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Research Paper

"Menace Of Electronic And Electrical Waste In Developing Countries"

Environmental Science

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ABSTRACT

Electrical and Electronic Wastes, in spite of all the hue and cry globally; there is a lot of to be taken care of. No doubt developing countries like India are trying their best to empower and polish themselves as a developed nation, problems emerge. Import of e-waste helps countries like India to come out of the ashes right into the fire. A MAIT GTZ study says 50,000 metric tonne of e-waste is illegally imported to India. [1] If this continues results of accumulation of E-waste would be disastrous. What goes unnoticed by many in this lot is that the improper disposal of e-waste in developing countries is anyway going to affect the environment globally only to create havoc; Price of which we all would have to pay one day or the another.

Between the other problems of a developing country like poverty, hunger, illiteracy, unemployment; government and residents of the country hardly focus on the need to employ stringency in proper disposal of e-waste. Resultant, the waste that can be used and disposed off in an environmentally healthy manner gets recycled and reused to be filled up in a landfill, only to increase the concentrations of heavy metals like Mercury and thereby poisoning the environment. If not dumped in a landfill, e-waste is simply burnt which makes the emission of poisonous gases airborne affecting the flora and fauna of the environment which obviously includes the workers involved in disposing off the waste and the human beings, animals and the vegetation of that area.

This paper talks about the menace created by e-waste, why is it more so in developing countries, laws implemented in developing countries (taking India as an example) and stringency required to get rid of this waste. Keeping in mind to change our outlook from e-waste to e-wealth, considering it not as a waste but as an upcoming business, yet to be intelligently handled and explored.

INTRODUCTION:

The last two decades of the twentieth century and the first fourteen years of the twenty first century (and the development of the technology continues unabated and in leaps and bounds) and are marked as the era of Information Technology. And, as is evident, the growth of newer technology has eased and improved the quality of our living. With the era of "smart phones and dumb people" the intelligent human is playing with a technology so advanced that it almost stands as an addict. Reverting back is no option. While the dependence on the smarter technology is on growth, the disposal of older technology is also evident. That, being not because the older technology would not fulfill the need to carry out the function, but because the new technology is much more advanced and serves the mankind better than the older one. As a result older technology is disposed off as obsolete. The disposed items include televisions, refrigerators, air conditioners, calculators, computer, mobile phones, etc [2]. 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 [3].

In spite of the global norms, which do not allow the export of toxic material. Transboundary flow of e-waste is taking place illegally. The exporters seem to derive a good profit out of this business. What remains to be seen is how they are disposed off. That they might not bother about. The waste is dumped into wastelands of developing countries and such countries being poor and backward take no incentive to revolt against this. As a matter of fact parts from e-waste are taken and sold to local dealers who make cheap and low quality electronic items out of this waste. The work is done in unhygienic, unsafe conditions. People working and establishing around that area seem to be affected as the effluents, radiations, smoke continue to poison the environment. There is eventually so much waste sometimes that the local dealers who import the waste burn it off just to reduce the volume. The availability of cheap labor and lack of regulations and enforcement of laws has led to mushrooming of small sets of unorganized sectors, which dismantle the e-waste to get their two ends meet. Places like Shastri Park in New Delhi seem to have many such unorganized mushroomed dismantlers. For the people it is a source to keep their families fed, only to end up exposing themselves to toxin, and thereby health problems. Lack of literacy and hunger doesn't make them think logically. As a result they work irrespective of the conditions they've been provided. Many are lured into profession because it did not need a great deal of qualification and was fairly easy.

More importantly the issue would come to a positive side only if the companies design their products in a green way leaving aside their need to grow richer day by day and creating huge profits by introducing cheap toxic material and making products designed to be dumped after maximum span of two-three years. To ensure this "take back" laws are shooting up. These laws make it an obligation for the company which makes the device is made to dispose it too. Having such laws into action may affect the e-waste crisis multifold as the companies automatically would not just give a greener product but would also look out for giving parts of the product so they have a longer shelf life.

The sad part remains the unorganized sector which uses the e-waste as their income; these are expert people too, as they've dealt with e-waste since ever. What we can do about them would be, perhaps to use this labor in a proper recycling unit and let them earn and continue their work in better and hygienic conditions. It is to be brought into light that this waste is not a waste but resource in disguise. Not only the take back laws and export laws are needed to be implemented also, the unprivileged poor working on this waste needs to be taken care of. The MOEF norms seem to be a boon to the concern towards menace, it brings in ray of hope. Much is still left to be taken care of.

MENACE CREATED BY ELECTRONIC AND ELECTRICAL WASTE IN DEVELOPING COUNTRIES

The electrical and electronic waste possesses a threat to the environment. After the reports of e-waste smuggling to India by various developed nations like US, Australia, Canada and parts of Europe [4] the Indian government plans to put up a law against the import of e-waste. The whole concept of dumping was conceived from the fact that developed countries can dump their garbage into the poor countries, and, it is very much legal, except that it must be recyclable and reusable. This gives e-waste to get into the category of "used products" and fetch a decent profit from transboundary flow of this waste. Sadly, India is one of the favorite dump yards, not just in e-waste but also in other sorts of waste. The developed countries, which are more financially well off and technologically better off than the

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developed countries can take up their own waste, recycle it and re-use it. But only a third of total waste developed is properly recycled. Rest is exported illegally in the name of re-usable goods.

What happens once this waste is exported to poor countries is now not a concern for the exporters. Poorer countries do not have financial incentives to recycle these goods nor do they have an infrastructure that allows the countries to aid this waste. This waste is dismantled at local collection centre, which dismantle the e-waste in the very primitive ways. Dismantling is done in conditions which would not only affect the environment but also the health of the workers, many of which are small children working in order to earn a living.

The Basel Action Network aka BAN which is a non-profit organization is an organization which keeps a good look on developed countries so they do not dump their waste into the under-developed countries or use other countries as a dump-yard to get rid of their own waste. Primarily working from U.S.A. globally with particular focus in **Europe** (due to strong leadership in global environmental initiatives), **Asia** (due to being primary victim area of toxic trade) and in the **USA** (due to poor record of global stewardship and their indiscriminate dumping of toxic wastes such as electronic waste and toxic ships) [5].

Such organizations may be bliss for developing countries if they co-operate with the organization and do not allow the import of e-waste. Many countries still consider the export of toxic waste to poor countries as legal and do not include the export as illegal even in their jurisdictions. Although, European countries have come up with the "WASTE ELECTRONIC AND ELECTRICAL EQUIPMENT DIRECTIVE" (WEEE) 2002/96/EC directive which is made on the purpose of Europe dealing with its own generated electronic waste. Serious amendments continue to take place in WEEE, since it could not set up some of its targets. The ultimate aim of European Union now is to recycle at least up to 85% of the total generated e-waste by 2016. [6]

MOEF NORMS IN INDIA TOWARDS THE CONCERN OF E-WASTE

On 12 May 2011, MINISTRY OF ENVIRONMENT AND FOREST put up a notification which put up the rules to be implemented in order to take care of e-waste. In exercise of powers conferred by section 6, 8 and 25 of the Environment (protection) Act, 1986, the central government set up the rules which would come into effect from May the 1st 2012. It laid down clear definitions with respect to most of important parts of the protection act. According to MOEF norms, the responsibility of handling is divided between producer, consumer, collection centers, dismantlers and recyclers.

According to MOEF norms, responsibilities of a producer include; collection of e-waste generated during the process of production and channelizing it for re-cycling or disposal. Collection of e-waste their products which rendered obsolete with the principle of "extended producer responsibility", setting up collection centers, spreading awareness, obtaining an authorization from the concerned State Pollution Control Board and maintaining records to be available for scrutiny by the State Pollution Control Board. The responsibilities of collection centers are to get an authorization from the State Pollution Control Board and ensuring the waste goes to licensed dismantler(s) or Recycler(s) only. Responsibility of a consumer is to discard e-waste only to a proper authorized collection centers. According to the act, every dismantler shall, obtain an authorization and registration from the State Pollution Control Board in accordance with procedure under the rule 9 and 11, ensure no damage is done to environment during storage and transport, to ensure the e-waste doesn't have adverse affect on the health of workers and people around it. Ensuring the procedure of dismantling meets the standards of guidelines published by Central Pollution Control Board. Ensuring the dismantled waste is segregated properly and sent to registered recycling centers. A dismantler, according to the act, cannot use the e-waste for refining any part unless he/she is registered by State Pollution Control board as a recycler for refining and recovery of material.

The Norm also has put up the "Procedure for seeking authorization and registration for e-wastes". The State Pollution Control Board has the power to suspend or cancel an authorization if in its opinion, the holders of authorization fail to comply with any of the provisions mentioned in the Act.

MOEF norms on e-waste furthermore give the procedure for storage. It is claimed in the act that every collector, recycler, dismantler or producer may store the e-waste for a period f not more than one hundred and eighty days. Exceptions to this rule is an extension up to an year if; Collection Centers do not have registered recycling unit facility or the waste which needs to be specifically stored for development of a process for its recycling. In Chapter V of MOEF norms, rules for the reduction in the use of Hazardous substances in the manufacture of Electrical and Electronic equipments are laid down clearly. This particularly is important to ensure the companies do not add harmful substances just to get hold of huge profits. This will ensure a focus to go on a greener approach for the further business. MOEF norms are very well structured and put up. It includes a holistic approach to erase of the load of e-waste. An annual report is submitted to the State Pollution Control board by September the 30th every year. State Pollution Control Board prepares a consolidated annual report on management of e-waste and forwards it to the Central Government along with its recommendations by December the 30th every year.

The Norms in India are out, yet a lot of action needs to be done, enforcement of laws been set being most important. Till the time no strict laws are set in, it is difficult to eradicate the mushroomed business of e-waste by unskilled labors.

CONCLUSION:

Menace of e-waste is one of the concerns affecting the whole world. Dealing with the e-waste on a scale of a country requires not just good planning and laws, but, stringency in laws and working hard on it. Setting up more collection centers, implementing take back laws, setting up more recycling units and in general awareness of people is mandatory. Unfortunately because people do not know much about e-waste and the threat from it they do not consider it as any different and thus are thrown away in the dustbins. People are required to be made aware of potential threats and disposing their waste to a collection center is the correct way to dispose the waste.

Everybody in the society is interdependent. With collaboration of awareness, planning, finance, technology and hard work against the "menace caused by e-waste" earth certainly will be a better place to reside in.

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