



E-WASTE

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ABSTRACT: *In recent decades, the use of electronic and electrical devices has increased significantly, leading to rapidly rising amounts of waste electrical and electronic equipment, often also called e-waste, throughout the world. The Solving the e-Waste Problem Initiative, an organization composed of various UN agencies, NGOs and companies working in the Information and Communication Technology (ICT) Sector. E-waste is a highly complex waste stream, as it contains both very scarce and valuable as well as highly toxic components. Mobile phones, for instance, consist of up to 1000 different components, many of which contain toxic elements such as lead, cadmium or brominated flame retardants. When burned, these elements release toxic emissions. Many detrimental health effects are connected to the recycling and disposal of e-waste when performed without the necessary safety precautions. For instance, lead affects the nervous and blood system. Its effects on children are particularly negative, damaging their brain development. Although the term e-“waste” suggests otherwise, it is also made up of – if only to a very small percentage – precious metals like silver or gold and special metals such as indium. A PC produced today contains roughly 1 g of gold; in the early phases of PC generation, it reached amounts of up to 4 g. This illustrates that the recycling and disposal of obsolete products requires highly sophisticated methods so as to recover as many resources as possible and keep the risk to humans and the environment as low as possible. In spite of this need, great quantities of e-waste are dismantled or recycled in developing countries and countries in transition, using “backyard” techniques which pose substantial dangers to both unprotected workers and the environment*

1. SOURCES OF E-WASTE

The majority of Indian e-waste is generated domestically. Imports still account for a substantial amount of WEEE, but their share is decreasing. The main sources of WEEE are governmental institutions public and private sector institutions, product and component manufacturers, and individual households. The following sections will examine the above named sources more closely. In order to enable a comparison to other parts of this report, the Indian definition of e-waste primarily includes old computers and associated equipment as well as mobile phones. These items become obsolete much more quickly than other electronics. In India, the general lifespan of a computer is three to five years. In contrast to that, the lifespan of a television, refrigerator or washing machine is ten to fifteen years

1.1 PRIVATE CONSUMERS

While there is no public waste service system for municipal waste in place in India, the waste sector, despite its informality, is highly organized. Indian system has developed very organically, as a natural branching of the scrap industry which accepts scrap from many sources including old ships, many households and businesses simply put the waste in front of the door and wait until the waste collectors.

1.2 MANUFACTURERS, BUSINESSES AND GOVERNMENT INSTITUTIONS

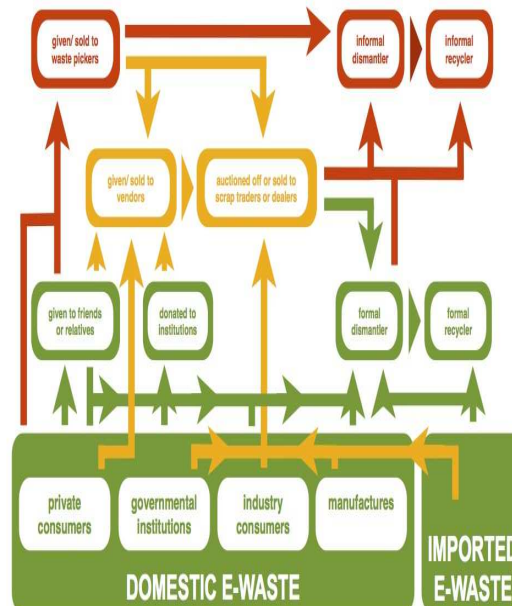
While it is estimated that private consumers generate only about 20% of India’s e-waste, governmental institutions, and industry in general, and especially manufacturers of electrical and electronic equipment share the main responsibility for the constantly growing stream of e-waste. One of the biggest consumers of electronic products in India is the government. Sectors such as health care and defence rely on up-to-date equipment. Consequently, they replace their old electronic products frequently, thus creating a vast amount of e-waste. Another major source is the EEE manufacturing industry. In addition to the Indian companies, nearly all global electronic manufacturers have set up facilities in India. While it is in the self-interest of the manufactures to increase their sales by producing products with a short lifespan, the side effect is an ever-increasing amount of e-waste

1.3 IMPORTS:

The e-waste that reaches India comes from all across the world. A recent study by ÖkoPol prepared for the German Federal Environment Agency states that 80% of the waste is imported from the US and the remaining share of 20% mainly from the EU (Sander & Schilling, 2010:66). While these statistics could be used to answer variables 3a and 3b to some extent, they have to be regarded with caution.

The figures derive from a telephone interview the authors conducted with Mr. Radha Krishna, CEO of the E-Waste Agency (EWA) in Bangalore, India. It can be assumed that they are based on rough estimations instead of available data.

2. WASTE FLOW WITHIN INDIA



The e-waste trade value chain as depicted in the above diagram shows the complexity of the e-waste flow within India. Not only does the e-waste have a number of different points of origin, but the different stakeholders involved in the value chain are also interlinked with each other. Accordingly, the e-waste does not follow one set path. While the green coloured steps in the above diagram show the formal recycling sector and the red one indicates the informal one, the yellow stakeholders are semi-formal. Their status depends very much on their interaction with the other stakeholders. They thus link both sectors together. Direct interactions between the informal and formal sector occur as well, but are less common. All studies that have tried to trace the way e-waste travels have shown that the waste most likely ends up with scrap traders and dealers. For economic reasons, these traders and dealers commonly opt to send the e-waste on to the informal sector.

PUBLIC AWARENESS

In India, environmental awareness in general is rather low. This is mainly due to the fact that in many areas in India, people are struggling to earn enough money to live. Thus, environmental concerns rank low on their personal agenda. This is especially true for the issue of e-waste, as it is a rather new issue and has no directly visible consequences for the general public.

3. CONCLUSION

Managing the growing stream of e-waste in India presents several challenges. Informal e-waste recycling dominates the industry, accounting for 90 to 95 percent of all recycling. However, informal recycling creates a number of problems that will increase as the domestic production continues to grow. Although a potential source of income for people in poverty, informal e-waste recycling exposes workers and the environment to a number of toxins. Compared to formal recycling techniques more chemicals are used and inappropriately disposed of per gram of gold recovered. However, the toxic recycling processes used are effective at recovering gold. Additionally, future increases in metal prices are unlikely to erode the advantages that have ensured the informal sectors' dominance. Existing legislation in India is insufficient for tackling these problems. Difficulties caused by a lack of dedicated regulation are compounded by existing rules that are neither adhered to nor monitored; the enforcement of existing regulation remains a problem in India.