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E-WASTE MANAGEMENT AND SWACH BHARAT ABHIYAN- A STUDY

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ABSTRACT
India is a big market of electronic devices. The modern and advanced electronic appliances and gadgets display a very promising picture of India. On the other hand, India's rank is very low in cleanliness. This pathetic situation shows a poor picture of India. Clean India is still a dream of our country. Recognizing the importance of cleanliness and the proper disposal of garbage, the prime minister of India initiated the Swach Bharat Abhiyan which was officially launched on 2nd October 2014 in New Delhi. While people today are aware about this mission, electronic waste or e-Waste is still an unfamiliar term for the majority of people. The e-waste is one of the fastest growing waste streams. It contains many hazardous constituents that may negatively impact the environment and affect human health if not properly managed. Therefore, e-waste management is a big challenge and it requires the active participation of each citizen of India. This paper discusses the emerging issues and challenges of e-waste management in India and argues that it should be taken an integral part of the Swach Bharat Abhiyan.

KEYWORDS: E-waste, Electronic hazards, Swach BharatAbhiyan

INTRODUCTION

Advances in the field of science and technology brought about industrial revolution in the 18th Century which marked a new era in human civilization. In the 20th Century, the information and communication revolution has brought enormous changes in the way we organize our lives, our economies, industries and institutions. The Prime Minister's call for Digital India has created great enthusiasm among people of India as well as abroad. Digital infrastructure, delivery of services and digital literacy are the aims of Digital India and electronic inclusion of people will strengthen Indian democracy with highly accountable and transparent government. It is evident that this electronic inclusion will gear up the generation of electronic waste with computers, laptops, mobile phones and other telecommunication equipment as major source of E-Waste.

E-waste consists of waste electrical & electronic equipment that are to be discarded. India generates about 1.5 Million tonnes of E-waste each year. UN predicted that by 2020 e-waste from computers would jump by 500 percent and from discarded mobile phones would be 18 times higher than 2007 level in India. Electronic waste itself does not cause direct damage to us but unscientific processing of this scrap is detrimental to human health and wellbeing.

The electronics industry is the world's largest and fastest growing manufacturing industry. Recent policy changes in India have led to an influx of leading multinational companies to set up electronics manufacturing facilities and R&D centres for hardware and software. This has no doubt helped the Indian economy to grow faster and fueled increase in the consumption rate of electronics products. Along with the economic growth and availability of electronics goods in the market has increased temptation of consumers to replace their household Like hazardous waste, the problem of e-waste has become an immediate and long term concern as its unregulated accumulation and recycling can lead to major environmental problems endangering human health. The information technology has revolutionized the way we live, work and communicate bringing countless benefits and wealth to all its users. The creation of innovative and new technologies and the globalization of the economy have made a whole range of products available and affordable to the people changing their lifestyles significantly. New electronic products have become an integral part of our daily lives providing us with more comfort, security, easy and faster acquisition and exchange of information.

WHAT IS E WASTE

E-waste consists of all waste from electronic and electrical appliances which have reached their end- of- life period or are no longer fit for their original intended use and are destined for recovery, recycling or disposal. It includes computer and its accessories monitors, printers, keyboards, central processing units; typewriters, mobile phones and chargers, remotes, compact discs, headphones, batteries, LCD/Plasma TVs, air conditioners, refrigerators and other household appliances. The composition of e-waste is diverse and falls under 'hazardous' and 'non-hazardous' categories. Broadly, it consists of ferrous and non-ferrous metals, plastics, glass, wood and plywood, printed circuit boards, concrete, ceramics,

rubber and other items. Iron and steel constitute about 50% of the waste, followed by plastics (21%), non-ferrous metals (13%) and other constituents. Non-ferrous metals consist of metals like copper, aluminium and precious metals like silver, gold, platinum, palladium and so on.6 The presence of elements like lead, mercury, arsenic, cadmium, selenium, hexavalent chromium, and flame retardants beyond threshold quantities make e-waste hazardous in nature. It contains over 1000 different substances, many of which are toxic, and creates serious pollution upon disposal.7 Obsolete computers pose the most significant environmental and health hazard among the e-wastes.

There are 10 States that contribute to 70 per cent of the total e-waste generated in the country, while 65 cities generate more than 60 per cent of the total e-waste in India. Among the 10 largest e-waste generating States, Maharashtra ranks first followed by Tamil Nadu, Andhra Pradesh, Uttar Pradesh, West Bengal, Delhi, Karnataka, Gujarat, Madhya Pradesh and Punjab. Among the top ten cities generating e-waste, Mumbai ranks first followed by Delhi, Bengaluru, Chennai, Kolkata, Ahmedabad, Hyderabad, Pune, Surat and Nagpur.14 The main sources of electronic waste in India are the government, public and private (industrial) sectors, which account for almost 70 per cent of total waste generation. The contribution of individual households is relatively small at about 15 per cent; the rest being contributed by manufacturers. Though individual households are not large contributors to waste generated by computers, they consume large quantities of consumer durables and are, therefore, potential creators of waste

STATUS OF E-WASTE INITIATIVES

The Ministry of Environment & Forests (MoEF) of the government of India is responsible for environmental legislation and its control. The Central Pollution Control Board (CPCB), an autonomous body under the MoEF, plays an important role in drafting guidelines and advising the MoEF on policy matters regarding environmental issues.

Historically, in 2001 in cooperation with MoEF, the German Technology Cooperation (GTZ) began work on hazardous waste management in India through the advisory services in environmental management. Subsequently, Swiss Federal Laboratories for Material Testing and Research (EMPA) started to implement its global programme 'Knowledge Partnerships in e-waste Recycling.' Combining the knowledge and technical expertise of EMPA on e-waste management, coupled with the field experience of the Indo-German projects in managing hazardous waste in India, the Indo-German-Swiss e waste initiative was born in 2004. The vision of this initiative is to establish a clean e-waste channel that is a

1. Convenient collection and disposal system for large and small consumers to return all their e-waste safely.
2. Voluntary system for modern and concerned producers to care for their product beyond its useful life.
3. Financially secure system that makes environmentally and socially responsible e-waste recycling viable

The objectives of the initiative are:

1. Reduce the risks to the population and the pollution of the environment resulting from unsafe handling
2. Focus on knowledge transfer to and skills upgrade of all involved stakeholders through trainings and seminars
3. Target mainly the existing informal recyclers allowing for their maximum but safe participation

FUTURE E-WASTE CONCERNS AND CHALLENGES

1. Accurate figures not available for rapidly increasing e-waste volumes generated domestically and by imports
2. Low level of awareness among manufacturers and consumers of the hazards of incorrect e-waste disposal
3. No accurate estimates of the quantity of e-waste generated and recycled available in India
4. Major portion of e-waste is processed by the informal (unorganised) sector using rudimentary techniques such as acid leaching and open-air burning, which results in severe environmental damage
5. e-waste workers have little or no knowledge of toxins in e-waste and are exposed to health hazards
6. High-risk backyard recycling operations impact vulnerable social groups like women, children and immigrant labourers
7. Inefficient recycling processes result in substantial losses of material value and resources
8. Cherry-picking by recyclers who recover precious metals (gold, platinum, silver, copper, etc) and improperly dispose of the rest, posing environmental hazards
9. No specific legislation for dealing e waste management

STRUCTURE OF THE PROPOSED E WASTE LEGISLATIONS

Following steps were taken by the government to manage the e waste in India

1. Title: E-waste (Management & Handling) Rules to be published under the Environment Protection Act
2. The Objective is to put in place an effective mechanism to regulate the generation, collection, storage, transportation, import, export, environmentally sound recycling, treatment and disposal of e-waste. This includes refurbishment, collection system and producer's responsibility, thereby reducing the wastes destined for final disposal.
3. Essence: The producer of electrical and electronic equipment is responsible for the entire life cycle of its own branded product and in particular the environmentally sound end-of-life management and facilitating collection and take back.
4. Responsibility of each element in the e-waste value chain:
   - Producers
   - Dealers
   - Collection agencies/ collection Centres
   - Dismantlers
   - Recyclers
   - Consumer and bulk consumers

5. Procedure for authorisation of producers, collection agencies, dismantlers, recyclers and enforcement agencies
6. Procedure for registration/renewal of registration of recyclers
7. Regulations for import of e-waste
8. Liability of producers, collection agencies, transporters, dismantlers and recyclers
9. Information & tracking
10. Elimination of hazardous substances used in e-equipment
11. Setting up of designated authority to ensure transparency, audit and inspect facilities, examine authorisation/registration, etc

WHO in its E-Waste and Child Health Initiative report has warned about these consequences of e-waste. **National Green Tribunal** has also expressed similar concern about e-waste causing broad spectrum of ecological damage. Therefore, it's about time that e-waste be managed through environmentally sound processes causing least harm to human health and environment and checking its diversion to landfills or incineration plants.

Indian government has recognised the problem of e-waste and has madeE-Waste (Management & handling), Rules, 2011 but due to lack of proper awareness among the private and government bodies the problem is being ignored. The Swachh Bharat Abhiyan puts focus on awareness and aims to ensure 100% collection and scientific processing /disposal reuse/recycle of Municipal Solid Waste. Therefore, its only logical that Electronic Waste is included in this campaign. This will generate awareness among citizens and will ensure proper management of e-waste.

CONCLUSION

The IT Sector has been playing a leading role in the growth of the Indian economy, which is emerging as one of the fastest growing economies in the world. The huge size of the domestic market coupled with the large 219 Sunita Narain, 'A different waste model', 21 May 2010. 220 Ibid. n. 187. 110 consumer base will continue to increase the consumption patterns resulting in generation of huge quantities of waste. The unmanageable desire for comforts and wealth in the name of industrialization or technological progress and the resultant generation of waste were the things that the Father of our Nation, Mahatma Gandhi had warned the 'Europeans' against in 1938. He wrote: "The incessant search for material comfort and their multiplication is such an evil and I make bold to say that the Europeans themselves will have to remodel their outlook, if they are not to perish under the weight of the comforts to which they are becoming slaves."221 But, today, every consumer in India may as well heed this warning. Gandhi was critical of industrialism for the fact that the impetus behind it was 'greed' and not 'philanthropy' to save labour.222 Given that a certain degree of physical harmony and comfort is necessary, he had said that: "A technological society has two choices. First, it can wait until catastrophic failures expose systemic deficiencies, distortions, and self-deceptions. Secondly, a culture can provide social checks and balances to correct for systemic distortion prior to catastrophic failures."223 The future scenario has, indeed, presented both challenges and opportunities in terms of minimizing wants, managing e-waste as well as developing cleaner and more sustainable products. It is, therefore, important that viable solutions are found to address the problem of the e-waste involving skilled manpower from the informal sector of the economy and the use of appropriate technology. Besides, the urgent need for evolving sound policy and robust regulatory mechanism for safe and sustainable e-waste management can hardly be over emphasized. More importantly, the cardinal principles of accountability, transparency and sustainability need to be incorporated in any policy or regulation on e-waste to ensure its proper implementation.

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