BEST E-WASTE MANAGEMENT PRACTICES ACROSS THE GLOBE

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Abstract

Efficient waste collection is considered as the fundamental services in smart cities in India. As on date in our country, 420 million people dumb 62 million tonnes of garbage every year. Out of which, 7.9 million tonnes of garbage are hazardous waste and 14 per cent of hazardous waste are e-waste. All together 11 per cent of wastes are recycled and remaining is dumped into soil without any treatment leading to pollution. In today's world, each and every person living across the globe are worried about the drastic environmental changes happening due to exploitation of natural resources as well as the ill effects of improper waste management system. With an aim to make this planet human friendly and handover the natural resource to the next generation without depleting it much we need to be more cautious in our activities. Across the globe, all stakeholders have started realising this fact and initiated basic activities to lead a disease free, hygienic and healthy environment. In this paper, authors throw light on the best environment waste management across the globe, which need to be spread across to all to create awareness and be cautious of conserving our environment. .

Key words: Environment wastes, e-waste management, environmental pollution, environmental sustainability, etc.

1. Introduction

E-waste is a common but informal name given for electronic products approaching the end of their useful life. The current and the future production of e-waste, the potential environmental problems associated with their disposal and management practices are discussed by all, whereas the existing e-waste management is not covering all these aspects and satisfies only meagre requirements. E-wastes are considered dangerous, as certain components of some electronic products contain materials that are harmful, depending on their condition and density. The harmful content of these materials pose a threat to human health and environment. The toxic emissions of e-waste, when mixes with virgin soil and air, it causes harmful effects to the entire biota either directly or indirectly. Direct impacts are: release of acids, toxic compounds including heavy metals, carcinogenic chemicals, and indirect effects such as bio-magnification of heavy metals. Plants, animals and human beings survive with the interaction between them and the resources of nature. Till this ecological balance is taken care everything will go proper, but the greedy mindset of men disturbs all leading to lots of evil effects on the environment.

2. Environmental balance

Environment is the sum of all social, economical, biological, physical and chemical factors which constitute the surrounding. It is also defined as the space where we live-in. The air we breathe, the food we eat, the water we drink and other resources we need. In recent years, human are much concerned about the environment and the scientists realized the importance of the environmental balance and its effect on the life of all creatures like plants, animals and human. This has become more prominent after the huge excreted amount of pollutants in the twenty century. Many decades ago, environment was very pure and clean, only during last few years number of factories has increased and also the transportation modes have increased which produces large amount of pollutants causing various dangerous diseases. Pollution has not affected humans alone, but also the aquatic organisms and plants. Nature always supported the creators by striking balance with environmental changes. But extreme exploitation of all natural balances like deforestation, depletion of fossil fuels, increased population and production of harmful chemicals with the tag of innovation has lead to a worst imbalance in the environment.

3. Environment degradation and exploitation

Environmental degradation is one of the largest threats that the world is facing today. The United Nations International Strategy for Disaster Reduction characterizes environmental degradation as "the lessening of the limit of the earth to meet social and environmental destinations, and needs". Environmental degradation can happen in a number of ways. When environments are wrecked or common assets are exhausted, the environment is considered to be corrupted and harmed. There are a number of techniques that are being used to prevent this, including environmental resource protection and general protection efforts. Environment degradation includes destroying the environment through extinction of wildlife, depletion of natural resources, and the destruction of the eco-system. Following are the causes of environmental degradation:

Disturbance to land: The very basic cause for environmental degradation is land damage. Numerous weedy plant species rupture in the environmental surroundings and can assume control over nature, eliminating the local greenery. Whole environment can be destroyed because of these invasive species.

Pollution: Pollution in forms like air, water, land or noise is harmful to the environment. Air pollution causes health issues. Water pollution degrades the quality of water. Human activities degrade earth's surface leading to land pollution. Noise pollution can cause irreparable damage to our ears when exposed to continuous large sounds.

Over-population: Drastic increase in population strains natural resources which results in degradation of our environment. Mortality rate has gone down due to advanced medical assistances. High population created more demand for food, clothes and shelter. This has resulted in deforestation which is another factor of environmental degradation.

Garbage: Landfills pollute the environment and destroy the environment. Garbage gets dumped up due to the large amount of waste that gets generated by households, industries, factories and hospitals. It poses a great risk to the health of the environment and the people who live there.

Deforestation: Deforestation involves the cutting down the trees, burning and destroying the forest. Causes of deforestation are: increased population, cutting of trees for sale, poverty, massive development of industry and development of housing project. Through the deforestation the wildlife is reduced and the life of the birds and the animals suffer and becomes extinct.

Natural calamities: Like avalanches, earth quakes, Tsunami, storms, and wildfires can totally crush nearby life to an extent no life survives in those areas. This can either come to fruition through physical demolition as the result of a specific disaster, or by the long-term degradation of assets by the presentation of an obtrusive foreign species to the environment.

Pollutants: Pollutants are the major factors that lead to environmental degradation. Pollutants are any substance released into the environment due to natural or human activity which affects adversely the environment is called pollutant.

4. Waste as major killer of environment

Solid wastes from household usage and industry wastes like chemicals, petroleum and metal hazardous waste from gas station, all together contaminate soil and pollute water resources. Out of 420 million population in India, we produce 62 million tonnes of garbage per year and only 10 -15 per cent are recycled and others are dumped into the soils that pollute the land and causes the various health issues that reduces the human survival. It destroys the eco system and causes death of all living organism. India generates 150000 tonnes of municipal solid waste and Mumbai is considered as the 5th most wasteful city, yet 83 per cent of waste is collected and less than 30 per cent is treated. Studies have projected that, India may end up producing 377000 tonnes wastes by 2025.

5. Electronic wastes

E-wastes or electronic wastes are electronic products that have become unwanted, non-working or obsolete, and have essentially reached the end of their useful life. Because technology advances at such a high rate, many electronic devices become “trash” after a few short years of use. India is the 5th largest electronic waste producer all over the world. Electronic wastes are 40 per

cent of lead and 70 per cent of landfills. The EPA estimates as much as 60 million metric tonnes enter landfills every year. Most electronics that are improperly thrown away contains the toxic substances such as lead, zinc, nickel, flame, barium and chromium; if it is released to the environment can cause the damage to human blood, kidney as well as the nervous system causing severe damage to their life.

6. Types of e-waste

A study on best practices for e-waste management in developed countries has done an analysis on type of e-waste produced in Europe. Large household appliance constitutes the maximum to e-waste account for 27.2 per cent of the total e-waste generated in the EU. This is followed by IT and telecom excluding CRT (8 per cent), CRT 8.3 per cent, and consumer electronics excluding CRTS 7.5 per cent. This is an eye opener for all other nations to understand the type of e wastes they produce.

7. Best e-waste management practices

Developing countries have realised the need for effective e-waste management plans more than a decade before. This could probably because of the reason that their technological growth is much faster than other countries, which has lead to more green waste dump age in their place. The remarketing, reuse and recycling of Fujitsu Siemens Computers products have taken place at the company's Paderborn, Germany facility since 1988. While Fujitsu Siemens Computers believes IPR can result in more environmentally compliant products and better accountability for equipment manufacturers. Since the 1990s, Sharp, UK has launched a "Super Green Strategy" which aims at establishing an environmentally sustainable domestic and overseas manufacturing system. The initiatives look at every aspect of the manufacturing processes, from extracting natural resources to the end product and its disposal.

Social enterprises for better and sustainable, WEEE Recycling, Austria has not only advantages for the environment but also social potential. In the model of the "Social Market Economy" goods and services will be provided outside the market system. It may serve as a third economic sector between the state and the market. In Austria, several social enterprises were established in this scheme with a focus on WEE treatment. Through the boom of LCD-flat screens in the European offices a huge number of old CFT monitors get dispensable although most of them are still fully functional and not at the end of their life-cycle. There is a considerable demand of these monitors in developing countries. Freezing appliances are very environmentally relevant in the impact assessment of WEEE due to the presence of chlorofluorocarbons. In Austria, 91 per cent of the CFC from old cooling and freezing appliances are recovered, while in Germany it is only 40 per cent. The Austrian experiences show that fridge-recycling can be efficient and in terms of climate protection. At the European level, there are common standards concerning CFC-recycling

since the beginning of 2008. Matsushita Electric, best known for its Panasonic brand, set up an advanced recycling plant in the Western Japanese town of Yashiro for the recycling of 4 main home appliances, i.e. refrigerator, washing machine, television and air conditioners. The Matsushita Eco-Technology Center came into being after the Japanese Government passed tough recycling measures that came into effect in 2001. Mitsubishi Electric has developed an original mixed-plastic separation and recovery technology for its household appliance products.

8. Conclusion

Humans are the responsible for destroying the natural resources creating imbalance in the nature, threatening the survival of all living creators. To get rid of these problem environment awareness is necessary. Each and every individuals need to be educated about the consequences his/her activities in nature. Developed countries have started their countdowns in e-waste management through legislative frame work leading to effective policy making involving all stakeholders. When they have proven models for better e-waste management system, developing countries shall try to adopt best proven models with minor modifications as per individual requirements and need to implement it as soon as possible to save people and nature. It is not the individual responsibility of rulers, government, industries, NGOs or leaders; it is the collective responsibility of all to ensure sustainable growth in every aspect.

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