stored?	17.Do you have any arrangements for take-back of any equipment with suppliers?	18.Does your establishment have any environmental certifications?	19.Does your establishment have a policy for the management of e-waste?	20. If not, does your establishment plan to adopt a policy of e-waste management?	21.Would you be ready to pay for your electrical equipment to be collected and disposed of or recycled?	22. If yes, at what conditions? (e.g. pick-up service, guarantee of proper disposal, etc.)
TELESUR	Steven Tjitrotaroeno	Deputy CTO & Manager Data Communications Service	-	-	-	No	No	It depends on the severity of the effects.	No	-
Intelsur N.V.	Mrs. Genevieve Sairras	Legal Officer	Internally	Not sure, will have to follow up.	Only within the stipulated warranty period for the computing equipment bought.	No	No	Not sure, perhaps in the future.	Yes	This is 50/50. If there were a legal requirement, then they would have not choice. It will also be done as a part of the company's CSR initiative if it is identified as a priority locally and if there is a good price associated

Table 4-4: WEEE Stakeholder Responses - ICT Sector

Name of organistaion	Name	Position/ Designation	23. What knowledge do you have on the outcome of WEEE locally?	24.What knowledge do you have on treating WEEE?	25.Do you have any knowledge of the dangers of poorly treated or mismanaged WEEE?	26. Where do you think the primary responsibility lies for dealing with WEEE?	27. Do you have any other relevant information that you wish to share at this point in time?
TELESUR	Steven Tjitrotaroeno	Deputy CTO & Manager Data Communications Service	They dumped and sent to the landfills.	Policies should be in place to increase the awareness, thus changing the mind set of the public.	No	No	No
Intelsur N.V.	Mrs. Genevieve Sairras	Legal Officer	None.	None.	Yes, that can lead to diseases when burnt such as cancers because of the toxic substances.	Government, customers and suppliers.	-

Table A4-5: WEEE Stakeholder Responses - Medical Services Sector

Name of organisation	Name	Position/ Designation	1.What types of medical equipment do you utilize at your establishment?	2.What are the major brands of medical equipment used? (Please separate based on type of equipment). Why were these particular brands selected?	3.What are the average life spans of the equipment? (please separate based on type of equipment)	4.Do the lifespans vary according to brand?	5. If yes, which brands last longer?	6.Who is responsible for keeping equipment inventories and how is the data stored?	7.What types of information on the equipment are recorded?	8.When do you procure equipment? (tick all that apply)	9. When additional equipment is purchased are they generally new or second-hand?
Streekziekenhuis Hospital	Rudi Karijo	Head Technical Department	x-rays, ultrasound, lab equipment, operating equipment, personal computers, printers.	Phillips, Toshiba, Simons, GE, Black & Decker, Acer, Cannon, HP	x-ray - 10yrs Computing equipment approximately 5 yrs	No	They buy whatever the budget allows and only when things are needed.	An employee in the department completes the database on excel	Quantities, Serial numbers, Source/ Supplier information, Location, service time, model, make, type of equipment	When funding becomes available	new equipment is purchased. But 5 years ago bought second hand equipment from Europe but when repairs are to be done the documents are not available so they were sent to scrap dealers.
Academisch Ziekenhuis Paramaribo	Steve Ngalizedjo & Gordon Voigt	Manager ICT Department & Manager of Health Care Technology Department	Computing Equipment: PC's, Printers, Laptops Medical Equipment: Clinical technology, Operating Technology, Imaging Technology	Computing Equipment: Dell, HP, Brother Medical Equipment: ?	Computing Equipment: 3-5 years Medical Equipment: 7 year (administrative policy)	No	Computing Equipment: Shifting towards the same brands (no difference in lifespan is noticed) Medical Equipment: The get a lot of high quality brands such as GE and Toshiba, (no difference in lifespan is noticed)	Computing Equipment: ICT Department Medical Equipment: Gordon Voigt	Values, Serial numbers	When you see the need - to meet patient demand	Computing Equipment: New Medical Equipment: New for the past 2 years

Table A4-5: WEEE Stakeholder Responses - Medical Services Sec

Name of organisation	Name	Position/ Designation	10.What are the annual figures on the quantities of new equipment purchased? (Please separate based on type of equipment).	11. Form where do you procure equipment?	12.Who is responsible for equipment checks and for determining when parts or entire machines/apparatus need to be replaced or discarded? What is the procedure for replacement?	13.What is the definition used for the End of Life (EoL) of equipment within the hospital/health authority?	14.What is the general procedure for EoL equipment/parts: Are they stored, dumped, sold, returned to originator, repaired, donated, refurbished or recycled?	15.What are the main factors behind retention of non-functional unwanted equipment, (select as applicable) :	16. Where is the non-functional equipment stored?	17. What are the quantities of equipment stored?	18. Do you have any arrangements for take-back of any equipment with suppliers?	19. Does your establishment have any environmental certifications?
Streekziekenhuis Hospital	Rudi Karijo	Head Technical Department	-	Overseas manufacturer/ producer, Local wholesaler/ retailer/ distributor	Servicing personnel from suppliers. The head of the technical department is responsible for making the final decision to replace equipment. When he speaks to his director and gets the authorisation new equipment is bought.	When it is totally no longer functional.	Parts are salvaged by IT department for refurbishment of computing equipment. Medical equipment is dumped together with other waste. The waste are not stored they are removed from the compound as soon as possible	-	-	-	-	No
Academisch Ziekenhuis Paramaribo	Steve Ngalizedjo & Gordon Voigt	Manager ICT Department & Manager of Health Care Technology Department	Follow up	[10% overseas 90% local distributors (pre 2013)] [40% overseas, 60% local distr. (Post 2012)]	Computing Equipment: The servicing department will determine if the device can be repaired or not. Medical Equipment: Gordon uses his technical expertise together with the advice from other colleagues to determine if equipment should be repaired or replaced.	The hospital has no official definition for end of life, but based on practices it is when equipment is no longer functional.	Computing Equipment: Most of the time functional hard drives are salvaged. Medical Equipment: Parts are not salvaged to repair other equipment. All equipment are placed in a bin. A company is payed to come and collect the waste.	Internal parts can be used	Internally	No records	No	ISO 15224

Table A4-5: WEEE Stakeholder Responses - Medical Services Sec

Name of organisation	Name	Position/ Designation	20. Does your establishment have any policy for the management of e-waste?	21. If not, does your establishment plan to adopt a policy of e-waste management?	22. Would be ready to pay for your electrical equipment to be collected and disposed of or recycled?	23. If yes, at what conditions? (e.g. pick-up service, guarantee of proper disposal, etc.)	24. What knowledge do you have on the outcome of WEEE locally?	25. What knowledge do you have on treating WEEE?	26. Do you have any knowledge of the dangers of poorly treated or mismanaged WEEE?	27. Where do you think the primary responsibility lies for dealing with WEEE?
Streekziekenhuis Hospital	Rudi Karijo	Head Technical Department	No	They are in the procedure of setting up an internal policy.	Yes	Yes if the Government puts pressure on scrap dealers who collects waste.	None	None	None	Hospital itself
Academisch Ziekenhuis Paramaribo	Steve Ngalizedjo & Gordon Voigt	Manager ICT Department & Manager of Health Care Technology Department	Yes	They are in the process of implementing this policy.	Yes	The company must be certified and proof of ESM of waste must be received.	Scrap dealers collect them or either sent to the landfill.	None	Only knows about radioactive material in x-ray machines.	User and generators of waste should be the ones responsible. The Government should also guide and oversee the process

Table A4-6: WEEE Stakeholder Responses - Environmental Agencies

Name of Organisation	Name	Position/ Delegation	1. Are waste electronic and electrical equipment considered hazardous/special waste in your country? Why is it categorised as hazardous/special waste?	2. Are there any laws/acts in place that address management of e-waste?	3. If yes please describe.	4. If no. Are there any plans in place for an e-waste management strategy in your country?	5. What is your country's/organisation's definition of e-waste?	6. Are there any recycling efforts available in your country for e-waste in your country?	7. If yes, please give details and state whether these fall under the private or public sector.	8. Does the national government provide subsidies for the management of hazardous/special waste?
Ministry of Labour, Technological Development and Environment	Shelley Soetosenojo	Deputy Director Environmental Policy Monitoring	They are not classified as hazardous/special waste	No		Not yet	No definition defined yet.	No		No
Ministry of Labour, Environment & Technology	Bjorn Pang Atjok	Directorate of Environment	Special Waste	No		No	There is no definite definition for e-waste described by the Ministry, but it is any electrical or electronic item that has come to its end of life period.	No		No

Table A4-6: WEEE Stakeholder Responses - Environmental Agenc

Name of Organisation	Name	Position/ Delegation	9. Are there penalties or fines charged for the improper disposal of hazardous/special waste?	10. Have there ever been any e-waste management strategies conducted in your country? Which organisation spearheaded the activities and what was the outcome? Please indicate if these are in the past or still in progress.	11. If there have been strategies for e-waste management in your country but have failed, what do you believe are the reasons they failed	12. What would you say are barriers to the implementation of an e-waste management system? Please note that management includes waste reduction, waste collection, waste treatment and waste disposal.	13. What knowledge do you have on treating WEEE?	14. What knowledge do you have on the outcome of WEEE locally?	15. Do you have any knowledge of the dangers of improper disposal of electronic equipment?	16. Where do you think the primary responsibility lies for dealing with WEEE?
Ministry of Labour, Technological Development and Environment	Shelley Soetosenojo	Deputy Director Environmental Policy Monitoring	None yet	none	N/A	Lack of legislation, insufficient enforcement,	None	None	Basic knowledge	A joint responsibility between the consumer and producer
Ministry of Labour, Environment & Technology	Bjorn Pang Atjok	Directorate of Environment	No	There were inventory projects for the collection of e-waste, but these were in the past.	It is very difficult to get inventory data, or even collection of e-waste from the interior of Suriname	There is no solution or management system available for e-waste which is the failure of the entire system. It is not only a matter of awareness.	It must be collected, sorted and dismantled and treated according to whether parts can be recycled.	The e-waste basically is sent to the landfills. The scrap dealers collect e-waste then take the useful metals and dump the rest.	Yes, leaching etc	It lies with both the private sector and the Government.

Table A4-7: WEEE Stakehlder Responses - Mobile Phone Companies

Name	Name of organisation	Position/ Delegation	1.Does your company distribute electrical or electronic devices other than mobile phones? If yes, please specify.	2.How many different brands are distributed by your company? What are the main brands of phones or other mobile devices distributed?	3.Which are the fastest selling brands? What reason(s) do you think account for this?	4.What is the average lifespan of the mobile devices you distribute?	5.Does the lifespan vary based on the brand?	6.Do you use a particular set of criteria when selecting which brands you distribute?	7. What is the procedure for replenishing your stocks?
Steven Tjitrotaroeno	TELESUR	Deputy CTO & Manager Data Communications Services	Yes. Mobile phones, modems, routers, wireless optical transfer units, electronic cables, landline phones, PBX and extensions	Several brands. Mobile Phones: Blackberry, Samsung, Nokia, Apple, Haus, Houwie Tablets: Samsung, Apple Modems: Houwei, Star Bridge PBX: Avaya, Nortel	In the Past: Nokia and Blackberry Now: Samsung and Apple	This depends on both the brand and the user. Apple: 2-3 years Blackberry: 2 years	Yes and price is also a factor	Customer preference, Cost effectiveness	Re-order based on demand/low stocks?
Mrs. Genevieve Sairras	Intelsur N.V. / Uniqa	Legal Officer	Tablets in addition to the mobile phones (smart phones and otherwise).	Samsung, Blackberry, Blu, Nokia, Sony and Apple iPhones.	Samsung, Blu and Blackberry are the fastest selling brands. Popularity of the brand and the cost.	It varies widely, but would average approximately 1 year. Will have to do further follow up on the matter.	Yes it does but it also varies in accordance with the usage of the phones.	Customer preference, Market forces, The company tries to provide a good range of products primarily based on what is popular among customers.	Re-order based on demand/low stocks?

Table A4-7: WEEE Stakehlder Responses - Mobile Phone Compar

Name	Name of organisation	Position/ Delegation	8.How often do you need to replenish your stocks? What is the average (selling) turnover rate of your products?	9. What are the annual figures on the quantity and weights of stocks imported?	10.What are the annual figures on the quantity and weights of stocks sold?	11.Is there a particular time period when sales are highest?	12.What is the procedure for dealing with unsold stock?	13.Who is responsible for keeping stock inventories and how is the data stored?
Steven Tjitrotaroeno	TELESUR	Deputy CTO & Manager Data Communications Services	Quick turnover of stock because we sell unlocked phones.	*Follow up on amounts	*follow up	Christmas	Stocks are always sold out.	Use of the EXACT program to keep records.
Mrs. Genevieve Sairras	Intelsur N.V. / Uniqa	Legal Officer	It varies. Originally, stocks were bought through UTS, but since that has recently ended and Uniqa is now operating independently, they will now have to define how stocks are bought. Restocking rates of the phones and tablets are based on promotions or depletion of stockpiles as well as on what is popular on the market and also based on the time period. However, replenishment rates for Samsung are generally faster than Blackberry and Blu is also quite fast as well.	Not sure, will have to follow up.	Not sure, will have to follow up.	There are some seasonal variations. For instance, there is a local trade fair in November for all businesses through the Chamber of Commerce. Lots of people wait until this trade show to buy phones and tablets because of the promotions offered. A lot of sales also take place during Christmas and again in August because of the vacation period and disbursement of associated vacation allowances.	This is not applicable. Phones are all sold and some are provided to employees on contract until their termination or unless they are no longer working and need to be changed.	The Stock Manager who is situated under the Finance Division. The company uses SAP software.

Table A4-7: WEEE Stakehlder Responses - Mobile Phone Compar

Name	Name of organisation	Position/ Delegation	14.What type of information is recorded and stored?	15.Is there a particular time period when sales are the highest?	15.Do you have any arrangements for take-back of products with suppliers and/or customers?	16. If yes, what are the quantities annually?	17.Are there any additional services your company provides to customers with regard to maintenance and care of the product? If yes, please expand (For example: Where are parts sourced from? What happens to unwanted parts? What happens to irreparable products?).	18. Does your company have any environmental certifications?	20. Does your company have a policy for the management of e-waste?
Steven Tjitrotaroeno	TELESUR	Deputy CTO & Manager Data Communications Services	Brand, model, IMEI number Modems: Serial numbers	Only at christmas	No		In the past there was a leasing policy on the modem, but now customers have to buy new modems if they are non-functional. Presently there are no take back policies or repairing of equipment.	No	No
Mrs. Genevieve Sairras	Intelsur N.V. / Uniqa	Legal Officer	The name and the serial number are recorded but will have to follow up on what else is recorded.		Yes	Customer take-backs will occur only during the warranty period, which is typically 1 month and will be an exchange for the very same item. When products come from the supplier, checks in each batch is made and if one is not working, the entire batch is sent back.	No additional services are provided. Only the provision of new phones.	No.	No

Table A4-7: WEEE Stakehlder Responses - Mobile Phone Compar

Name	Name of organisation	Position/ Delegation	21. If not, does your company plan to adopt a policy of e-waste management?	22. What knowledge do you have on the outcome of WEEE locally?	23.What knowledge do you have on treating WEEE?	24.Do you have any knowledge of the dangers of WEEE?	25.Where do you think the primary responsibility lies for dealing with WEEE?	26. Do you have any other relevant information that you wish to share at this point in time?
Steven Tjitrotaroeno	TELESUR	Deputy CTO & Manager Data Communications Services	They have and HSSE department . Planning to adopt ISO 27001 (Information Security Management)	No	No	No	The Government should be held responsible for making policies and enforcing them.	(Information from Ms. Zoila Sallons, Marketing and Sales-Interior at Telesur) There are currently discussions taking place internally to have a trade-in promotion with the interior communities. This is expected to comprise of either the provision of a new phone or discounts for the purchase of a new phone when customers trade in their 2G phones.
Mrs. Genevieve Sairras	Intelsur N.V. / Uniqa	Legal Officer	Not sure, perhaps in the future.	None.	None.	Yes, that can lead to diseases when burnt such as cancers because of the toxic substances.	Government, customers and suppliers.	No.

Table A4-8: WEEE Stakeholder Responses - Photovoltaic Cells Distributor

Name	Name of organisation	Position/ Delegation	1. Can you provide some background information on your company?	2. Who are your main clients?	3. What are the main brands/models of products distributed?	4. What are the annual figures on the quantity and weights of these products imported?	5. What are the annual figures on the quantity and weights of these products sold?	6. What is the average lifespan of the products you distribute?	7. Does the lifespan vary based on the model/brand?	8. Is there a particular time period when sales are the highest?
Drs. Ornella Naarden	Guguplex technologies SAC	Operations Supervisor	Solar engineering company serving the needs of the customer (organisations, residential, govt.)	Main clients are residents living in the interior of Suriname. There is no electricity available in these areas	Darsol, Sino solar *follow up	Operational for 3 years *follow up	*follow up	*follow up	Panels- 30 yrs, Batteries (Chinese – 1.5 yrs, Canada- 5 yrs)	Since operation began there has been an increase in sales

Table A4-8: WEEE Stakeholder Responses - Photovoltaic Cells Dis

Name	Name of organisation	Position/ Delegation	9. Do you use a particular set of criteria when selecting which models you distribute?	10. Where are the products sourced from?	11. What is the procedure for replenishing your stock?	12. How often do you need to replenish your stocks of products?	13. Who is responsible for keeping stock inventories and how is the data stored?	14. What is the procedure for dealing with unsold stock?	15. Do you have any arrangements for take-back of any products with suppliers and/or customers?	16. If you do not have a take-back arrangement with customers, do you provide them with information with respect to proper disposal of the equipment at the end of its life?
Drs. Ornella Naarden	Guguplex technologies SAC	Operations Supervisor	Design based on efficiency/quality	China- Panels USA- Batteries Canada- Batteries	Re-order based on demand, Re-order in bulk based on a pre-defined time period	Demand is continuously increasing thus stocks are replenished based on demands	Store employees are responsible for keeping track of stocks. Data is stored based on component and its technical specifications.	Include them in packages with other devices	Manufacturers –Yes Customers- manufacturing defects only	Batteries are stored in the store until a viable solution is found.

Table A4-8: WEEE Stakeholder Responses - Photovoltaic Cells Dis

Name	Name of organisation	Position/ Delegation	17. Are there any additional services your company provides to customers with regard to maintenance and care of the product (s)? If yes, please expand.	18. Does your company have any environmental certification?	19. Does your company have a policy for the management of e-waste?	20. If no, does your company plan to adopt a policy of e-waste management?	21. What knowledge do you have on the outcome of WEEE locally?	22. Do you have any knowledge of the dangers of poorly treated/ mis-managed WEEE?	23. Where do you think the primary responsibility lies for dealing with WEEE?
Drs. Ornella Naarden	Guguplex technologies SAC	Operations Supervisor	No repairs etc	No	No	Yes as the company begins to expand.	Items are dumped.	Basic knowledge	Responsibility lies with the user and govt needs to make more legislations on waste management

Table A4-9: WEEE Stakeholder Responses - Waste Collectors.

Name	Name of organisation	Position/ Delegation	1.What system of categorisation do you use for waste arriving at the landfills? If not a category by itself, which category does e-waste fall under?	2.Are there any specific types of WEEE that you see coming in more than others?	3.Do you have any data on the average annual quantities of WEEE arriving at the landfills? Have any trends been observed?	4.What may account for the trends observed in the volumes and types of WEEE coming in?	5.From observation, what dismantling/recovery activities have you seen occurring in and around the landfill sites involving materials from EEE?	6. What specific materials are recovered? e.g. copper, iron	7. What methods of dismantling/ recovery are employed?	8. Do you think persons are aware of the potential health and safety risks involved when dealing with WEEE?
Glenn Ramdjar	Amerco Recycling	-								

Table A4-9: WEEE Stakeholder Responses - Waste Collectors.

Name	Name of organisation	Position/ Delegation	9. Are there any restrictions to the waste arriving at the landfills?	10. To what type of waste do these restrictions apply?	11. How are these restrictions enforced? (Who is responsible for enforcement and what are the sanctions and breaching?)	12.Are there any procedures that must be followed when transactions, such as the handing over of waste to these companies, occur? If yes, please describe.	13. Who are the persons involved in the treatment and what specific qualifications, if any, must they have?	14. What safety precautions are taken when this waste is handled?	15. Is there are a procedure for sorting waste before treatment? If yes, please describe.	16. What is the ratio of mechanical to manual labour at landfill sites?
Glenn Ramdjar	Amerco Recycling	-	Yes	Tyres	Ministry of Public Works					

Table A4-9: WEEE Stakeholder Responses - Waste Collectors.

Name	Name of organisation	Position/ Delegation	17. Who is responsible for data collection?	18. How is the data stored (manually, spreadsheets, etc.) and in what format (what parameters are used)?	19. What are the main challenges your Ministry experiences in terms of managing and treating e-waste?	20.Do you have knowledge of alternative treatment or disposal procedures/facilities for WEEE in Suriname?	21.Do you have knowledge of the local markets for the components of dismantled WEEE?	22.Where do you think the primary responsibility lies for dealing with WEEE?	23.Do you believe there are opportunities for potential recycling or re-use of WEEE via linkages to organizations?	24.In your opinion, do you think the average person in Suriname is aware of the environmental and health risks associated with improper disposal of WEEE?
Glenn Ramdjar	Amerco Recycling	-				No	No, only scrap metal.	The Government needs to make regulations and provide options for dealing with the different waste streams.	Yes	No

Table A4-9: WEEE Stakeholder Responses - Waste Collectors.

Name	Name of organisation	Position/ Delegation	25.What reasons do you think account for this?	26.Do you have any suggestions for improving the e-waste management system in the country?	27.From your point of view, what are the main obstacles for proper e-waste disposal and e-waste treatment in general?	28.Do you have knowledge of alternative data sources of WEEE generation rates for Suriname?	29. What data collection/ data management procedures are in place?
Glenn Ramdjar	Amerco Recycling	-	Lack of information and education about e-waste.	Legislation/Regulations, awareness and collection and storage areas.	The volumes that are being generated are too small for a business but they are still too much to be left in the environment. This cannot be done as a		

Table A4-10: WEEE Stakeholder Responses - Waste Recyclers.

Name	Name of organisation	Position/ Delegation	1.For how long have you been in operation?	2.What was the motivation for getting into the recycling business?	3.What types of waste material are recycled by your company? Why were these chosen?	4.Is there a system for determining or defining End of Life (EoL) for waste? For instance, how do you determine if something can be recycled or not?	5.What is the fate of items that cannot be recycled?	6.What procedures do you utilize when handling and treating the waste?	7.Is recycling done in the country or are the items shipped abroad to be recycled?	8.If items are shipped abroad for recycling, can you provide information on: Volumes shipped? Final market? Knowledge of the WEEE after shipment?
Lalieta Somwaru	ReComSur	HSEQ Manager	6 years	There is no facility in Suriname to help with the proper disposal of waste. Everything is sent to the landfills. Boss saw PET bottles everywhere and decided to do something about it.	Laptops, Monitors, keyboards, mouse etc	No	Basis of the agent collecting it. There are still e-waste stored in a container.	Segregation of the components and storage	Agent will come in and take the items he desires and he then ships them to another country. The agent took, cpu's old monitors, keyboards	*follow up

Table A4-10: WEEE Stakeholder Responses - Waste Recyclers.

Name	Name of organisation	Position/ Delegation	9.What are the approximate quantities of waste received annually?	10.Who are your major clients?	11.What is the general trend of WEEE received? Any reasons that may account for this?	12. Can you describe the data collection procedure? (For example: What general type of information is collected? How often is data collected? Who holds the responsibility for collection?)	13.Can you describe the data management system, in terms of: Storage mechanism, Procedure, Type of system employed (standard/international/in-house).	14. What is the staff size?	15. What general qualifications are required for employment?	16.Are there training sessions during the employment term? (More specifically for: Dealing with current waste stream? Dealing with shifts in the waste streams? How frequently are these training sessions carried out?)
Lalieta Somwaru	ReComSur	HSEQ Manager	N/A	Small companies, multinationals, households	Companies usually provide an inventory list	Type Quantity Brand	Waste transfer note is given to clients so they can track their waste.	from 30 it decreased to 7	Basic education In-house training is provided	Training sessions are carried out every 3 months Training on the usage of PPE Lifting and /handling waste

Table A4-10: WEEE Stakeholder Responses - Waste Recyclers.

Name	Name of organisation	Position/ Delegation	17. What are the service charges for WEEE generators and how are they determined?	18. What methods are used to attract clients?	19.What are the main challenges your company experiences with respect to waste collection and treatment?	20.Does your company have any relevant local or global certifications?	21.If yes, are there any challenges related to gaining certification: E-Steward, MAR? (For example: requirements, time frame)	22.Does your company have a WEEE policy?	23.Why was Suriname selected as a location site for the company:	24.Do you believe there is potential for expansion of the WEEE treatment market locally (esp. w.r.t volume generation rates) or is it still a niche sector?
Lalieta Somwaru	ReComSur	HSEQ Manager	Minimum transport cost	Advertising/ Marketing campaign, None: Companies take their own initiative	No legislation, Getting people to pay	Yes	No. ISO 9001 and ISO 14001	Stopped after pilot phase	Not applicable	Maybe, but will not invest i complete recycling of waste. Only complete dismantling. Maybe looking at a regional approach.

Table A4-10: WEEE Stakeholder Responses - Waste Recyclers.

Name	Name of organisation	Position/ Delegation	25.Where do you think the primary responsibility lies for dealing with WEEE?	26.What do you think is the general public perception of WEEE?	27.What small-scale activities can be implemented to reduce the WEEE generation locally?	28.What are your thoughts on the future WEEE trend locally and globally?	29.Do you have knowledge of alternative data sources of WEEE generation rates for Suriname?	30.What policies or systems do you believe should be implemented to improve the existing WEEE management system?
Lalieta Somwaru	ReComSur	HSEQ Manager	Government should provide information, guidance and legislations	It is not a major concern.	Promote the reuse of wastes.	-	Customs Division	Promotion of awareness

Table A4-11: WEEE Stakeholder Responses - Scrap Dealers.

Name	Name of organisation	Position/ Delegation	1. For how long have you been in operation?	2. What was the motivation for getting into the scrap metal business?	3. From where do you obtain/collect your scrap material?	4. Do you import any scrap material to be sold locally? If yes, from which country/countries and in what quantities?	5. What types of WEEE/scrap material does your establishment receive and sell?	6. What activities are carried out at your establishment? (please tick all that apply)	7. Please provide a brief description of each activity, including the processes, materials and safety measures that are involved.	8. How many persons are employed at your establishment?
Mitranand Jokhoe	Multi Options	Managing Director	35 years	They were in the scrap metal business and there would usually be e-waste in the scrap that they receive.	Companies and private individuals. Small collectors go around and then return after sometime.	No	Mainly smaller electronic equipment.	Scrap purchase, Sorting, Dismantling, Sale to other scrap dealers, Export	All employees are provided with all safety equipment these are as follows: gloves, boots, helmets etc.	Nickerie- 8 Paramaribo - 23
Mr. Babel	Scrapyard	Owner	5 years	Use to buy and sell parts and some began to accumulate.	General public and private companies	No	Large and small household appliances and computing equipment.	Sorting, Dismantling		8 employees

Table A4-11: WEEE Stakeholder Responses - Scrap Dealers.

Name	Name of organisation	Position/ Delegation	9. How many persons are delegated per activity?	10. What is the ratio of mechanical to manual labour overall and/or per activity?	11. How often does purchase/collection take place? (daily/weekly/other)	12. On average, what weight and quantity of material is collected/ received? (per week/month/year)	13. On average, how much do you offer to pay (per unit/per kg) for the WEEE/scrap material that you receive? (Please separate according to types of scrap material where possible)	14. What factors determine how much you pay for the scrap material? (please tick all that apply)	15. What factors determine the prices at which you sell the scrap material? (please tick all that apply)	16. On average, what are the selling prices (per unit/per kg) of your locally sold scrap material? (Please separate according to types of scrap material where possible)	17. Who are your main clientele?
Mitranand Jokhoe	Multi Options	Managing Director	N/A	Most of the work is manual except for shedding and lifting.	It happens on an irregular basis (daily)	N/A	N/A	Market price, They have a sheet with prices.	Quality	-	-
Mr. Babel	Scrapyard	Owner		90% manual labour 10% mechanical	It varies, sometimes collection is done on a monthly basis.	4 tons per year		Condition of the material, The item itself		Depend on the market price, the item and the material.	Private companies and the general public

Table A4-11: WEEE Stakeholder Responses - Scrap Dealers.

Name	Name of organisation	Position/ Delegation	18. On average, what weight and quantity of material is sold locally? (per week/month/year)	19. What is the average monthly/annual revenue earned from scrap material sold locally? (If possible, please provide a breakdown of this total figure according to type of scrap material)	20. What is the average time period between date of purchase and date of sale for your materials?	21. What factors influence the retention time? (please tick all that apply)	22. Is any of the material exported?	23. To which countries do you export?	24. Why did you choose these countries to export to? (please tick all that apply)
Mitranand Jokhoe	Multi Options	Managing Director	-	-			Yes	Europe	High price
Mr. Babel	Scrapyard	Owner					Yes	A representative from Brazil comes and collects the e-waste he desires and it is then exported.	

Table A4-11: WEEE Stakeholder Responses - Scrap Dealers.

Name	Name of organisation	Position/ Delegation	25. What types of overseas establishments purchase your scrap material?	26. Do the materials fetch a higher price overseas compared to when they are sold locally? If yes, what factors account for this?	27. On average, what are the selling prices (per unit/per kg) of your exported scrap material? [If different from the responses given to question 16] (Please separate according to types of scrap material where possible)	28. What is the average monthly or annual weight and/or quantity of scrap material exported?	29. What is the average monthly/annual revenue earned from exported scrap material? (If possible, please provide a breakdown of this total figure according to type of scrap material)	30. Who is responsible for keeping inventories and how is the data stored?	31. What types of information are recorded?	32. How often are the inventories updated?
Mitranand Jokhoe	Multi Options	Managing Director						Owners and supervisors	weights and type	Automatically updated with every purchase.
Mr. Babel	Scrapyard	Owner								

Table A4-11: WEEE Stakeholder Responses - Scrap Dealers.

Name	Name of organisation	Position/ Delegation	33. Are there any specific qualifications or training that persons need to have before they can be considered for employment at your company? If yes, which?	34. Does the company provide training to employees? If yes, what types of training?	35. How often are these training sessions carried out?	36. Are you required to have a license for your operations?	37. If yes, which, and how often is it renewed?	38. Who is the authority responsible for issuing such licenses and what information do you need to provide to them when applying for one?	39. What conditions must be satisfied before you are granted a license?	40. Does your establishment have any environmental certification? If yes, which?
Mitranand Jokhoe	Multi Options	Managing Director	For the office they must have a certain level of education.	Yes. -Saftey -Machine work -Maintenance -Separation	They are carried out based on observation.	Yes	2 years	Chamber of Commerce	Nothing major, just have to register the business	No
Mr. Babel	Scrapyard	Owner								

Table A4-11: WEEE Stakeholder Responses - Scrap Dealers.

Name	Name of organisation	Position/ Delegation	41. Does your establishment have a WEEE policy? (e.g. to describe how WEEE items received have to be treated and handled). If yes, please state this policy.	42. What are the main challenges that your company faces as a scrap metal business? (please tick all that apply)	43. Do you have any knowledge on the dangers of improperly treated WEEE? (If yes, please specify). How did you come across this information?	44. Aside from scrap metal activities, do you have any knowledge on what happens to WEEE locally? (If yes, please specify)	45. In your opinion, do you think the average person is aware of the environmental and health risks associated with improper disposal of WEEE?	46. What reasons do you think account for this?	47. Where do you think the primary responsibility lies for dealing with WEEE?	48. Do you have any suggestions for improving the e-waste management system in the country?	49. Do you have any knowledge of other scrap metal dealers operating in the country?
Mitranand Jokhoe	Multi Options	Managing Director	No	Lack of markets/ low demand for certain scrap materials, Low or unstable market prices for certain materials, Local competition, High shipping costs, Obtaining certification	yes	Dumped	No	Culture	Joint partnership between the Government and the	Awareness	
Mr. Babel	Scrapyard	Owner									

Table A4-12: WEEE Stakeholder Responses - Suppliers

Name	Name of organisation	Position/ Delegation	1.What types of products do you distribute?	2.What are the main models (brands) of products distributed?	3.On average, what is the fastest selling product?	4.What is the fastest selling model/brand? Can you think of any reasons for its popularity?	5.What is the average lifespan of the products you distribute?	6.Does the lifespan vary based on the model (brand)?	7.Do you use a particular set of criteria when selecting which models you distribute?	8.What are the annual figures on the quantity and weights of these products imported? (Please separate according to product type).	9.What are the annual figures on the quantity and weights of these products sold? (Please separate according to product type).	10.Is there a particular time period when sales are the highest?
Vanita Lall	Cellular Planet Digicel	Branch Manager	Only phones and sims	Alcartel, Nokia, Blu	Alcartel and Nokia	- Nokia is one of the cheapest phone - Alcartel is Android, 4G and is very cheap	2 years	Yes The Augo phone had a short lifespan so they stopped selling it.	Customer preference, Price	3-4 phones weekly presently; sales are very low right now. But last year 12-15 phones per week		Yes
Ronny Ishaak	Ishaak's Electro web	Owner	Laptops, Desktops, phones, electronics	Computer equipment - Acer, Dell, Toshiba, HP Phones- Samsung, motorolor, nokia, HTC	Phones and tablets	Tablets -Ematic (cheap) Laptops- HP/Acer Phone: Samsung	laptops - 4yrs phones-2 yrs tablets1 yr	no	Customer preference	laptops-15 phones-150 tablets-150		Yes
Priya Algoe	HD Lighting	Manager & Purchasing Department	-Lights -Controllers -Power Source	Philiips, OML, TRIO Brilliant, Leds-cy, legrand, Fumagalli	Bulbs	Bulbs- Phillips Fixtures- Phillips, Lifetime	Bulbs- 1 yr min due o the voltage factors Fixtures - Lifetime	Phillips is the best brand	Price, Long-standing business relationship, Import rates, Shipping routes, Service from suppliers	Follow up	Follow up	Yes
Mr. Umberto	Computer & Office Suppliers	Manager	-Copier -Laptops -Computers -Printers -Fax machine -Telephones -Tablets -Mobile Phones	-Brother -HP -Toshiba -Alcatel -Samsung -Panasonic	-Laptop chagrers -Computer	HP	Not sure -Tablets 3-4 months	Not sure	They go shopping in Miami, and buy whatever is in stock.	Average of 300 - 500 computers per year	Average of 300 - 500 computers per year	Yes
Albert Leming	Pro Cool	Director	90 % AC units 10 % Parts for AC units	TGM, Comfort Star, Pro Cool, Innovair, York	-	Comfort star and TGM	5-10 years	Generally the same.	Customer preference	Smaller units: TGM - 500 Comfort star-500 Larger Units: York 100	Same as what was imported.	Yes
Andy Sof/ Glenn Ramjiawan	Beni's Group of Companies	Order Dept/ Store Manager	Christmas lights, lights, ceiling fans, lighting fixtures, LED's, water heater, power supplies, speakers, generators, garage doors, hardware tools	krafts man, skill, makita, bumper (audio equip)	Lighting bulbs (phillips), Water heaters, pumps, garage doors.							
Roy Casdipowidjojo	Roy's Electronics	Store Owner/ Manager	Music equipment, Radios, DVD's	Pioneer, Samsung and Panasonic	Pioneer audio systems	All of his brands are high quality and are customer preference so there is no difference.	3-4 years	Never noticed any differences.		Audio equipment - 20 per month Other equipment average of 10 per month	N/A	Yes
Raoul Emanuels	Computer & Repairs	-	-PC's -Laptops -Tablets -Phones -Batteries	-Asus -Acer -LG -Apple	HP products	HP	Computers : 3-4 years Laptops: 3-4 years Tablets: 2 years Phones: 2 years	Tablets: Apple and Samsung Laptops: Sony, Asus, Mac Phones: Apple and Samsung	Customer preference, Quality of products	-	-	Yes
Mukesh Dayaldasani	KIRPALANI	Manager White Goods	Large household appliances: fridges, freezers, AC's, washers, dryers, dishwashers Consumer electronics Small appliances	-Whirpool -Dako -LG -Samsung Mabe -GE	Phones, washer, fridges, TV's	Whirlpool Samsung	Larger appliances- 8 years Smaller appliances- 2 years Consumer electronics - 5 years	Yes, expensive brands tend to last longer	Customer preference, Designs based on efficiency/ quality	*Follow up	*Follow up	Yes
Ronny Pique	Biomedical Systems	Executive Director	Specialized equipment used in : Operating Theatre, ICU, Emergency room, X-ray	-Care Fusion -Hamiliton Medical -Mindray -Oldelf (only x-ray)	Monitors for equipment.	Mindray because their patient monitors are used more frequently.	10-15 years	Yes based on the type of equipment.	Customer preference, Designs based on efficiency/ quality, Price	-	-	No

Table A4-12: WEEE Stakeholder Responses - Suppliers

Name	Name of organisation	Position/ Delegation	11. If yes, does the time frame correlate with particular types of products?	12. What is the procedure for replenishing your stocks?	13. How often do you need to replenish your stocks of products?	14. Who is responsible for keeping stock inventories and how is the data stored?	15. What type of information is stored?	16. What is the procedure for dealing with unsold products?	17. Do you have any arrangements for take-back of any products with suppliers and /or customers?	18. Are there any additional services your company provides to customers with regard to maintenance and care of the product (s)? If yes, please expand. (For example: Where are parts sources from? What	19. Who are your major clients?	20. Does your company have any environmental certifications?
Vanita Lall	Cellular Planet Digicel	Branch Manager	During the Christmas period and during promotions that Digicel has.	Re-order based on demand		Store manager Using excel sheets and a Digicel management programme	-Number of phones in-stock -Phone Transfers -Serial numbers -Phones that are out of stock	Goes back to Digicel	Digicel gives a one year guarantee on phones	If your phone can be repaired when on warrenty, Digicel offers servicing which takes 3-4 weeks. They give you a phone on loan when the one you bought is fixing.	Youths	No
Ronny Ishaak	Ishaak's Electro web	Owner	Christmas time and August period	Re-order based on demand	every 1-2months they take an inventory and they decide whether they can order stocks	employee	serial numbers, model,brand	A large discount is placed on the item. If not sold it is given away.	Stocks are bought in the US and when products leave the US they no longer have guarantee on these products. But they give a guarantee at thei own risk	They try to repair products that are on guarantee	Youths and students because they have a student discount of 10%	no
Priya Algoe	HD Lighting	Manager & Purchasing Department	December August	Re-order based on demand, Forecast is made for the year and the stocks	-Monthly for fast movers eg. Bulbs	Purchasing Department -Software is used to keep track of stocks	-serial numbers -quantities -item description	Usually placed in promotions. If unsold, stored in warehouse.	5 year warranty for most items from suppliers & lifetime for specific items All defective items are sent back to the supplier.	Installation services are provided to customers. If repairs are done parts are sourced from stock and broken parts are put in the waste.	-Retailers -Private customers	EBS certification for imports
Mr. Umberto	Computer & Office Suppliers	Manager	December- The government purchases computers.	Re-order in bulk on pre-defined time period		They perform an inventory at the end of every year.	-Quantity -Brand -Serial number	Place item on sale.	Guaranty of approximately one year	They outsource repairs to another person. Broken parts go back to the customer and parts for repairs are sourced from storage.	95% Government Agencies	N/A
Albert Leming	Pro Cool	Director	March - July (Smaller units go quicker)	Reorder based on stocks	Twice a year	Director. A special software is used.	Minimum quantity Model Brand	They are put on sale and are always sold.	Do not have take bake arrangements with manufacturers.	Offer maintenance services to their customers. When repairs are done the broken parts are left with the customer.	Have over 2000 clients. Government agencies Private companies General Public	no
Andy Sof/ Glenn Ramjiawan	Beni's Group of Companies	Order Dept/ Store Manager										
Roy Casdipowidjojo	Roy's Electronics	Store Owner/ Manager	November- January	When it is at its minimum amount.	Every month	Owner and his wife.	They have a manual inventory list. Type of equipment, brand, amount	Sold at a discounted price.	He buys from local distributors and he is given 1 month warranty on items.	Repair services are provided. Parts are sourced locally and all broken parts are sent to the landfill.	General public, >25 years	No
Raoul Emanuels	Computer & Repairs	-	Christmas time and the beginning of the new year.	Re-order in bulk on pre-defined time period	2 months	Type, Model, Brand, Serial numbers Mr. Clay keeps track of the inventories.	Type, Model, Brand, Serial numbers	Placed on discount	Only if the equipment is still in its warranty period.	Provide repair services. Parts are sourced locally or from abroad. Broken parts are either returned to the customer or kept in the store. A scrap dealer then collects the e-waste materials.	Private companies and general public.	No
Mukesh Dayaldasani	KIRPALANI	Manager White Goods	Mother's day Christmas End of September (back to school period)	Re-order based on demand	Annually	Store manager Inventory is done before the end of March before orders are placed.	They have a special software that they utilize and specific numbering system for all items.	Change the display or place on discount.	They only receive warranty for a particular time period from suppliers. Whirpool - 2 years Samsung and LG - 6 months	Perform repairs on items. Parts are sourced locally. All broken parts are sent to the landfill.	Everyone	no
Ronny Pique	Biomedical Systems	Executive Director		Re-order based on demand	Equipment are acquired for customers based on orders.	Stock manager. Records are kept on excel.	Serial number, brand, model number, client, supplier information.	They would be kept in stock, until they are needed.	Yes. If there are problems with the equipment they are shipped back to the supplier and it will be replaced.	Yes repair and maintenance services are provided. Parts are sources from abroad and locally (mechanical & electrical parts). All unwanted parts are left at the hospital. All equipment that are irreparable are kept by the hospital.	All hospitals in Suriname.	ISO 9004:2008

Table A4-12: WEEE Stakeholder Responses - Suppliers

Name	Name of organisation	Position/ Delegation	21. Does your company have a policy for the management of e-waste?	22. If not, does your company plan to adopt a policy of e-waste management?	23. What knowledge do you have on the outcome of WEEE locally (what happens to it)?	24. From your point of view, what are the main obstacles for proper e-waste treatment in general?	25. What knowledge do you have on treating WEEE?	26. Do you have any knowledge of the dangers of poorly treated or mismanaged WEEE?	27. In your opinion, do you think the average person in Suriname is aware of the environmental and health risks associated with improper disposal of WEEE?	28. What reasons do you think account for this?	29. Where do you think the primary responsibility lies for dealing with WEEE?
Vanita Lall	Cellular Planet Digicel	Branch Manager	No	No	No	More service providers		No	No	Lack of information available to the public	Companies
Ronny Ishaak	Ishaak's Electro web	Owner	No	Setting up one. Probably in 1-2 years	No	the availabilty of services to deal with these waste streams	None		No	Lack of awareness	Owners of the equipment
Priya Algoe	HD Lighting	Manager & Purchasing Department	No	Plan on getting ISO 9001	No	-More awareness -Facility Options	Sorting, separation, treatment	No	No	They need to be more aware of the dangers.	Govt including the electrical companies
Mr. Umberto	Computer & Office Suppliers	Manager	No	no	no	no	no	no	No	Public is not aware and there are facilities available.	Government
Albert Leming	Pro Cool	Director	No	No no plans in place.	Scrap dealers collect them.	There are no options available.	Dangerous for the environment and infrastructure.	Damage to the environment and infrastructure.	No	Lack of awareness.	Ministry of ATM NEMOS
Andy Sof/ Glenn Ramjiawan	Beni's Group of Companies	Order Dept/ Store Manager									
Roy Casdipowidjojo	Roy's Electronics	Store Owner/ Manager	No	No	No	Availability of a facility	It contains hazardous materials.	Yes	No	Awareness	Retailers and Distributors
Raoul Emanuels	Computer & Repairs	-	No	Maybe	No	-	None	Chemicals that are harmful to the environment.	No	Awareness	Everyone
Mukesh Dayaldasani	KIRPALANI	Manager White Goods	No	In the future maybe it can be an option.	Sent to scrap dealers or burnt.	No facilities.	No	No	No	No awareness	NEMOS and the Government.
Ronny Pique	Biomedical Systems	Executive Director	No	Maybe	It is usually disposed into the landfill.	No options are available in Suriname.	None	The metals in the equipment can contaminate the soil.	No	Lack of awareness.	Users/Generators Government

ANNEX V: TRADE DATA TABLES

Table A5-1: Import Trade Data for Large Household Equipment

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product Total, kg	2007	2008	2009	2010	2011	Product Total, units	Duty rate
		Kg						units						
8415.10.00	AC machines - Windows or wall types, self-contained or "split-system"	189,000	---	476,000	644,595	712,700	2022,295	2,959	---	5,156	5,978	6,421	20,514	25%
8415.81.00	AC machines Incorporating a refrigerating unit and a valve for reversal of the cooling/heat cycle (reversible heat pumps)	75,000	---	88,000	16,984	15,839	195,823	---	---	---	---	---	---	25%
8415.82.00	Other AC machines, incorporating a refrigerating unit	456,000	---	333,000	185,205	73,465	1047,670	---	---	---	---	---	---	25%
8415.83.00	AC machines Not incorporating a refrigerating unit	4,000	---	104,000	3,381	12,126	123,507	---	---	---	---	---	---	25%
8415.90.00	Parts of AC machines	170,000	---	163,000	403,733	598,344	1335,077	---	---	---	---	---	---	5%
8418.21.00	HH, compression type (includes 8418.21.30 which is non-electrical)	655,000	---	488,000	405,966	485,873	2034,839	10,776	---	6,630	6,042	8,371	31,819	
8418.21.10	HH refrigerators, compression type, frost free, electrical	---	---	---	375,282	467,524	842,806	---	---	---	---	---	---	25%
8418.21.20	HH refrigerators, compression type, other, electrical	---	---	---	29,053	15,743	44,796	---	---	---	---	---	---	25%
8418.29.10	Other refrigerators, electrical	---	---	---	62,323	78,085	140,408	---	---	---	---	---	---	25%
8418.30.00	Freezers of the chest type, not exceeding 800 litre capacity	312,000	---	342,000	495,029	587,236	1736,265	3,386	---	3,858	6,182	8,415	21,841	25%
8418.40.00	Freezers of the upright type, not exceeding 900 litre capacity	9,000	---	41,000	64,391	36,974	151,365	---	---	---	824	433	1,257	25%
8418.50.00	Other furniture for storage and display, incorporating refrigerating or freezing equipment; Other refrigerating or freezing equipment; heat pumps	80,000	---	139,000	141,909	70,579	431,488	468	---	661	583	480	2,192	25%
8418.61.00	Heat pumps other than air conditioning machines of heading 84.15	30,000	---	1,000	63	6,210	37,273	---	---	---	---	---	---	25%
8418.69.00	Other refrigerating or freezing equipment	140,000	---	111,000	122,711	180,865	554,576	---	---	---	---	---	---	25%
8418.99.00	Parts of refrigerating or freezing equipment	116,000	---	36,000	37,470	52,877	242,347	---	---	---	---	---	---	5%
8421.12.10	Clothes dryers for domestic use	---	---	---	12,274	13,784	26,058	---	---	---	---	---	---	25%
8421.91.10	Parts for the clothes-dryers of subheading 8421.12.10	---	---	---	28	63	91	---	---	---	---	---	---	5%

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product Total, kg	2007	2008	2009	2010	2011	Product Total, units	Duty rate
		Kg						units						
8422.11.00	Dish washing machines of the household type	17,000	---	23,000	31,863	25,367	97,230	721	---	212	283	320	1,536	25%
8450.11.10	HH or laundry-type, fully-automatic washing machines for domestic use	---	---	---	441,936	364,071	806,007	---	---	---	---	---	---	25%
8450.12.10	Other machines, with built-in centrifugal drier for domestic use	---	---	---	336,696	535,626	872,322	---	---	---	---	---	---	25%
8450.19.10	Other machines for domestic use	---	---	---	13,046	---	13,046	---	---	---	---	---	---	25%
8450.20.10	Machines, each of a dry linen capacity exceeding 10kg for domestic use	---	---	---	93,058	104,269	197,327	---	---	---	---	---	---	5%
8450.90.00	Parts	4,000	---	7,000	---	5,852	16,852	---	---	---	---	---	---	5%
8516.10.00	Electric instantaneous or storage water heaters and immersion heaters	53,000	---	69,000	76,861	67,906	266,767	3,142	---	3,625	4,084	4,224	15,075	
8516.21.00	Storage heating radiators	---	---	18,000	15,960	---	33,960	---	---	---	---	---	---	25%
8516.50.00	Microwave ovens	93,000	---	154,000	116,503	144,588	508,091	6,499	---	---	6,008		12,507	25%
8516.60.00	Stoves and ovens	91,000	---	80,000	78,008	105,961	354,969	2,539	---	1,939	1,786	2,861	9,125	25%
8516.60.90	Other ovens; cookers, cooking plates, boiling rings, grillers and roasters	---	---	---	56,785	78,899	135,684	---	---	---	---	---	---	25%
ANNUAL TOTAL		**2494,000**	**---**	**2673,000**	**4261,113**	**4840,826**	**14268,939**	**30,490**	**---**	**22,081**	**31,770**	**31,525**	**115,866**	

Table A5-2: Export Trade Data for Large Household Equipment

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product Total, kg	2007	2008	2009	2010	2011	Product Total, units	Duty rate
		Kg						Units						
8415.10.00	AC machines - Windows or wall types, self-contained or "split-system"	---	---	758,000	502	10,719	769,221	---	---	282	13	179	474	25%
8415.81.00	AC machines Incorporating a refrigerating unit and a valve for reversal of the cooling/heat cycle (reversible heat pumps)	---	---	55,000	---	59,121	114,121	---	---	---	---	---	---	25%
8415.82.00	Other AC machines, incorporating a refrigerating unit	---	---	1,000	75	290	1,365	---	---	---	---	2	2	25%
8415.83.00	AC machines Not incorporating a refrigerating unit	---	---	---	75	290	365	---	---	---	---	---	---	25%
8415.90.00	Parts of AC machines	---	---	---	---	96	96	---	---	---	---	---	---	5%
8418.21.00	**HH, compression type (includes 8418.21.30 which is non-electrical)**	202,000	---	7,300	---	63,000	272,300	3,480	---	1,070		776	5,326	
8418.21.10	HH refrigerators, compression type, frost free, electrical	---	---	---	---	52,754	52,754	---	---	---	---	---	---	25%
8418.21.20	HH refrigerators, compression type, other, electrical	---	---	---	---	10,244	10,244	---	---	---	---	---	---	25%
8418.29.10	Other refrigerators, electrical	3,000	---	---	138	7,130	10,268	46	---	3	4	30	83	25%
8418.30.00	Freezers of the chest type, not exceeding 800 litre capacity	39,000	---	34,000	203	38,070	111,273	514	---	285	3	396	1,198	25%
8418.40.00	Freezers of the upright type, not exceeding 900 litre capacity	2,000	---	5,000	62	298	7,360	24	---	37	---	4	65	25%
8418.50.00	Other furniture for storage and display, incorporating refrigerating or freezing equipment; Other refrigerating or freezing equipment; heat pumps	1,000	---	4,000	---	4,075	9,075		---	50	---	24	74	25%
8418.61.00	Heat pumps other than air conditioning machines of heading 84.15	---	---	---	---	---	---	---	---	---	---	---	---	25%
8418.69.00	Other refrigerating or freezing equipment	11,000	---	12,000	---	2,000	25,000	---	---	---	---	---	---	25%
8418.99.00	Parts of refrigerating or freezing equipment	2,000	---	---	---	---	2,000	---	---	---	---	---	---	5%
8421.12.10	Clothes dryers for domestic use	---	---	3,000	344	44	3,388	---	---	---	---	---	---	25%
8421.91.10	Parts for the clothes-dryers of subheading 8421.12.10	---	---	---	---	---	---	---	---	---	---	---	---	5%

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product Total, kg	2007	2008	2009	2010	2011	Product Total, units	Duty rate
		Kg						Units						
8422.11.00	Dish washing machines of the household type	3	---	---	---	---	3	---	---	---	---	---	---	25%
8450.11.10	HH or laundry-type, fully-automatic washing machines for domestic use	---	---	---	315	10,533	10,848	573	---	275	3	172	1,023	25%
8450.12.10	Other machines, with built-in centrifugal drier for domestic use	---	---	---	85	17,957	18,042	---	---	---	---	---	---	25%
8450.19.10	Other machines for domestic use	---	---	---	315	10,533	10,848	---	---	---	---	---	---	25%
8450.20.10	Machines, each of a dry linen capacity exceeding 10kg for domestic use	---	---	---	25	403	428	---	---	---	---	---	---	5%
8450.90.00	Parts	---	---	---	---	293	293	---	---	---	---	---	---	5%
8516.10.00	Electric instantaneous or storage water heaters and immersion heaters	---	---	1,000	---	242	1,242	28	---	20	---	10	58	
8516.21.00	Storage heating radiators	---	---	---	---	---	---	---	---	---	---	---	---	25%
8516.50.00	Microwave ovens	---	---	10,000	---	---	10,000	---	---	---	---	---	---	25%
8516.60.00	Other ovens; cookers, cooking plates, boiling rings, grillers and roasters	32,000	---	27,000	---	4,000	63,000	1,150	---	489	---	106	1,745	25%
8516.60.90	Other ovens; cookers, cooking plates, boiling rings, grillers and roasters	---	---	---	---	---	---	---	---	---	---	---	---	25%
ANNUAL TOTAL		**292,003**	**---**	**917,300**	**2,139**	**292,092**	**1503,534**	**5,815**	**---**	**2,511**	**23**	**1,699**	**10,048**	

Table A5-3: Import Trade Data for Small Household Equipment

IMPORTS														
HS Code	**HS Description**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**Duty rate**
		Kg					**Total, Kg**		**UNITS**				**Total, Units**	
8508.11.00	Vacuum cleaners with self-contained electric motor of a power not exceeding 1500W and having a dust bag or other receptacle capacity not exceeding 20L	---	---	---	39,483	47,258	86,741	---	---	---	2,256	2,682	4,938	20%
8508.19.00	Other vacuum cleaners with self-contained motor	---	---	---	6,121	6,995	13,116	---	---	---	445	481	926	20%
8508.60.00	Other vacuum cleaners	---	---	---	11,412	14,261	25,673	---	---	---	---	---	---	20%
8508.70.00	Parts for vacuum cleans	---	---	---	1,596	271	1,867	---	---	---	---	---	---	Free
8509.40.00	**Food grinders and mixers; fruit or vegetable extractors**	61,000	---	54,000	63,000	71,000	249,000	8,724	---	6,630	10,038	11,072	36,464	20%
8509.40.10	Food grinders and mixers; fruit or vegetable extractors	---	---	---	51,141	60,410	111,551	---	---	---	---	---	---	20%
8509.40.20	Food grinders and mixers; fruit or vegetable extractors	---	---	---	12,085	10,546	22,631	---	---	---	---	---	---	20%
8509.80.00	**Other appliances**	---	---	---			---	---	---	---	---	---	---	Free
8509.80.10	Blenders	---	---	---	5,220	4,890	10,110	---	---	---	---	---	---	20%
8509.80.20	Floor polishers	---	---	---	2,579	526	3,105	---	---	---	---	---	---	20%
8509.80.30	Kitchen waste disposers	---	---	---	666	248	914	---	---	---	---	---	---	20%
8509.80.90	Other electro-mechanical domestic appliances with self-contained electric motor	---	---	---	37,311	16,050	53,361	---	---	---	---	---	---	25%
8509.90.00	Parts for above	1,000	---	1,000	31	148	2,179	---	---	---	---	---	---	Free
85.10.00	Shavers, hair clippers and hair removing appliances, with self-contained electric motor	---	---	---	---	---	---	---	---	---	---	---	---	
8510.10.00	Shavers	6,000	---	4,000	3,537	4,970	18,507	---	---	---	---	---	---	20%
8510.20.00	Hair clippers	11,000	---	10,000	7,730	8,891	37,621	97	---	101	---	---	198	20%
8510.30.00	Hair-removing appliances	---	---	---	67	31	98	---	---	---	---	---	---	20%

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg		UNITS				Total, Units	
8510.90.00	Parts for above	---	---	---	193	935	1,128	---	---	---	---	---	---	20%
8516.31.00	Hair dryers	11,000	---	9,000	8,932	8,674	37,606	4,719	---	2,815	2,800	3,176	13,510	20%
8516.40.00	Electric smoothing irons	49,000	---	34,000	31,000	38,000	152,000	11,680	---	5,226	5,630	7,000	29,536	20%
8516.71.00	Coffee or tea makers	34,000	---	37,000	30,606	40,304	141,910	---	---	---	---	---	---	20%
8516.72.00	Toasters	45,000	---	11,000	10,567	14,918	81,485	14,225	---	4,146	3,822	5,734	27,927	20%
8516.79.00	Other electro-thermic appliances	126,000	---	162,000	229,000	252,197	769,197	23,302	---	---	---	---	23,302	20%
8452.10.00	Sewing machines of the HH type	56,000	---	59,000	81,493	80,207	276,700	2,406	---	1,789	4,149	3,226	11,570	Free
9101.11.00	Wrist watches, electrically operated with mechanical display only	---	---	---	60	---	60	---	---	---	---	---	---	30%
9101.19.00	Other electrically operated wrist watches	---	---	---	---	1,649	1,649	---	---	---	---	---	---	30%
9101.21.00	Wrist watches with automatic winding	---	---	---	---	---	---	---	---	---	---	---	---	30%
9101.29.00	Other wrist watches with a case of precious metal	---	---	---	---	---	---	---	---	---	---	---	---	30%
9101.91.00	Other pocket watches and other watches battery or accumulator powered & with a case of precious metal	---	---	---	---	---	---	---	---	---	---	---	---	30%
9101.99.00	Other pocket watches and other watches with a case of precious metal	---	---	---	---	25	25	---	---	---	---	---	---	30%
9102.11.00	Wrist-watches, pocket-watches and other watches, including stop-watches, other than those of heading 91.01: Other wrist watches, electrically operated with mechanical display only	---	---	14,000	3,538	4,633	22,171	---	---	2,594	---	---	---	30%
9102.12.00	With opto-electronic display only	---	---	---	380	149	529	---	---	---	---	---	---	30%
9102.19.00	Other electrically operated wrist watches	---	---	---	1,016	1,794	2,810	---	---	---	---	---	---	30%
9102.21.00	Other wrist watches with automatic winding	---	---	---	504	88	592	---	---	---	---	---	---	30%
9102.29.00	Other	---	---	1,000	360	423	1,783	---	---	---	---	---	---	30%

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg		UNITS				Total, Units	
9102.91.00	Other pocket watches and other watches battery or accumulator powered	---	---	---	877	1,245	2,122	---	---	---	---	---	---	30%
9102.99.00	Other pocket watches and other watches	---	---	---	2,612	5,607	8,219	---	---	---	---	---	---	30%
9103.10.00	Clocks with watch movements, excluding clocks of heading 9104.00.00, electrically operated	12,000	---	4,000	1,421	1,693	19,114	---	---	---	---	---	---	30%
9103.90.00	Other clocks with watch movements, excluding clocks of heading 9104.00.00	---	---	1,000	2,986	9,628	13,614	---	---	---	---	---	---	30%
9105.11.00	Alarm clocks, electrically operated	---	---	---	6,455	1,514	7,969	---	---	503	2,251	404	---	30%
9105.19.00	Other alarm clocks	---	---	---	490	1,113	1,603	---	---	---	1,583	1,128	---	30%
9105.21.00	Electrically operated wall clocks	---	---	---	2,107	1,662	3,769	---	---	2,682	1,317	---	---	30%
9105.29.00	Other electrically operated wall clocks	---	---	---	6,467	6,523	12,990	---	---	---	---	---	---	30%
9105.91.00	Other clocks, battery, accumulator or mains powered	---	---	---	---	75	75	---	---	---	---	---	---	30%
9105.99.00	Other clocks	---	---	---	1,625	1,245	2,870	---	---	---	---	---	---	30%
9106.10.00	Time-registers; time recorders	---	---	---	780	733	1,513	---	---	---	---	---	---	Free
9106.90.00	Other time of day recording apparatus	---	---	---	153	188	341	---	---	24	---	---	---	Free
9107.00.00	Time switches with clock or watch movement or with synchronous motor	1,000	---	-	1,147	571	2,718	2,067	---	---	1,651	2,571	---	Free
9108.11.00	Watch movements with mechanical display only or with a device to which a mechanical display can be incorporated	---	---	---	---	---	---	---	---	---	---	---	---	30%
9108.12.00	Watch movements with opto-electronic display only	---	---	---	---	---	---	---	---	---	---	---	---	30%
9108.19.00	Other electrically operated watch movements	---	---	---	---	8	8	---	---	---	---	---	---	30%
9108.20.00	With automatic winding	---	---	---	---	---	---	---	---	---	---	---	---	30%
9108.90.00	With hand winding only	---	---	---	2,966	-	2,966	---	---	---	---	---	---	30%

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg		UNITS				Total, Units	
9109.11.00	Electrically operated clock movements of alarm clocks	---	---	---	---	---	---	---	---	---	---	---	---	30%
9109.19.00	Other electrically operated clock movements	---	---	---	---	---	---	---	---	---	---	---	---	30%
9109.90.00	Other	---	---	---	106	-	106	---	---	---	135	---	---	30%
9110.11.00	Complete watch movements, unassembled or partly assembled (moving parts)	---	---	---	---	---	---	---	---	---	---	---	---	30%
9110.12.00	Incomplete watch movements, assembled	---	---	---	---	---	---	---	---	---	---	---	---	30%
9110.19.00	Rough watch movements	---	---	---	---	---	---	---	---	---	---	---	---	30%
9110.90.00	Rough clock movements	---	---	---	---	---	---	---	---	---	---	---	---	Free
9114.10.00	Clock or watch springs, including hair springs	---	---	2,000	---	---	2,000	---	---	---	---	---	---	30%
9114.30.00	Dials	---	---	---	---	---	---	---	---	---	---	---	---	30%
9114.40.00	Plates and bridges	---	---	---	---	---	---	---	---	---	---	---	---	30%
9114.90.10	Other clock parts	---	---	---	77	196	273	---	---	---	---	---	---	30%
9114.90.20	Other watch parts	---	---	---	1	---	1	---	---	---	---	---	---	30%
ANNUAL TOTAL		**413,000**	**---**	**403,000**	**669,898**	**722,492**	**2208,390**	**67,220**	**---**	**26,510**	**36,077**	**37,474**	**148,371**	

Table A5-4: Export Trade Data for Small Household Equipment

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg		UNITS				Total, Units	
8508.11.00	Vacuum cleaners with self-contained electric motor of a power not exceeding 1500W and having a dust bag or other receptacle capacity not exceeding 20L	---	---	---	---	154	154	---	---	---	---	26	26	20%
8508.19.00	Other vacuum cleaners with self-contained motor	---	---	---	---	---	---	---	---	---	---	---	---	20%
8508.60.00	Other vacuum cleaners	---	---	---	---	430	430	---	---	---	---	---	---	20%
8508.70.00	Parts for vacuum cleans	---	---	---	---	---	-	---	---	---	---	---	---	Free
8509.40.00	Food grinders and mixers; fruit or vegetable extractors	5,000	---	11,000	---	16,000	32,000	658	---	1,221	---	1,257	3,136	20%
8509.40.10	Food grinders and mixers; fruit or vegetable extractors	---	---	---	---	15,907	15,907	---	---	---	---	---	---	20%
8509.40.20	Food grinders and mixers; fruit or vegetable extractors	---	---	---	---	---	-	---	---	---	---	---	---	20%
8509.80.00	Other appliances	3,000	---	1,000	---	---	4,000	---	---	119	---	---	119	Free
8509.80.10	Blenders	---	---	---	6	---	6	---	---	---	---	---	---	20%
8509.80.20	Floor polishers	---	---	---	---	35	35	---	---	---	---	---	---	20%
8509.80.30	Kitchen waste disposers	---	---	---	---	47	47	---	---	---	---	---	---	20%
8509.80.90	Other electro-mechanical domestic appliances with self-contained electric motor	---	---	---	---	---	---	---	---	---	---	---	---	25%
8509.90.00	Parts for above	---	---	3,000	---	236	3,236	---	---	---	---	---	---	Free
85.10.00	Shavers, hair clippers and hair removing appliances, with self-contained electric motor	---	---	---	---	---	---	---	---	---	---	---	---	
8510.10.00	Shavers	---	---	---	---	---	---	---	---	---	---	---	---	20%
8512.20.00	Hair clippers	---	---	---	---	---	---	---	---	---	---	---	---	20%
8510.30.00	Hair-removing appliances	---	---	---	---	---	---	---	---	---	---	---	---	20%

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg		UNITS				Total, Units	
8510.90.00	Parts for above	---	---	---	---	---	---	---	---	---	---	---	---	20%
8516.31.00	Hair dryers	---	---	---	---	101	101	---	---	---	---	45	45	20%
8516.40.00	Electric smoothing irons	3,000	---	1,000	---	112	4,112	513	---	79	---	37	629	20%
8516.71.00	Coffee or tea makers	2,000	---	---	5	11	2,016	---	---	---	---	---	---	20%
8516.72.00	Toasters	1,000	---	2,000	---	257	3,257	256	---	220	---	72	548	20%
8516.79.00	Other electro-thermic appliances	7,000	---	2,000	400	6,334	15,734	407	---	151	---	358	916	20%
8452.10.00	Sewing machines of the HH type	---	---	---	475	373	848	13	---	---	---	---	13	Free
9101.11.00	Wrist watches, electrically operated with mechanical display only	---	---	---	2,847	---	2,847	---	---	---	---	---	---	30%
9101.19.00	Other electrically operated wrist watches	---	---	---	---	---	---	---	---	---	---	---	---	30%
9101.21.00	Wrist watches with automatic winding	---	---	---	---	---	---	---	---	---	---	---	---	30%
9101.29.00	Other wrist watches with a case of precious metal	---	---	---	---	---	---	---	---	---	---	---	---	30%
9101.91.00	Other pocket watches and other watches battery or accumulator powered & with a case of precious metal	---	---	---	---	---	---	---	---	---	---	---	---	30%
9101.99.00	Other pocket watches and other watches with a case of precious metal	---	---	---	---	800	800	---	---	---	---	---	---	30%
9102.11.00	Wrist-watches, pocket-watches and other watches, including stop-watches, other than those of heading 91.01: Other wrist watches, electrically operated with mechanical display only	---	---	20,000	2,211	1,426	23,637	---	---	---	---	37	37	30%
9102.12.00	With opt-electronic display only	---	---	---	---	---	---	---	---	---	---	---	---	30%
9102.19.00	Other electrically operated wrist watches	---	---	---	100	787	887	---	---	---	---	---	---	30%
9102.21.00	Other wrist watches with automatic winding	---	---	---	---	11	11	---	---	---	---	---	---	30%
9102.29.00	Other	---	---	---	---	4,000	4,000	---	---	---	---	---	---	30%

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg		UNITS				Total, Units	
9102.91.00	Other pocket watches and other watches battery or accumulator powered	---	---	---	---	---	---	---	---	---	---	---	---	30%
9102.99.00	Other pocket watches and other watches	---	---	---	1,111	2	1,113	---	---	---	---	---	---	30%
9103.10.00	Clocks with watch movements, excluding clocks of heading 9104.00.00, electrically operated	---	---	---	---	---	---	---	---	---	---	---	---	30%
9103.90.00	Other clocks with watch movements, excluding clocks of heading 9104.00.00	---	---	---	---	---	---	---	---	---	---	---	---	30%
9105.11.00	Alarm clocks, electrically operated	---	---	---	---	---	---	---	---	---	---	---	---	30%
9105.19.00	Other alarm clocks	---	---	---	---	---	---	---	---	---	---	---	---	30%
9105.21.00	Electrically operated wall clocks	---	---	---	38	---	38	---	---	---	---	---	---	30%
9105.29.00	Other electrically operated wall clocks	---	---	---	---	71	71	---	---	---	---	---	---	30%
9105.91.00	Other clocks, battery, accumulator or mains powered	---	---	---	---	5	5	---	---	---	---	---	---	30%
9105.99.00	Other clocks	---	---	---	---	---	---	---	---	---	---	---	---	30%
9106.10.00	Time-registers; time recorders	---	---	---	7	---	7	---	---	---	---	---	---	Free
9106.90.00	Other time of day recording apparatus	---	---	---	---	6	6	---	---	---	---	---	---	Free
9107.00.00	Time switches with clock or watch movement or with synchronous motor	---	---	---	4	---	4	---	---	---	---	---	---	Free
9108.11.00	Watch movements with mechanical display only or with a device to which a mechanical display can be incorporated	---	---	---	---	---	---	---	---	---	---	---	---	30%
9108.12.00	Watch movements with opt-electronic display only	---	---	---	---	---	---	---	---	---	---	---	---	30%
9108.19.00	Other electrically operated watch movements	---	---	---	---	50	50	---	---	---	---	399	399	30%
9108.20.00	With automatic winding	---	---	---	---	---	---	---	---	---	---	---	---	30%
9108.90.00	With hand winding only	---	---	---	---	---	---	---	---	---	---	---	---	30%

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg		UNITS				Total, Units	
9109.11.00	Electrically operated clock movements of alarm clocks	---	---	---	---	---	---	---	---	---	---	---	---	30%
9109.19.00	Other electrically operated clock movements	---	---	---	---	---	---	---	---	---	---	---	---	30%
9109.90.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	30%
9110.11.00	Complete watch movements, unassembled or partly assembled (moving parts)	---	---	---	---	---	---	---	---	---	---	---	---	30%
9110.12.00	Incomplete watch movements, assembled	---	---	---	---	---	---	---	---	---	---	---	---	30%
9110.19.00	Rough watch movements	---	---	---	---	---	---	---	---	---	---	---	---	30%
9110.90.00	Rough clock movements	---	---	---	---	---	---	---	---	---	---	---	---	Free
9114.10.00	Clock or watch springs, including hair springs	---	---	---	---	---	---	---	---	---	---	---	---	30%
9114.30.00	Dials	---	---	---	---	---	---	---	---	---	---	---	---	30%
9114.40.00	Plates and bridges	---	---	---	---	---	---	---	---	---	---	---	---	30%
9114.90.10	Other clock parts	---	---	---	---	---	---	---	---	---	---	---	---	30%
9114.90.20	Other watch parts	---	---	---	---	---	---	---	---	---	---	---	---	30%
ANNUAL TOTAL		**21,000**	**---**	**40,000**	**7,204**	**47,155**	**115,359**	**1,847**	**---**	**1,790**	**---**	**2,231**	**5,868**	

Table A5-5: Import Trade Data for IT & Telecommunication Equipment

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg		UNITS				Total, Units	
8443.12.00	Offset printing machinery, sheet fed, office type (using sheet with one type and not exceeding 22 cm and the other side not exceeding 36 cm in the unfolded state)	---	---	---	---	---	0	---	---	---	---	---	0	Free
8443.13.00	Other offset printing machinery	---	---	---	9,047	160	9207	---	---	---	---	---	0	Free
8443.14.00	Letterpress office printing machinery, reel fed, excluding flexological printing	---	---	---	---	---	0	---	---	---	---	---	0	Free
8443.15.00	Letterpress office printing machinery, reel fed, excluding flexological printing	---	---	---	---	100	100	---	---	---	---	---	0	Free
8443.16.00	Flexographic printing machinery	---	---	---	98	0	98	---	---	---	---	---	0	Free
8443.17.00	Gravure printing machinery	---	---	---	---	---	0	---	---	---	---	---	0	Free
8443.19.00	Other	---	---	---	7,506	7,085	14591	---	---	---	---	---	0	Free
8443.31.00	Other printers, copying machines and facsimile….. Etc.	---	---	---	59,570	72,339	131909	---	---	---	---	---	0	Free
8443.32.00	Other capable of connecting to an automatic data processing machine or to a network	---	---	---	102,794	149,911	252705	---	---	---	---	---	0	Free
8443.39.00	Other	---	---	---	25,481	19,291	44772	---	---	---	---	---	0	Free
8443.91.00	Parts and accessories: Parts and accessories of printing machinery used for printing by means of plates, cylinders and other printing components of heading84.42	---	---	---	1,460	5,656	7116	---	---	---	---	---	0	Free
8443.99.00	Other	---	---	---	14,889	13,820	28709	---	---	---	---	---	0	Free
8469.00.00	Typewriters other than printers of heading 84.43; word processing machines	---	---	---	1,697	1,314	3011	---	---	---	---	---	0	Free
8470.10.00	Electronic calculators capable of operation without an external power source of electric power and pocket-size data recording, reproducing and displaying machines and calculating functions	80000	---	207000	245,903	216,263	749166	---	---	---	131652	---	131652	Free
8470.21.00	Other electronic calculating machines: Incorporating a printer device	1000	---	7000	92	3,771	11863	120	---	---	58	85	263	Free
8470.29.00	Other	145000	---	0	557	960	146517	---	---	---	---	---	0	Free
8471.30.00	Portable digital computers < 10 kg	2000	---	1000	7,945	68,441	79386	---	---	1722	287	2550	4559	Free

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg		UNITS				Total, Units	
8471.41.00	Comprising in the same housing at least a central Processing unit and an input unit	---	---	9000	354,058	267,106	630164	---	---	---	---	1837	1837	Free
8471.49.00	Other, presented in the form of systems	---	---	38000	29,670	35,840	103510	---	---	---	---	---	0	Free
8471.50.00	Processing units other than those of sub-heading	---	---	212000	91,205	78,613	381818	---	---	---	---	---	0	Free
8471.60.00	Input or output units, whether or not containing storage units in the same housing	---	---	91000	283	301	91584	---	---	---	---	---	0	Free
8471.70.00	Storage units	---	---	13000	8,053	6,650	27703	---	---	---	---	---	0	Free
8471.80.00	Other units of automatic data processing machines	---	---	---	30,752	33,851	64603	---	---	---	---	---	0	Free
8471.90.00	Other	---	---	---	22,870	17,439	40309	---	---	---	---	---	0	Free
8517.11.00	Telephone sets including telephones for cellular networks or for other wireless networks: Line telephone sets with cordless handsets	---	---	---	122,116	87,950	210066	---	---	---	---	---	0	Free
8517.12.90	Other	---	---	---	4,778	6,220	10998	---	---	---	---	---	0	Free
8517.18.00	Other	---	---	---	40,409	26,978	67387	---	---	---	---	---	0	Free
8517.61.00	Other apparatus for transmission or reception of voice, images or other data, including apparatus for communication in a wired or wireless network (such as a local or wide area network): Base stations	---	---	---	18,366	37,720	56086	---	---	---	---	---	0	Free
8517.62.00	Machines for the reception, conversion and transmission or regeneration of voice, images or other data, including switching and routing apparatus	---	---	---	41,415	14,041	55456	---	---	---	---	---	0	Free
8517.69.00	Other	---	---	---	4,474	6,636	11110	---	---	---	---	---	0	Free
8517.70.00	Parts	---	---	---	25,048	25,034	50082	---	---	---	---	---	0	Free
8519.50.00	Telephone answering machines	---	---	---	0	10	10	---	---	---	---	---	0	Free
ANNUAL TOTAL		**228000**	**0**	**578000**	**1270536**	**1203500**	**3280036**	**120**	**0**	**1722**	**131997**	**4472**	**138311**	

Table A5-6: Export Trade Data for IT & Telecommunication Equipment

EXPORTS														
HS Code	**HS Description**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**Duty rate**
		Kg					**Total, Kg**		**UNITS**				**Total, Units**	
8443.12.00	Offset printing machinery, sheet fed, office type (using sheet with one type and not exceeding 22 cm and the other side not exceeding 36 cm in the unfolded state)	---	---	---	---	---	---	---	---	---	---	---	---	Free
8443.13.00	Other offset printing machinery	---	---	---	---	---	---	---	---	---	---	---	---	Free
8443.14.00	Letterpress office printing machinery, reel fed, excluding flexological printing	---	---	---	---	---	---	---	---	---	---	---	---	Free
8443.15.00	Letterpress office printing machinery, reel fed, excluding flexological printing	---	---	---	---	---	---	---	---	---	---	---	---	Free
8443.16.00	Flexographic printing machinery	---	---	---	---	---	---	---	---	---	---	---	---	Free
8443.17.00	Gravure printing machinery	---	---	---	---	---	---	---	---	---	---	---	---	Free
8443.19.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	Free
8443.31.00	Other printers, copying machines and facsmile….. Etc.	---	---	---	---	---	---	---	---	---	---	---	---	Free
8443.32.00	Other capable of connecting to an automatic data processing machine or to a network	---	---	---	---	---	---	---	---	---	---	---	---	Free
8443.39.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	Free
8443.91.00	Parts and accessories: Parts and accessories of printing machinery used for printing by means of plates, cylinders and other printing components of heading84.42	---	---	---	---	32	32	---	---	---	---	---	---	Free
8443.99.00	Other	---	---	---	---	6,000	6,000	---	---	---	---	---	---	Free
8469.00.00	Typewriters other than printers of heading 84.43; word processing machines	---	---	---	63	---	63	---	---	---	---	---	---	Free
8470.10.00	Electronic calculators capable of operation without an external power source of electric power and pocket-size data recording, reproducing and displaying machines and calculating functions	---	---	1,000	---	---	1,000	---	---	---	---	---	---	Free
8470.21.00	Other electronic calculating machines: Incorporating a printer device	---	---	---	---	---	---	---	---	---	---	---	---	Free
8470.29.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	Free

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg		UNITS				Total, Units	
8471.30.00	Portable automatic data processing machines, weighing no more than 10 kg, consisting of at least a central processing unit, a keyboard and a display. Other automatic data processing machines:	---	---	---	7	99	106	---	---	---	---	---	---	Free
8471.41.00	Comprising in the same housing at least a central Processing unit and an input unit	---	---	---	549	1,988	2,537	---	---	---	---	---	---	Free
8471.49.00	Other, presented in the form of systems	---	---	---	78	362	440	---	---	---	---	---	---	Free
8471.50.00	Processing units other than those of sub-heading	---	---	---	90	163	253	---	---	---	---	---	---	Free
8471.60.00	Input or output units, whether or not containing storage units in the same housing	---	---	---	71	8	79	---	---	---	---	---	---	Free
8471.70.00	Storage units	---	---	---	24	185	209	---	---	---	---	---	---	Free
8471.80.00	Other units of automatic data processing machines	---	---	---	1	42	43	---	---	---	---	---	---	Free
8471.90.00	Other	---	---	---	761	263	1,024	---	---	---	---	---	---	Free
8517.11.00	Telephone sets including telephones for cellular networks or for other wireless networks: Line telephone sets with cordless handsets	---	---	---	---	10	10	---	---	---	---	---	---	Free
8517.12.90	Other	---	---	---	65	795	860	---	---	---	---	---	---	Free
8517.18.00	Other	---	---	---	3	6	9	---	---	---	---	---	---	Free
8517.61.00	Other apparatus for transmission or reception of voice, images or other data, including apparatus for communication in a wired or wireless network (such as a local or wide area network): Base stations	---	---	---	28,551	5,162	33,713	---	---	---	---	---	---	Free
8517.62.00	Machines for the reception, conversion and transmission or regeneration of voice, images or other data, including switching and routing apparatus	---	---	---	169	174	343	---	---	---	---	---	---	Free
8517.69.00	Other	---	---	---	54	35	89	---	---	---	---	---	---	Free
8517.70.00	Parts	---	---	---	1,476	14,214	15,690	---	---	---	---	---	---	Free
8519.50.00	Telephone answering machines	---	---	---	---	---	---	---	---	---	---	---	---	Free
ANNUAL TOTAL		**---**	**---**	**1,000**	**31,962**	**29,538**	**62,500**	**---**	**---**	**---**	**---**	**---**	**---**	

Table A5-7: Import Trade Data for Consumer Equipment

IMPORTS														
HS Code	**HS Description**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**Duty rate**
		Kg					**Total, Kg**	**UNITS**					**Total, Units**	
8518.10.00	Microphones and stands therefore Loudspeakers, whether or not mounted in their enclosures:	7,000	---	119,000	32,469	3,869	162,338	---	---	---	---	---	---	20%
8518.21.00	Single loudspeakers, mounted in their enclosures.	---	---	---	53,925	41,395	95,320	---	---	---	---	---	---	20%
8518.22.00	Loudspeakers, whether or not mounted in their enclosures Multiple loudspeakers, mounted in the same enclosure	---	---	---	2,981	5,690	8,671	---	---	---	---	---	---	20%
8518.29.00	Other	---	---	---	52,705	68,881	121,586	---	---	---	---	---	---	20%
8518.30.00	Headphones and earphones, whether or not combined with a microphone, and sets consisting of a microphone and one or more loudspeakers	6,000	---	8,000	32,513	7,556	54,069	---	---	---	---	---	---	20%
8518.40.00	Audio-frequency electric amplifiers	9,000	---	19,000	6,322	12,194	46,516	---	---	---	---	---	---	30%
8518.50.00	Electric sound amplifier sets	78,000	---	60,000	36,880	34,042	208,922	---	---	---	---	---	---	20%
8518.90.00	Parts	5,000	---	26,000	2,821	4,259	38,080	---	---	---	---	---	---	20%
8519.20.00	Apparatus operated by coins, banknotes, bank cards, tokens or by other means of payment	---	---	---	---	---	---	---	---	---	---	---	---	
8519.20.10	Coin- or disc-operated record-player	---	---	---	---	---	---	---	---	---	---	---	---	20%
8519.20.90	Other	---	---	---	171	789	960	---	---	---	---	---	---	20%
8519.30.00	Turntables (record-decks)	---	---	---	634	931	1,565	---	---	---	---	---	---	Free
8519.81.00	**Other apparatus: Using magnetic, optical or semiconductor media:**	---	---	---	---	---	---	---	---	---	---	---	---	
8519.81.10	Transcribing machines	---	---	---	1	154	155	---	---	---	---	---	---	20%
8519.81.20	Pocket-size cassette-players	---	---	---	1,541	341	1,882	---	---	---	---	---	---	20%
8519.81.30	Dictating machines not capable of operating without an external source of power	---	---	---	---	---	---	---	---	---	---	---	---	20%
8519.81.40	Other magnetic tape recorders incorporating sound reproducing apparatus	---	---	---	667	110	777	---	---	---	---	---	---	20%

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8519.81.90	Other	---	---	---	83,480	4,766	88,246	---	---	---	---	---	---	20%
8519.89.00	Other	---	---	---	99,782	96,672	196,454	---	---	---	---	---	---	20%
8521.10.00	Magnetic tape-type	---	---	121,000	11,455	7,349	139,804	---	---	---	---	---	---	30%
8521.90.00	Other	---	---	---	105,392	105,269	210,661	---	---	---	---	---	---	30%
8522.10.00	Pick-up cartridges	---	---	---	---	---	---	---	---	---	---	---	---	Free
8522.90.00	Other	5,000	---	4,000	2,485	2,429	13,914	---	---	---	---	---	---	Free
8523.21.00	**Magnetic media: Cards incorporating a magnetic stripe:**	---	---	---	---	---	---	---	---	---	---	---	---	
8523.21.10	Unrecorded	---	---	---	201	1,918	2,119	---	---	---	---	---	---	Free
8523.21.90	Recorded	---	---	---	341	1,910	2,251	---	---	---	---	---	---	20%
8523.29.00	Other:	---	---	---			---	---	---	---	---	---	---	
8523.29.10	Unrecorded audio tapes	---	---	---	1,478	1,320	2,798	---	---	---	---	---	---	Free
8523.29.20	Recorded audio tapes	---	---	---			---	---	---	---	---	---	---	20%
8523.29.30	Unrecorded video tapes	---	---	---	1,816	2,597	4,413	---	---	---	---	---	---	Free
8523.29.40	Recorded video tapes	---	---	---	335	430	765	---	---	---	---	---	---	20%
8523.29.50	Unrecorded magnetic discs	---	---	---	6,940	5,044	11,984	---	---	---	---	---	---	Free
8523.29.60	Magnetic tapes for reproducing phenomena other than that sound or image	---	---	---	241	230	471	---	---	---	---	---	---	20%
8523.29.70	Diskettes	---	---	---	-	-		---	---	---	---	---	---	Free
8523.29.90	Other	---	---	---	1,887	17	1,904	---	---	---	---	---	---	Free

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8523.40.10	Discs for laser reading system for reproducing phenomena other than sound or image	---	---	---	30	111	141	---	---	---	---	---	---	20%
8523.40.20	Discs for laser reading system for reproducing phenomena other than sound only	---	---	---	90	430	520	---	---	---	---	---	---	20%
8523.40.30	Other discs for laser reading system	---	---	---	15	1,715	1,730	---	---	---	---	---	---	20%
8523.40.40	Audio compact discs	---	---	---	16,902	7,908	24,810	---	---	---	---	---	---	30%
8523.40.50	Other compact discs	---	---	---	11,261	4,641	15,902	---	---	---	---	---	---	Free
8523.40.60	Unrecorded Audio compact discs DVD's	---	---	---	567,837	366,933	934,770	---	---	---	---	---	---	Free
8523.40.70	Recorded DVD's	---	---	---	1,918	2,581	4,499	---	---	---	---	---	---	20%
8523.40.90	Other	---	---	---	823	942	1,765	---	---	---	---	---	---	20%
8525.50.00	Transmission apparatus	---	---	---	1,692	4,132	5,824	---	---	---	---	---	---	Free
8525.60.00	Transmission apparatus incorporating reception apparatus	---	---	---	396,372	400,355	796,727	---	---	---	---	---	---	20%
8525.80.00	Television cameras, digital cameras and video camera recorders	---	---	---	93,265	39,176	132,441	---	---	---	---	9,120	9,120	20%
8526.10.00	Radar apparatus	---	---	1,500	90,022	955	92,477	---	---	---	---	---	-	Free
8526.91.00	Radio navigational aid apparatus	---	---	---	9,279	9,859	19,138	---	---	---	---	---	-	Free
8526.92.00	Radio remote control apparatus	---	---	34,000	70,062	59,129	163,191	---	---	---	---	---	-	Free
8527.12.00	Radio-broadcast receivers capable of operating without an external source of power: Pocket-size radio cassette-players	---	---	---	4,544	2,284	6,828	---	---	---	---	---	-	20%
8527.13.00	Other apparatus combined with sound recording or reproducing apparatus	---	---	---	17,894	48,671	66,565	---	---	---	2,541	5,421	7,962	20%
8527.19.00	Other	14,000	---	40,000	65,925	72,881	192,806	---	---	---	---	---	-	20%
8527.21.00	Radio-broadcast receivers not capable of operating without an external source of power, of a kind used in motor vehicles: Combined with sound recording or reproducing apparatus	6,000	---	82,000	21,788	22,689	132,477	200	---	2,297	777	826	3,900	20%

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8527.29.00	Other	27,000	---	23,000	48,596	37,679	136,275	---	---	1,820	2,370	2,235	6,425	20%
8527.91.00	Combined with sound recording or reproducing apparatus	---	---	---	11,635	14,048	25,683	---	---	---	---	114	114	20%
8527.92.00	Not combined with sound recording or reproducing apparatus but combined with a clock	---	---	---	230	1,070	1,300	---	---	---	---	---	---	20%
8527.99.00	Other	---	---	---	56,105	54,045	110,150	---	---	---	---	---	---	20%
8528.41.00	Cathode-ray tube monitors: Of a kind solely or principally used in an automatic data processing system of heading 84.71	---	---	---	30,571	36,489	67,060	---	---	---	---	---	---	Free
8528.49.00	Other	---	---	---	18,615	23,663	42,278	---	---	---	---	---	---	20%
8528.51.10	Of a kind solely or principally used in an automatic data processing system of heading 84.71	---	---	---	44,945	92,652	137,597	---	---	---	---	4,042	4,042	Free
8528.59.90	Monitors incorporating television reception apparatus	---	---	---	104,652	124,920	229,572	---	---	---	---	---	---	20%
8528.61.00	Projectors: Of a kind solely or principally used in an automatic data processing system of heading 84.71	---	---	---	4	---	4	---	---	---	48	---	48	Free
8528.69.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	20%
8528.71.00	Reception apparatus for television, whether or not incorporating radio-broadcast receivers or sound or video recording or reproducing apparatus: Not designed to incorporate a video display or Screen	---	---	---	---	---	---	---	---	---	---	44	44	20%
8528.72.00	Other, colour	---	---	---	297	75,018	75,315	---	---	---	4,329	4,080	8,409	20%
8528.73.00	Other, black and white or other monochrome	---	---	---	20,655	24,983	45,638	---	---	---	---	---	---	20%
8540.11.00	Cathode-ray television picture tubes, including video monitor cathode-ray tubes: Colour	---	---	---	99	80	179	---	---	---	64	28	92	Free
8540.12.00	Cathode-ray television picture tubes, including video monitor cathode-ray tubes: Black and white or other monochrome	---	---	---	---	---	---	---	---	---	---	---	---	Free
8540.20.00	Television camera tubes; image converters and intensifiers; other photo-cathode tubes	---	---	---	---	7	7	---	---	---	---	---	---	Free
8540.40.00	Data/graphic display tubes, colour, with a phosphor dot screen pitch smaller than 0.4 mm	---	---	---	---	---	---	---	---	---	---	---	---	Free
8540.50.00	Data/graphic display tubes, black and white or other monochrome	---	---	---	---	---	---	---	---	---	---	---	---	Free

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8540.60.00	Other cathode-ray tubes	---	---	---	39	90	129	---	---	---	---	---	---	Free
8540.81.00	Receiver or amplifier valves and tubes	---	---	---	---	---	---	---	---	---	---	---	---	Free
8540.89.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	Free
8540.91.00	Parts: Of cathode-ray tubes	---	---	---	11	---	11	---	---	---	---	---	---	Free
8540.99.00	Parts: Other	---	---	1,000	---	---	1,000	---	---	---	---	---	---	Free
8541.40.00	Photosensitive semiconductor devices, including photovoltaic cells whether or not assembled in modules or made up into panels; light emitting diodes	---	---	---	23,372	25,153	48,525	---	---	---	---	---	---	Free
9201.10.00	Upright pianos	1,000	---	2,000	---	313	3,313	2	---	6	---	1	7	10%
9201.20.00	Grand pianos	---	---	---	---	---	---	---	---	---	---	---	---	10%
9201.90.00	Other	4,000	---	2,000	200	8,207	14,407	---	---	---	---	---	---	10%
9202.10.00	Played with a bow	---	---	4,000	---	99	4,099	---	---	---	---	---	---	10%
9202.90.00	Other	---	---	---	7,343	6,942	14,285	---	---	---	---	---	---	10%
9205.10.00	Brass-wind instruments	---	---	---	70	256	326	---	---	---	---	---	---	10%
9205.90.00	**Other:**	---	---	---	6,000	5,000	1,000	---	---	---	---	---	---	
9205.90.10	Harmoniums	---	---	---	64	18	82	---	---	---	---	---	---	10%
9205.90.20	Mouth organs	---	---	---	2	-	2	---	---	---	---	---	---	10%
9205.90.90	Other	---	---	---	3,405	2,849	6,254	---	---	---	---	---	---	10%
9206	**Percussion musical instruments (for example, drums, xylophones, cymbals, castanets, maracas).**	12,000	---	11,000	10,000	9,000		---	---	789	660	---	---	
9206.00.10	Steel band instruments	---	---	---	---	214	214	---	---	---	---	---	---	20%

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
9206.00.90	Other	---	---	---	10,141	9,012	19,153	---	---	---	---	---	---	10%
9207.10.00	Keyboard instruments, other than accordions	7,000	---	2,000	2,012	767	11,779	20	---	18	30	57	105	10%
9207.90.00	Other	11,000	---	10,000	7,547	7,386	35,933	326	---	216	198	106	520	10%
9208.10.00	Musical boxes	---	---	1,000	59	109	1,168	---	---	697	---	---	697	10%
9208.90.00	Other	---	---	---	1,479	3,359	4,838	---	---	---	---	---	---	10%
9209.30.00	Musical instrument strings	---	---	---	115	---	115	---	---	---	---	---	---	10%
9209.91.00	Other: Parts and accessories for piano	---	---	---	---	---	---	---	---	---	---	---	---	10%
9209.92.00	Parts and accessories for the musical instruments of heading 92.02	---	---	---	---	---	---	---	---	---	---	---	---	10%
9209.94.00	Parts and accessories for the musical instruments of heading 92.07	---	---	---	16	---	16	---	---	---	---	---	---	10%
9209.99.00	Other	---	---	4,000	6,086	7,741	17,827	---	---	---	---	---	---	10%
ANNUAL TOTAL		**192,000**	**---**	**574,500**	**2323,547**	**2026,723**	**5064,770**	**548**	**---**	**5,843**	**11,017**	**26,074**	**41,485**	

Table A5-8: Export Trade Data for Consumer Equipment

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8518.10.00	Microphones and stands therefore Loudspeakers, whether or not mounted in their enclosures:	---	---	---	---	101	101	---	---	---	---	---	---	20%
8518.21.00	Single loudspeakers, mounted in their enclosures.	---	---	---	---	600	600	---	---	---	---	---	---	20%
8518.22.00	Loudspeakers, whether or not mounted in their enclosures Multiple loudspeakers, mounted in the same enclosure	---	---	---	520	---	520	---	---	---	4	---	4	20%
8518.29.00	Other	---	---	---	50	5,675	5,725	---	---	---	---	---	---	20%
8518.30.00	Headphones and earphones, whether or not combined with a microphone, and sets consisting of a microphone and one or more loudspeakers	---	---	---	33	---	33	---	---	---	---	---	---	20%
8518.40.00	Audio-frequency electric amplifiers	---	---	---	161	12	173	11	---	---	---	---	---	30%
8518.50.00	Electric sound amplifier sets	25,000	---	1,000	41	2,453	28,494	398	---	---	13	---	13	20%
8518.90.00	Parts	---	---	---	---	---	---	---	---	---	---	---	---	20%
8519.20.00	Apparatus operated by coins, banknotes, bank cards, tokens or by other means of payment	---	---	---	---	---	---	---	---	---	---	---	---	
8519.20.10	Coin- or disc-operated record-player	---	---	---	---	---	---	---	---	---	---	---	---	20%
8519.20.90	Other	---	---	---	---	---	---	---	---	---	---	---	---	20%
8519.30.00	Turntables (record-decks)	---	---	---	---	---	---	---	---	---	---	---	---	Free
8519.81.00	Other apparatus: Using magnetic, optical or semiconductor media:	---	---	---	---	---		---	---	---	---	---	---	
8519.81.10	Transcribing machines	---	---	---	---	190	190	---	---	---	---	---	---	20%
8519.81.20	Pocket-size cassette-players	---	---	---	---	---	---	---	---	---	---	---	---	20%
8519.81.30	Dictating machines not capable of operating without an external power source	---	---	---	---	---	---	---	---	---	---	---	---	20%
8519.81.40	Other magnetic tape recorders incorporating sound reproducing apparatus	---	---	---	---	413	413	---	---	---	---	---	---	20%

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8519.81.90	Other	---	---	---	---	142	142	---	---	---	---	---	---	20%
8519.89.00	Other	---	---	---	180	2,572	2,752	---	---	---	---	---	---	20%
8521.10.00	Magnetic tape-type	---	---	9,000	30	509	9,539	---	---	---	---	---	---	30%
8521.90.00	Other	---	---	---	85	9,171	9,256	---	---	---	---	---	---	30%
8522.10.00	Pick-up cartridges	---	---	---	---	---	---	---	---	---	---	---	---	Free
8522.90.00	Other	---	---	9,000	26	---	9,026	---	---	---	---	---	---	Free
8523.21.00	**Magnetic media: Cards incorporating a magnetic stripe:**	---	---	---	---	---	---	---	---	---	---	---	---	
8523.21.10	Unrecorded	---	---	---	---	625	625	---	---	---	---	---	---	Free
8523.21.90	Recorded	---	---	---	---	---	---	---	---	---	---	---	---	20%
8523.29.00	Other:	---	---	---	---	---	---	---	---	---	---	---	---	
8523.29.10	Unrecorded audio tapes	---	---	---	---	---	---	---	---	---	---	---	---	Free
8523.29.20	Recorded audio tapes	---	---	---	---	---	---	---	---	---	---	---	---	20%
8523.29.30	Unrecorded video tapes	---	---	---	---	---	---	---	---	---	---	---	---	Free
8523.29.40	Recorded video tapes	---	---	---	---	2	2	---	---	---	---	---	---	20%
8523.29.50	Unrecorded magnetic discs	---	---	---	---	---	---	---	---	---	---	---	---	Free
8523.29.60	Magnetic tapes for reproducing phenomena other than sound or image	---	---	---	---	---	---	---	---	---	---	---	---	20%
8523.29.70	Diskettes	---	---	---	---	---	---	---	---	---	---	---	---	Free
8523.29.90	Other	---	---	---	---	127	127	---	---	---	---	---	---	Free

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8523.40.10	Dics for laser reading system for reproducing phenomena other than sound or image	---	---	---	---	---	---	---	---	---	---	---	---	20%
8523.40.20	Discs for laser reading system for reproducing phenomena other than sound only	---	---	---	---	---	---	---	---	---	---	---	---	20%
8523.40.30	Other discs for laser reading system	---	---	---	---	---	---	---	---	---	---	---	---	20%
8523.40.40	Audio compact discs	---	---	---	7,641	75	7,716	---	---	---	---	---	---	30%
8523.40.50	Other compact discs	---	---	---	---	7	7	---	---	---	---	---	---	Free
8523.40.60	Unrecorded Audio compact discs DVD's	---	---	---	116,720	69,067	185,787	---	---	---	---	---	---	Free
8523.40.70	Recorded DVD's	---	---	---	116	135	251	---	---	---	---	---	---	20%
8523.40.90	Other	---	---	---	---	450	450	---	---	---	---	---	---	20%
8525.50.00	Transmission apparatus	---	---	---	21	2,835	2,856	---	---	---	---	---	---	Free
8525.60.00	Transmission apparatus incorporating reception apparatus	---	---	---	138	41	179	---	---	---	---	---	---	20%
8525.80.00	Television cameras, digital cameras and video camera recorder	---	---	---	20	8	28	---	---	---	---	---	---	20%
8526.10.00	Radar apparatus	---	---	---	---	15	15	---	---	---	---	---	---	Free
8526.91.00	Radio navigational aid apparatus	---	---	---	12	3	15	---	---	---	---	---	---	Free
8526.92.00	Radio remote control apparatus	---	---	---	---	16	16	---	---	---	---	---	---	Free
8527.12.00	Radio-broadcast receivers capable of operating without an external source of power: Pocket-size radio cassette-players	---	---	---	---	---	---	---	---	---	---	---	---	20%
8527.13.00	Other apparatus combined with sound recording or reproducing apparatus	---	---	---	---	25	25	---	---	---	---	---	---	20%
8527.19.00	Other	---	---	3,000	20	996	4,016	---	---	---	---	---	---	20%
8527.21.00	Radio-broadcast receivers not capable of operating without an external source of power, of a kind used in motor vehicles: Combined with sound recording or reproducing apparatus	1,000	---	6,000	---	411	7,411	16	---	133	---	19	152	20%

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8527.29.00	Other	---	---	---	---	---	---	---	---	76	---	6	82	20%
8527.91.00	Combined with sound recording or reproducing apparatus	---	---	---	---	---	---	---	---	---	---	---	---	20%
8527.92.00	Not combined with sound recording or reproducing apparatus but combined with a clock	---	---	---	---	---	---	---	---	---	---	---	---	20%
8527.99.00	Other	---	---	---	26	2,600	2,626	---	---	---	---	---	---	20%
8528.41.00	Cathode-ray tube monitors: Of a kind solely or principally used in an automatic data processing system of heading 84.71	---	---	---	50	162	212	---	---	---	---	---	---	Free
8528.49.00	Other	---	---	---	125	54,211	---	---	---	---	---	---	---	20%
8528.51.10	Of a kind solely or principally used in an automatic data processing system of heading 84.71	---	---	---	45	13	58	---	---	---	---	---	---	Free
8528.59.90	Monitors incorporating television reception apparatus	---	---	---	757	1,986	2,743	---	---	---	---	---	---	20%
8528.61.00	Projectors: Of a kind solely or principally used in an automatic data processing system of heading 84.71	---	---	---	647	3,225	3,872	---	---	---	---	---	---	Free
8528.69.00	Other	---	---	---	18,483	3,606	22,089	---	---	---	---	---	---	20%
8528.71.00	Reception apparatus for television, whether or not incorporating radio-broadcast receivers or sound or video recording or reproducing apparatus: Not designed to incorporate a video display or Screen	---	---	---	5	207	212	---	---	---	---	---	---	20%
8528.72.00	Other, colour	---	---	---	402,402	338,620	741,022	---	---	---	7	809	816	20%
8528.73.00	Other, black and white or other monochrome	---	---	---	---	---	---	---	---	---	---	---	---	20%
8540.11.00	Cathode-ray television picture tubes, including video monitor cathode-ray tubes: Colour	---	---	---	---	---	---	---	---	---	---	---	---	Free
8540.12.00	Cathode-ray television picture tubes, including video monitor cathode-ray tubes: Black and white or other monochrome	---	---	---	---	---	---	---	---	---	---	---	---	Free
8540.20.00	Television camera tubes; image converters and intensifiers; other photo-cathode tubes	---	---	---	---	---	---	---	---	---	---	---	---	Free
8540.40.00	Data/graphic display tubes, colour, with a phosphor dot screen pitch smaller than 0.4 mm	---	---	---	---	---	---	---	---	---	---	---	---	Free
8540.50.00	Data/graphic display tubes, black and white or other monochrome	---	---	---	---	---	---	---	---	---	---	---	---	Free

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8540.60.00	Other cathode-ray tubes	---	---	---	---	---	---	---	---	---	---	---	---	Free
8540.81.00	Receiver or amplifier valves and tubes	---	---	---	---	---	---	---	---	---	---	---	---	Free
8540.89.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	Free
8540.91.00	Parts: Of cathode-ray tubes	---	---	---	---	---	---	---	---	---	---	---	---	Free
8540.99.00	Parts: Other	---	---	---	---	---	---	---	---	---	---	---	---	Free
8541.40.00	Photosensitive semiconductor devices, including photovoltaic cells whether or not assembled in modules or made up into panels; light emitting diodes	---	---	---	---	---	---	---	---	---	---	---	---	Free
9201.10.00	Upright pianos	---	---	---	---	---	---	---	---	---	---	---	---	10%
9201.20.00	Grand pianos	---	---	---	---	---	---	---	---	---	---	---	---	10%
9201.90.00	Other	---	---	---	---	250	250	---	---	---	---	1	1	10%
9202.10.00	Played with a bow	---	---	---	---	---	---	---	---	---	---	---	---	10%
9202.90.00	Other	---	---	---	174	---	174	---	---	---	---	---	---	10%
9205.10.00	Brass-wind instruments	---	---	---	---	---	---	---	---	---	---	---	---	10%
9205.90.00	**Other:**	---	---	---	---	---	10,000	---	---	---	---	---	---	
9205.90.10	Harmoniums	---	---	---	---	---	---	---	---	---	---	---	---	10%
9205.90.20	Mouth organs	---	---	---	---	---	---	---	---	---	---	---	---	10%
9205.90.90	Other	---	---	---	---	250	250	---	---	---	---	---	---	10%
9206	Percussion musical instruments (for example, drums, xylophones, cymbals, castanets, maracas).	---	---	---	---	---	---	74	---	---	---	---	---	
9206.00.10	Steel band instruments	---	---	---	---	---	---	---	---	---	---	---	---	20%

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
9206.00.90	Other	---	---	---	55	75	130	---	---	---	---	---	---	10%
9207.10.00	Keyboard instruments, other than accordions	---	---	---	---	---	---	---	---	---	---	---	---	10%
9207.90.00	Other	3,000	---	---	138	---	3,138	---	---	---	---	---	---	10%
9208.10.00	Musical boxes	---	---	---	---	---	---	---	---	---	---	---	---	10%
9208.90.00	Other	---	---	---	12	40	52	---	---	---	---	---	---	10%
9209.30.00	Musical instrument strings	---	---	---	---	---	---	---	---	---	---	---	---	10%
9209.91.00	Other: Parts and accessories for piano	---	---	---	---	---	---	---	---	---	---	---	---	10%
9209.92.00	Parts and accessories for the musical instruments of heading 92.02	---	---	---	---	---	---	---	---	---	---	---	---	10%
9209.94.00	Parts and accessories for the musical instruments of heading 92.07	---	---	---	7	---	7	---	---	---	---	---	---	10%
9209.99.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	10%
ANNUAL TOTAL		**29000**	**0**	**28000**	**548740**	**501921**	**1063325**	**499**	**0**	**209**	**24**	**835**	**1068**	

Table A5-9: Import Trade Data for Lighting Equipment

IMPORTS														
HS Code	**HS Description**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**Duty rate**
		Kg					**Total, Kg**		**UNITS**				**Total, Units**	
8512.10.00	Lighting or visual signalling equipment or the kind used on bicycles	1,000	---	4,000	2,948	1,959	9,907	1,525	---	1,891	1,256	1,663	6,335	Free
8512.20.00	Other lighting or visual signalling equipment	60,000	---	104,000	58,839	63,799	286,638	28,393	---	32,720	23,738	23,000	107,851	25%
8513.10.00	Portable electric lamps, designed to function by their own source of energy, other than lighting equipment of heading 85.12 (85.13) - Lamps	66,000	---	15,000	47,066	39,382	167,448	---	---	---	---	---	---	25%
8513.90.00	Parts for above	---	---	---	19	---	19	---	---	---	---	---	---	25%
8539.10.00	Sealed bean lamp units	17,000	---	16,000	35,835	41,096	109,931	---	---	---	---	---	---	Free
8539.21.00	Tungsten halogen filament lamps	---	---	---	35,835	41,096	76,931	---	---	1396,773	915,437	---	2312,210	20%
8539.22.00	Filament lamps of a power not exceeding 200 W and for a voltage exceeding 100 V	---	---	101,000	114,904	57,042	272,946	---	---	---	---	---	---	20%
8539.29.00	Other filament lamps, excluding ultra-violet or infra-red lamps	---	---	---	14,823	24,229	39,052	---	---	---	---	---	---	20%
8539.31.00	Fluorescent lamps, hot cathode	75,000	---	110,000	80,399	43,482	308,881	176,045	---	253,382	152,144	98,864	680,435	20%
8539.32.00	Mercury or sodium vapour lamps; metal halide lamps	---	---	---	159	1,024	1,183	---	---	---	730	1,478	2,208	20%
8539.39.00	Other discharge lamps other than IUV lamps	40,000	---	67,000	62,643	48,616	218,259	---	---	---	---	---	---	20%
8539.41.00	Arc lamps	---	---	1,000	---	---	1,000	---	---	136	---	---	136	20%
8539.49.00	Ultra-violet or infra-red lamps	---	---	---	1,654	138	1,792	---	---	---	---	---	---	20%
8539.90.00	Parts for ultra-violet or infra-red lamps; arc lamps	2,000	---	1,000	6,285	2,008	11,293	---	---	---	---	---	---	20%
9006.61.00	Discharge lamps ("electronic") flashlight apparatus	5,000	---	1,000	26	39	6,065	---	---	---	5	---	5	20%
9006.69.00	Other photographic flashlight apparatus	---	---	---	950	200	1,150	---	---	---	---	---	---	20%
	ANNUAL TOTAL	**266,000**	**---**	**420,000**	**462,385**	**364,110**	**1512,495**	**205,963**	**---**	**1684,902**	**1093,310**	**125,005**	**3109,180**	

Table A5-10: Export Trade Data for Lighting Equipment

EXPORTS														
HS Code	**HS Description**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**Duty rate**
		Kg					**Total, Kg**		**UNITS**				**Total, Units**	
8512.10.00	Lighting or visual signalling equipment or the kind used on bicycles	---	---	---	---	192	192	---	---	---	---	---	---	Free
8512.20.00	Other lighting or visual signalling equipment	---	---	---	6	21	27	---	---	---	---	---	---	25%
8513.10.00	Portable electric lamps, designed to function by their own source of energy, other than lighting equipment of heading 85.12 (85.13) - Lamps	---	---	---	2,310	4,953	7,263	---	---	---	---	---	---	25%
8513.90.00	Parts for above	---	---	---	---	---	---	---	---	---	---	---	---	Free
8539.10.00	Sealed bean lamp units	---	---	---	---	1,387	1,387	---	---	---	---	---	---	30%
8539.21.00	Tungsten halogen filament lamps	---	---	---	---	---	---	---	---	---	---	---	---	20%
8539.22.00	Filament lamps of a power not exceeding 200 W and for a voltage exceeding 100 V	---	---	---	---	2	2	---	---	16,061	---	---	16,061	20%
8539.29.00	Other filament lamps, excluding ultra-violet or infra-red lamps	---	---	---	---	---	---	---	---	---	---	---	---	20%
8539.31.00	Fluorescent lamps, hot cathode	1,000	---	---	---	---	1,000	2,761	---	---	---	---	2,761	20%
8539.32.00	Mercury or sodium vapour lamps; metal halide lamps	---	---	---	34	960	994	---	---	---	---	---	---	20%
8539.39.00	Other discharge lamps other than UV lamps	---	---	---	---	---	---	---	---	---	---	---	---	20%
8539.41.00	Arc lamps	---	---	---	---	---	---	---	---	---	---	---	---	20%
8539.49.00	Ultra-violet or infra-red lamps	---	---	---	---	---	---	---	---	---	---	---	---	20%
8539.90.00	Parts for ultra-violet or infra-red lamps; arc lamps	---	---	---	---	110	110	---	---	---	---	---	---	20%
9006.61.00	Discharge lamps ("electronic") flashlight apparatus	---	---	---	---	---	---	---	---	---	---	---	---	20%
9006.69.00	Other photographic flashlight apparatus	---	---	---	---	640	640	---	---	---	---	---	---	20%
ANNUAL TOTAL		**1,000**	**---**	**---**	**2,350**	**8,265**	**11,615**	**2,761**	**---**	**16,061**	**---**	**---**	**18,822**	

Table A5-11: Import Trade Data for Electrical and Electronic Tools

IMPORTS														
HS Code	**HS Description**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**Duty rate**
		Kg					**Total, Kg**	**UNITS**					**Total, Units**	
8424.20.00	Spray guns and similar appliances	102,000	---	61,000	80,091	79,775	322,866	---	---	---	---	---	---	Free
8424.81.00	Other appliances:	35,000	---	159,000	322,243	447,658	963,901	---	---	---	---	---	---	Free
8424.89.00	Agricultural or horticultural	7,000	---	12,000	16,341	32,701	68,042	---	---	---	---	---	---	Free
8424.90.10	Parts: Of agricultural sprayers	27,000	---	79,000	314,533	41,894	462,427	---	---	---	---	---	---	Free
8424.90.90	Other	---	---	---	863,251	51,505	914,756	---	---	---	---	---	---	Free
8432.80.10	Lawn or sports-ground rollers	---	---	---	668	275	943	---	---	---	---	---	---	Free
8432.80.90	Other	---	---	---	7,869	965	8,834	---	---	---	---	---	---	Free
8432.90.00	**Parts**	7,000	---	12,000	9,000	13,000	41,000	---	---	---	---	---	---	
8432.90.10	Of lawn or sports-ground rollers of sub-heading 8432.80.10	---	---	---	457	164	621	---	---	---	---	---	---	Free
8432.90.90	Other	---	---	---	8,974	12,963	21,937	---	---	---	---	---	---	Free
8452.21.00	Other sewing machines: Automatic units	---	---	---	---	539	539	---	---	---	---	---	---	Free
8452.29.00	Other	---	---	---	718	2,528	3,246	---	---	---	---	---	---	Free
8452.90.00	Other parts of sewing machines	8,000	---	4,000	1,361	1,728	15,089	---	---	---	---	---	---	Free
8455.10.00	Tube mills	---	---	---	---	683	683	---	---	---	---	---	---	Free
8455.21.00	Other rolling mills: Hot or combination hot and cold	---	---	---	---	9,000	9,000	---	---	---	---	---	---	Free
8455.22.00	Cold	---	---	---	---	---	-	---	---	---	---	---	---	Free

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8455.90.00	Other parts	4,000	---	13,000	---	---	17,000	---	---	---	---	---	---	Free
8458.11.00	Horizontal lathes: Numerically controlled	---	---	22,000	1,264	2,232	25,496	---	---	---	---	---	---	Free
8458.19.00	Other	---	---	---	856	29,318	30,174	---	---	---	---	---	---	Free
8458.91.00	Other lathes: Numerically controlled	---	---	---	-	1,158	1,158	---	---	---	---	---	---	Free
8458.99.00	Other	---	---	---	3,699	36,906	40,605	---	---	---	---	---	---	Free
8459.61.00	Other milling machines: Numerically controlled	---	---	---	---	---	-	---	---	---	---	---	---	Free
8459.69.00	Other	---	---	---	988	93,341	94,329	---	---	---	---	---	---	Free
8459.70.00	Other threading or tapping machines	---	---	---	7	119	126	---	---	---	---	---	---	Free
8461.20.00	Shaping or slotting machines	---	---	---	8,311	272	8,583	---	---	---	---	---	---	Free
8461.30.00	Broaching machines	---	---	---	---	---	-	---	---	---	---	---	---	Free
8461.40.00	Gear cutting, gear grinding or gear finishing machines	---	---	---	3,465	13,459	16,924	---	---	---	---	---	---	Free
8461.50.00	Sawing or cutting-off machines	---	---	---	22,005	27,286	49,291	---	---	---	---	---	---	Free
8461.90.00	Other	---	---	---	17,635	71,921	89,556	---	---	---	---	---	---	Free
8462.21.00	Bending, folding, straightening or flattening machines (including presses): Numerically controlled	---	---	---	9,630	---	9,630	---	---	---	---	---	---	Free
8462.29.00	Other	---	---	---	51,957	140,481	192,438	---	---	---	---	---	---	Free
8462.31.00	Shearing machines (including presses), other than combined punching and shearing machines: Numerically controlled	---	---	---	---	---	-	---	---	---	---	---	---	Free
8462.39.00	Other	---	---	---	5,597	15,836	21,433	---	---	---	3	---	3	Free
8462.41.00	Numerically controlled presses	---	---	---	---	---	-	---	---	---	---	---	---	Free

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8462.49.00	Other	---	---	---	9,746	25,250	34,996	---	---	---	---	---	---	Free
8462.91.00	Other: Hydraulic	---	---	---	6,526	4,583	11,109	---	---	---	---	---	---	Free
8462.99.00	Other	---	---	---	71,840	49	71,889	---	---	---	---	---	---	Free
8463.20.00	Thread rolling machines	---	---	---	---	---	-	---	---	---	---	---	---	Free
8463.90.00	Other	---	---	1,000	981	233	2,214	---	---	---	---	---	---	Free
8464.10.00	Sawing machines	---	---	---	10,746	9,667	20,413	---	---	---	---	---	---	Free
8464.20.00	Grinding or polishing machines	---	---	---	1,402	1,243	2,645	---	---	---	---	---	---	Free
8464.90.00	Other	---	---	31,000	14,008	104,151	149,159	---	---	---	---	---	---	Free
8465.10.00	Machines which can carry out different types of machining operations without a tool change between such operations	---	---	---	12,164	753	12,917	---	---	---	---	---	---	Free
8465.91.00	Other: Sawing machines	---	---	---	58,227	172,919	231,146	---	---	---	---	---	---	Free
8465.92.00	Planing, milling or moulding (by cutting) machines	---	---	---	29,950	49,561	79,511	---	---	---	---	---	---	Free
8465.93.00	Grinding, sanding or polishing machines	---	---	---	22,074	7,308	29,382	---	---	---	---	---	---	Free
8465.94.00	Bending or assembling machines	---	---	---	700	4,063	4,763	---	---	---	---	9	9	Free
8465.95.00	Drilling or morticing machines	---	---	---	21,462	23,232	44,694	---	---	---	---	---	---	Free
8465.96.00	Splitting, slicing or paring machines	---	---	---	10,994	4,554	15,548	---	---	---	---	---	---	Free
8465.99.00	Other	---	---	---	6,656	10,019	16,675	---	---	---	---	---	---	Free
8466.10.00	Tool holders and self-opening dieheads	---	---	---	44	71	115	---	---	---	---	---	---	Free
8466.20.00	Work holders	---	---	---	90	102	192	---	---	---	---	---	---	Free

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8466.30.00	Dividing heads and other special attachments for machine-tools	---	---	---	3,678	245	3,923	---	---	---	---	---	---	Free
8466.91.00	Other: For machines of heading 84.64	---	---	---	3,019	879	3,898	---	---	---	---	---	---	Free
8466.92.00	For machines of heading84.65	---	---	---	9,819	101,606	111,425	---	---	---	---	---	---	Free
8466.93.00	For machines of headings 84.56 to 84.61	---	---	---	17,253	5,457	22,710	---	---	---	---	---	---	Free
8466.94.00	For machines of heading 84.62 or 84.63	---	---	---	3,058	1,652	4,710	---	---	---	---	---	---	Free
8467.21.00	With self-contained electric motor: Drills of all kinds	---	---	---	115,493	53,282	168,775	---	---	---	3,254	8,323	11,577	Free
8467.22.00	With self-contained electric motor:Saws	---	---	---	21,598	23,427	45,025	---	---	---	530	679	1,209	Free
8467.29.00	Other	---	---	---	211,534	479,268	690,802	---	---	---	7,072	14,071	21,143	Free
8467.81.00	Other tools: Chain saws	44,000	---	49,000	30,562	48,329	171,891	2,501	---	2,407	1,404	2,127	8,439	Free
8467.91.00	Parts: Of chain saws	18,000	---	7,000	11,821	9,553	46,374	---	---	---	---	---	---	Free
8467.99.00	Other	5,000	---	14,000	45,204	31,197	95,401	---	---	---	---	---	---	Free
8468.10.00	Hand-held blow pipes	4,000	---	2,000	8,921	3,697	18,618	---	---	---	1,385	---	1,385	Free
8468.80.00	Other machinery and apparatus	3,000	---	17,000	5,870	4,389	30,259	---	---	---	---	---	---	Free
8468.90.00	Parts	10,000	---	10,000	24,598	26,740	71,338	---	---	---	---	---	---	Free
ANNUAL TOTAL		**274,000**	**---**	**493,000**	**2540,958**	**2335,186**	**5643,144**	**2,501**	**---**	**2,407**	**13,648**	**25,209**	**43,765**	

Table A5-12: Export Trade Data for Electrical and Electronic Tools

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8424.20.00	Spray guns and similar appliances	---	---	---	---	931	931	---	---	---	---	---	---	Free
8424.81.00	Other appliances:	---	---	1,000	1,500	---	2,500	---	---	---	---	---	---	Free
8424.89.00	Agricultural or horticultural	---	---	1,000	---	100	1,100	---	---	---	---	---	---	Free
8424.90.10	Parts:	---	---	---	---	---	---	---	---	---	---	---	---	Free
8424.90.90	Other	---	---	---	100	62	162	---	---	---	---	---	---	Free
8432.80.10	Lawn or sports-ground rollers	---	---	---	---	---	---	---	---	---	---	---	---	Free
8432.80.90	Other	---	---	---	1,500	---	1,500	---	---	---	---	---	---	Free
8432.90.00	Parts	---	---	---	---	---	---	---	---	---	---	---	---	
8432.90.10	Of lawn or sports-ground rollers of sub-heading 8432.80.10	---	---	---	---	---	---	---	---	---	---	---	---	Free
8432.90.90	Other	---	---	---	156	---	156	---	---	---	---	---	---	Free
8452.21.00	Other sewing machines: Automatic units	---	---	---	---	---	---	---	---	---	---	---	---	Free
8452.29.00	Other	---	---	---	25	---	25	---	---	---	---	---	---	Free
8452.90.00	Other parts of sewing machines	---	---	---	---	50	50	---	---	---	---	---	---	Free
8455.10.00	Tube mills	---	---	---	---	---	---	---	---	---	---	---	---	Free
8455.21.00	Other rolling mills: Hot or combination hot and cold	---	---	---	---	---	---	---	---	---	---	---	---	Free
8455.22.00	Cold	---	---	---	---	---	---	---	---	---	---	---	---	Free
8455.90.00	Other parts	---	---	---	---	---	---	---	---	---	---	---	---	Free

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8458.11.00	Horizontal lathes: Numerically controlled	---	---	---	11,000	---	11,000	---	---	---	---	---	---	Free
8458.19.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	Free
8458.91.00	Other lathes: Numerically controlled	---	---	---	---	---	---	---	---	---	---	---	---	Free
8458.99.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	Free
8459.61.00	Other milling machines: Numerically controlled	---	---	---	---	---	---	---	---	---	---	---	---	Free
8459.69.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	Free
8459.70.00	Other threading or tapping machines	---	---	---	---	---	---	---	---	---	---	---	---	Free
8461.20.00	Shaping or slotting machines	---	---	---	---	250	250	---	---	---	---	---	---	Free
8461.30.00	Broaching machines	2,000	---	---	---	---	2,000	---	---	---	---	---	---	Free
8461.40.00	Gear cutting, gear grinding or gear finishing machines	22,000	---	52,000	3,000	164	77,164	---	---	---	---	---	---	Free
8461.50.00	Sawing or cutting-off machines	40,000	---	72,000	22,000	27,000	161,000	---	---	---	---	---	---	Free
8461.90.00	Other	24,000	---	26,000	18,000	72,000	140,000	---	---	---	---	---	---	Free
8462.21.00	Bending, folding, straightening or flattening machines (including presses): Numerically controlled	---	---	---	---	---	---	---	---	---	---	---	---	Free
8462.29.00	Other	---	---	---	2,000	---	2,000	---	---	---	---	---	---	Free
8462.31.00	Shearing machines (including presses), other than combined punching and shearing machines: Numerically controlled	---	---	---	---	---	---	---	---	---	---	---	---	Free
8462.39.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	Free
8462.41.00	Numerically controlled presses	---	---	---	---	---	---	---	---	---	---	---	---	Free
8462.49.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	Free

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8462.91.00	Other: Hydraulic	---	---	---	---	---	---	---	---	---	---	---	---	Free
8462.99.00	Other	---	---	---	1,345	---	1,345	---	---	---	---	---	---	Free
8463.20.00	Thread rolling machines	---	---	---	---	---	---	---	---	---	---	---	---	Free
8463.90.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	Free
8464.10.00	Sawing machines	---	---	---	---	---	---	---	---	---	---	---	---	Free
8464.20.00	Grinding or polishing machines	---	---	---	110	---	110	---	---	---	---	---	---	Free
8464.90.00	Other	---	---	---	13,200	21,105	34,305	---	---	---	---	---	---	Free
8465.10.00	Machines which can carry out different types of machining operations without a tool change between such operations	---	---	---	---	---	---	---	---	---	---	---	---	Free
8465.91.00	Other: Sawing machines	---	---	---	---	---	---	---	---	---	---	---	---	Free
8465.92.00	Planning, milling or moulding (by cutting) machines	---	---	---	---	---	---	---	---	---	---	---	---	Free
8465.93.00	Grinding, sanding or polishing machines	---	---	---	---	51	51	---	---	---	---	---	---	Free
8465.94.00	Bending or assembling machines	---	---	---	---	---	---	---	---	---	---	---	---	Free
8465.95.00	Drilling or mortising machines	---	---	---	---	---	---	---	---	---	---	---	---	Free
8465.96.00	Splitting, slicing or paring machines	---	---	---	150	215	365	---	---	---	---	---	---	Free
8465.99.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	Free
8466.10.00	Tool holders and self-opening die heads	---	---	---	---	---	---	---	---	---	---	---	---	Free
8466.20.00	Work holders	---	---	---	---	---	---	---	---	---	---	---	---	Free
8466.30.00	Dividing heads and other special attachments for machine-tools	---	---	---	---	---	---	---	---	---	---	---	---	Free

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8466.91.00	Other: For machines of heading 84.64	---	---	---	---	---	---	---	---	---	---	---	---	Free
8466.92.00	For machines of heading84.65	---	---	---	---	200	200	---	---	---	---	---	---	Free
8466.93.00	For machines of headings 84.56 to 84.61	---	---	---	---	200	200	---	---	---	---	---	---	Free
8466.94.00	For machines of heading 84.62 or 84.63	---	---	---	14	185	199	---	---	---	---	---	---	Free
8467.21.00	With self-contained electric motor: Drills of all kinds	---	---	---	153	114	267	---	---	---	---	---	---	Free
8467.22.00	With self-contained electric motor: Saws	---	---	---	---	27	27	---	---	---	---	---	---	Free
8467.29.00	Other	---	---	---	---	1,198	1,198	---	---	---	---	---	---	Free
8467.81.00	Other tools: Chain saws	---	---	---	87	25	112	---	---	---	---	---	---	Free
8467.91.00	Parts: Of chain saws	---	---	---	---	---	---	---	---	---	---	---	---	Free
8467.99.00	Other	---	---	---	---	403	403	---	---	---	---	---	---	Free
8468.10.00	Hand-held blow pipes	---	---	---	---	---	---	---	---	---	---	---	---	Free
8468.80.00	Other machinery and apparatus	---	---	---	7,050	6,608	13,658	---	---	---	---	---	---	Free
8468.90.00	Parts	---	---	---	---	---	---	---	---	---	---	---	---	Free
ANNUAL TOTAL		**88,000**	**---**	**152,000**	**81,390**	**130,888**	**452,278**	**---**	**---**	**---**	**---**	**---**	**---**	

Table A5-13: Import Trade Data for Toys, Leisure and Sporting Equipment

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8903.99.00	Other	1952,000	---	206,000	223,468	303,961	2685,429	---	---	---	---	---	---	20%
9504.10.00	Video games of a kind used with a television receiver	11,000	---	5,000	6,378	6,893	29,271	---	---	---	---	---	---	20%
9504.30.00	Other games, operated by coins, banknotes, bank cards, tokens or by other means of payment, other than bowling alley equipment	76,000	---	74,000	108,604	---	258,604	---	---	---	---	---	---	20%
ANNUAL TOTAL		**2039,000**	**---**	**285,000**	**338,450**	**310,854**	**2973,304**	**---**	**---**	**---**	**---**	**---**	**---**	**---**

Table A5-14: Export Trade Data for Toys, Leisure and Sporting Equipment

EXPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8903.99.00	Other	1,000	---	15,000	7,000	1,015	24,015	---	---	---	---	---	---	20%
9504.10.00	Video games of a kind used with a television receiver	---	---	---	---	---	---	---	---	---	---	---	---	20%
9504.30.00	Other games, operated by coins, banknotes, bank cards, tokens or by other means of payment, other than bowling alley equipment	25,000	---	---	6,020	22,006	53,026	---	---	---	---	---	---	20%
ANNUAL TOTAL		**26,000**	**---**	**15,000**	**13,020**	**23,021**	**77,041**	**---**	**---**	**---**	**---**	**---**	**---**	

Table A5-15: Import Trade Data for Medical Equipment

IMPORT														
HS Code	**HS Description**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**Duty rate**
		Kg					**Total, Units**	**UNITS**					**Total, Units**	
9011.10.00	Stereoscopic microscopes	---	---	---	---	---	---	---	---	---	---	---	---	Free
9011.80.00	Other microscopes, for photomicrography, cinephotomicrography or micro projection	---	---	---	248	49	297	---	---	---	---	---	---	Free
9011.90.00	Parts and accessories for above	---	---	---	0	83	83	---	---	---	---	---	---	Free
9012.10.00	Microscopes other than optical microscopes; diffraction apparatus	---	---	1000	1286	313	2599	---	---	---	---	---	---	Free
9012.90.00	Parts and accessories for diffraction apparatus	---	---	---	181	38	219	---	---	---	---	---	---	Free
9018.11.00	Electro-diagnostic apparatus (including apparatus for functional exploratory examination or for checking physiological parameters (90.18) - electro-cardiographs	---	---	---	13	241	254	11	---	2	---	---	13	10%
9018.12.00	Ultrasonic scanning apparatus	---	---	---	641	502	1143	---	---	---	---	---	---	10%
9018.13.00	Magnetic Resonance Imaging apparatus (MRI)	---	---	---	60	2	62	---	---	---	---	---	---	10%
9018.14.00	Scintigraphy apparatus	---	---	---	---	---	---	---	---	---	---	---	---	10%
9018.19.00	Other electro-diagnostic apparatus[1]	2	---	1	6786	468	7257	---	---	---	---	---	---	10%
9018.20.00	Ultra-violet or infra-red ray apparatus	---	---	---	22647	17	22664	---	---	---	---	---	---	10%
9022.12.00	Computed tomography apparatus	---	---	21000	8756	40	29796	---	---	---	5	---	5	10%
9022.13.00	X-ray apparatus for dental use	---	---	---	23	190	213	---	---	---	---	---	---	10%
9022.14.00	Other x-ray apparatus for medical, surgical or veterinary uses	---	---	---	1702	0	1702	---	---	---	1	---	1	10%
9022.21.00	Apparatus based on the use of alpha, beta or gamma radiations, whether or not for medical, surgical, dental or veterinary uses, including radiography or radiotherapy apparatus: For medical, surgical, dental or veterinary uses	---	---	---	0	1122	1122	---	---	---	---	---	---	10%
9022.30.00	X-ray tubes	---	---	---	41	0	41	---	---	---	---	---	---	10%
9022.90.00	Parts & accessories for apparatus based on the use of x-rays or other radiations	---	---	---	769	15695	16464	---	---	---	---	---	---	10%
ANNUAL TOTAL		**2**	**---**	**---**	**2535**	**17007**	**19542**	**---**	**---**	**---**	**6**	**---**	**19**	

Table A5-16: Export Trade Data for Medical Equipment

EXPORT														
HS Code	**HS Description**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product Total, Kg**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product Total, Units**	**Duty rate**
		Kg						**UNITS**						
9011.10.00	Stereoscopic microscopes	---	---	---	---	---	---	---	---	---	---	---	---	Free
9011.80.00	Other microscopes, for photomicrography, cinephotomicrography or micro projection	---	---	---	---	20	20	---	---	---	---	---	---	Free
9011.90.00	Parts and accessories for above	---	---	---	---	---	---	---	---	---	---	---	---	Free
9012.10.00	Microscopes other than optical microscopes; diffraction apparatus	---	---	---	---	---	---	---	---	---	---	---	---	Free
9012.90.00	Parts and accessories for diffraction apparatus	---	---	---	---	---	---	---	---	---	---	---	---	Free
9018.11.00	Electro-diagnostic apparatus (including apparatus for functional exploratory examination or for checking physiological parameters (90.18) - electro-cardiographs	---	---	---	---	---	---	---	---	---	---	---	---	10%
9018.12.00	Ultrasonic scanning apparatus	---	---	---	---	---	---	---	---	---	---	---	---	10%
9018.13.00	Magnetic Resonance Imaging apparatus (MRI)	---	---	---	55	116	171	---	---	---	---	---	---	10%
9018.14.00	Scintigraphy apparatus	---	---	---	---	---	---	---	---	---	---	---	---	10%
9018.19.00	other electro-diagnostic apparatus[1]	---	---	---	10	21	31	---	---	---	---	---	---	10%
9018.20.00	Ultra-violet or infra-red ray apparatus	---	---	---	29	---	29	---	---	---	---	---	---	10%
9022.12.00	Computed tomography apparatus	---	---	---	---	---	---	---	---	---	---	---	---	10%
9022.13.00	X-ray apparatus for dental use	---	---	---	---	---	---	---	---	---	---	---	---	10%
9022.14.00	Other x-ray apparatus for medical, surgical or veterinary uses	---	---	---	---	---	---	---	---	---	---	---	---	10%
9022.21.00	Apparatus based on the use of alpha, beta or gamma radiations, whether or not for medical, surgical, dental or veterinary uses, including radiography or radiotherapy apparatus: For medical, surgical, central or veterinary uses	---	---	---	---	---	---	---	---	---	---	---	---	10%
9022.30.00	X-ray tubes	---	---	---	---	---	---	---	---	---	---	---	---	10%
9022.90.00	X-ray tubes	---	---	---	74	284	358	---	---	---	---	---	---	10%
ANNUAL TOTAL		**---**	**---**	**---**	**168**	**441**	**609**	**---**	**---**	**---**	**---**	**---**	**---**	

Table A5-17: Import Trade Data for Monitor and Control Equipment

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
8531.10.00	Burglar or fire alarms and similar apparatus	106,000	---	65,000	57,141	69,376	297,517	---	---	---	---	---	---	Free
9016.00.00	Balances of a sensitivity of 5cg or better, with or without weights	5,000	---	2,000	6,860	625	14,485	---	---	---	---	---	---	Free
9026.10.00	Instruments and apparatus for measuring or checking the flow or level of liquids	---	---	52,000	8,306	59,360	119,666	---	---	---	---	---	---	Free
9026.20.00	Instruments and apparatus for measuring or checking pressure	---	---	---	13,296	14,098	27,394	---	---	---	---	---	---	Free
9026.80.00	Other instruments and apparatus for measuring or checking variables of liquids or gases	---	---	---	8,312	5,391	13,703	---	---	---	---	---	---	Free
9026.90.00	Parts of ins & app for measuring or checking variables of liquids or gases	---	---	---	2,669	2,932	5,601	---	---	---	---	---	---	Free
9030.10.00	Instruments & apparatus for measuring or detecting ionising radiations	2,000	---	4,000	3,802	3,151	12,953	---	---	---	---	---	---	Free
9030.20.00	Cathode-ray oscilloscopes and oscillographs	---	---	---	20	8	28	---	---	---	---	---	---	Free
9030.31.00	Multimeters	---	---	---	27,754	17,464	45,218	---	---	---	---	---	---	Free
9030.32.00	Multimeters with recording device	---	---	---	16,355	29,935	46,290	---	---	---	---	---	---	Free
9030.33.00	Instruments & app for measuring or checking voltage, current	---	---	---	89	169	258	---	---	---	---	---	---	Free
9030.39.00	Instruments & app for measuring or checking voltage, current etc. (w/o recording device)	---	---	43,000	208	445	43,653	---	---	---	---	---	---	Free
9030.82.00	Instruments for measuring or checking semiconductor wafers or devices	---	---	---	129	---	129	---	---	---	---	---	---	Free
9030.83.00	Recording electrical measurement instruments	---	---	---	---	---	---	---	---	---	---	---	---	Free
9030.84.00	Instruments and appliances for measuring or checking electrical quantities	---	---	---	705	370	1,075	---	---	---	---	---	---	Free
9030.89.00	Instruments and apparatus for measuring or checking electrical quantities	---	---	2,000	376	414	2,790	---	---	---	---	---	---	Free

IMPORTS														
HS Code	HS Description	2007	2008	2009	2010	2011	Product	2007	2008	2009	2010	2011	Product	Duty rate
		Kg					Total, Kg	UNITS					Total, Units	
9030.90.00	Parts and accessories for instruments and apparatus for measuring or checking electrical quantities	---	---	---	204	143	347	---	---	---	---	---	---	Free
9031.10.00	Machines for balancing mechanical parts	4,000	---	6,000	8,119	3,570	21,689	---	---	---	---	---	---	Free
9031.20.00	Test benches	1,000	---	---	2,043	1,854	4,897	---	---	---	---	---	---	Free
9031.30.00	Profile projectors	---	---	---	---	---	---	---	---	---	---	---	---	Free
9031.41.00	Optical instruments for checking semiconductor wafers	---	---	---	---	---	---	---	---	---	---	---	---	Free
9031.49.00	Other optical instruments for measuring or checking	---	---	---	887	479	1,366	---	---	---	---	---	---	Free
9031.80.00	Other measuring or checking instruments, appliances and machines	17,000	---	22,000	26,328	5,546	70,874	---	---	---	---	---	---	Free
9031.90.00	Parts and accessories for measuring or checking instruments	1,000	---	---	9,052	260	10,312	---	---	---	---	---	---	Free
9032.10.00	Automatic regulating or controlling instruments and apparatus (90.32) - thermostats	---	---	3,000	4,921	2,200	10,121	---	---	---	---	---	---	Free
9032.20.00	Manostats	---	---	---	430	261	691	---	---	---	---	---	---	Free
9032.81.00	Hydraulic or pneumatic automatic regulating or controlling instruments & appliances	---	---	---	164	71	235	---	---	---	---	---	---	Free
9032.89.00	Automatic regulating or controlling instruments and apparatus (90.32)	---	---	42,000	21,176	21,219	84,395	---	---	---	---	---	---	Free
9032.90.00	Parts for above	---	---	---	618	100	718	---	---	---	---	---	---	Free
9033.00.00	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof	2,000	---	4,000	5,536	4,977	16,513	---	---	---	---	---	---	Free
ANNUAL TOTAL		**138,000**	**---**	**245,000**	**225,500**	**244,418**	**852,918**	**---**	**---**	**---**	**---**	**---**	**---**	

Table A5-18: Export Trade Data for Monitor and Control Equipment

EXPORT														
HS Code	**HS Description**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**Duty rate**
		Kg					**Total, Kg**	**UNITS**					**Total, Units**	
8531.10.00	Burglar or fire alarms and similar apparatus	---	---	---	24	---	24	---	---	---	---	---	---	Free
9016.00.00	Balances of a sensitivity of 5cg or better, with or without weights	---	---	---	6	5	11	---	---	---	---	---	---	Free
9026.10.00	Instruments and apparatus for measuring or checking the flow or level of liquids	---	---	2,000	80	124	2,204	---	---	---	---	---	---	Free
9026.20.00	Instruments and apparatus for measuring or checking pressure	---	---	---	---	40	40	---	---	---	---	---	---	Free
9026.80.00	Other instruments and apparatus for measuring or checking variables of liquids or gases	---	---	---	4,620	423	5,043	---	---	---	60	---	60	Free
9026.90.00	Parts of ins & app for measuring or checking variables of liquids or gases	---	---	---	21	32	53	---	---	---	---	---	---	Free
9030.10.00	Instruments & apparatus for measuring or detecting ionising radiations	---	---	---	757	13,249	14,006	---	---	---	---	---	---	Free
9030.20.00	Cathode-ray oscilloscopes and oscillographs	---	---	---	---	---	---	---	---	---	---	---	---	Free
9030.31.00	Multimeters	---	---	---	60	822	882	---	---	---	---	---	---	Free
9030.32.00	Multimeters with recording device	---	---	---	85	1,001	1,086	---	---	---	---	---	---	Free
9030.33.00	Instruments & app for measuring or checking voltage, current	---	---	---	---	17	17	---	---	---	---	---	---	Free
9030.39.00	Instruments & app for measuring or checking voltage, current etc (w/o recording device)	---	---	---	---	---	---	---	---	---	---	---	---	Free
9030.82.00	Instruments for measuring or checking semiconductor wafers or devices	---	---	---	---	108	108	---	---	---	---	---	---	Free
9030.83.00	Recording electrical measurement instruments	---	---	---	---	---	---	---	---	---	---	---	---	Free
9030.84.00	Instruments and appliances for measuring or checking electrical quantities	---	---	---	26	25	51	---	---	---	---	---	---	Free
9030.89.00	Instruments and apparatus for measuring or checking electrical quantities	---	---	---	120	5	125	---	---	---	---	---	---	Free
9030.90.00	Parts and accessories for instruments and apparatus for measuring or checking electrical quantities	---	---	---	3,192	35	3,227	---	---	---	---	---	---	Free

9031.10.00	Machines for balancing mechanical parts	---	---	---	---	8	8	---	---	---	---	---	---	Free
9031.20.00	Test benches	---	---	---	---	480	480	---	---	---	---	---	---	Free
9031.30.00	Profile projectors	---	---	---	---	---	---	---	---	---	---	---	---	Free
9031.41.00	Optical instruments for checking semiconductor wafers	---	---	---	---	---	---	---	---	---	---	---	---	Free
9031.49.00	Other optical instruments for measuring or checking	---	---	---	---	41	41	---	---	---	---	---	---	Free
9031.80.00	Other measuring or checking instruments, appliances and machines	2,000	---	3,000	901	1,344	7,245	---	---	---	---	---	---	Free
9031.90.00	Parts and accessories for measuring or checking instruments	1,000	---	---	343	9,174	10,517	---	---	---	---	---	---	Free
9032.10.00	Automatic regulating or controlling instruments and apparatus (90.32) - thermostats	---	---	---	150	---	150	---	---	---	---	---	---	Free
9032.20.00	Manostats	---	---	---	---	---	---	---	---	---	---	---	---	Free
9032.81.00	Hydraulic or pneumatic automatic regulating or controlling instruments & appliances	---	---	---	---	---	---	---	---	---	---	---	---	Free
9032.89.00	Automatic regulating or controlling instruments and apparatus (90.32)	---	---	---	36	12	48	---	---	---	---	---	---	Free
9032.90.00	Parts for above	---	---	---	---	---	---	---	---	---	---	---	---	Free
9033.00.00	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof	---	---	4,000	10	46	4,056	---	---	---	---	---	---	Free
ANNUAL TOTAL		**3000**	**0**	**9000**	**10431**	**26991**	**49422**	**0**	**0**	**0**	**60**	**0**	**60**	

Table A5-19: Import Trade Data for Automatic Dispensers

IMPORTS														
HS Code	**HS Description**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**Duty rate**
		Kg					**Total, Kg**	**UNITS**					**Total, Units**	
8472.90.00	Other	28000	---	41000	5,182	52,431	126613	---	---	---	---	---	---	Free
8476.21.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	20%
8476.29.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	20%
8476.81.00	Other machines: incorporating heating or refrigerating devices	---	---	---	---	---	---	---	---	---	---	---	---	20%
8476.89.00	Other	---	---	---	3,434	3,223	6657	---	---	---	---	---	---	20%
8476.90.00	Parts	---	---	4000	---	---	4000	---	---	---	---	---	---	20%
ANNUAL TOTAL		**28000**	**---**	**45000**	**8616**	**55654**	**137270**	**0**	**0**	**0**	**0**	**0**	**0**	

Table A5-20: Export Trade Data for Automatic Dispensers

EXPORTS														
HS Code	**HS Description**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**2007**	**2008**	**2009**	**2010**	**2011**	**Product**	**Duty rate**
		Kg					**Total, Kg**	**UNITS**					**Total, Units**	
8472.90.00	Other	1,000	---	---	50	317	1,367	---	---	---	---	---	---	Free
8476.21.00	Other	---	---	---	---	---	---	---	---	3	---	---	3	20%
8476.29.00	Other	---	---	---	---	---	---	---	---	---	---	---	---	20%
8476.81.00	Other machines: incorporating heating or refrigerating devices	---	---	---	---	---	---	---	---	---	---	---	---	20%
8476.89.00	Other	---	---	---	---	100	100	---	---	---	---	---	---	20%
8476.90.00	Parts	---	---	---	---	---	---	---	---	---	---	---	---	20%
	ANNUAL TOTAL	**1,000**	**---**	**---**	**50**	**417**	**1,467**	**---**	**---**	**3**	**---**	**---**	**3**	

THE BASEL CONVENTION REGIONAL CENTRE FOR TRAINING AND TECHNOLOGY TRANSFER FOR THE CARIBBEAN REGION

#8 Alexandra Street, St. Clair, Port-of-Spain, Trinidad and Tobago

Tel.: (868) 628-8369 / (868) 628-9372

Fax: (868) 628-2151

Email: bcrc.caribbean@gmail.com

Web: bcrc-caribbean.blogspot.com

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