



Emerging Threats of The E-Waste to The Fauna and Flora in Developing Countries

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ABSTRACT

The beginning of the current decade has witnessed the acceleration of large-scale changes in the natural environment leading to the deterioration of ecosystem services. India is emerged as the world leader in electronic smart watches with an annual growth rate of 193%, we are house of 1,899,302,767 cell phones, 14 million computers (desktop, laptop, tablets, etc.), 24 million TV sets. The waste from the electronic gadgets/appliances is posing a severe threat to the people in developing and developed nations. All these devices are made up of and comprises of an array of multitude components with some valuable materials on one hand and some containing toxic substances on the other, that can have an adverse impact on health of the fauna, flora and the environment. These changes are interacting to generate public health threats that endanger the health and well-being of millions of people. There is an urgent need to improve our understanding of the dynamics of e-waste threats. It would help natural resource managers and policy makers to estimate the health impacts associated with it. The strategies to mitigate the same are also narrated.

Keywords: E-waste, Fauna, Flora, Health hazard

I. INTRODUCTION

India is emerged as *numero uno* user of electronic devices like cell phones, TV sets, Computers, smart watches. These gadgets are meant to make our lives happier and simpler. The life world-wide, without these modern gadgets is unimaginable, this is one side of the coin but its toxicity it contains, their disposal and recycling becomes a health hazard, is another. The users of these devices are unaware of the potential negative blow of rapidly increasing use of these life relaxing devices. It is estimated that about one million metric tons of e-waste is generated in India during 2021, which may increase by about 6.5% annually. Irony faced is we are lacking in the appropriate infrastructural facilities and procedures for the disposal and recycling of the e-waste making e-waste management a more complex issue in India. We are attempting to give an impetus and a brief concise overview of India's current e-waste scenario, magnitude of the problem, environmental and health hazards, current disposal, recycling operations and mechanisms for its usage and disposal aimed at creating a better environment. Generally the e-waste is generated through its recycling and dumping of it from other countries leading to a new challenge to the environment and policy makers.

Toxic materials in e-waste and its health hazards

Lead: The lead is one of the most prominent toxic metal present in the electronic gadgets and domestic appliances. It is an indispensable part of the acid batteries, which are also essential for the gadgets. Its seepage in soil, percolation in water bodies and consumption of the vegetables, food products, drinking of water results into direct impact on the central nervous system (CNS), it also causes nephrological disorders including kidney failure. It is reported that lead contamination of the food items and its consumption causes severe damage to the reproductive system of human and the farm animals.

Bromium: It is the decorative hardener used in almost all the electronic devices. It is a toxin causing the damage to the genetic material like the Deoxyribonucleic acid. It is identified as a potential cancer promoting metal, especially that of lung cancer.

Mercury: This is also a toxic metal which is an integral part of the housings, batteries and the electric switches used in the electronic devices. The contamination of the water supplies and the arable land with mercury leads to its traces in food and consumption of such food/water may cause permanent damage to the brain. It also causes damage to the central and peripheral system. On more hazardous effect is abortion of the pregnant ladies.

Cadmium: It is also used in the electronic devices like desktops, laptops, TV sets, etc. Working with scrapped e-devices leads with exposure to cadmium resulting into long term severe bone diseases and also long term cumulative poison exposure.

Plastic: The plastic materials are consistently used in mouldings of TV sets, Computers, Laptops and its cabling as an insulator. It contains dioxins and furans, which are potential toxins for human and livestock animals.

II. CONCLUSION:

Owing to its huge population, India is emerged as a leading user of the electronic communication, recreation and educational-aid devices/gadgets leading it among the global leaders, who are responsible to generate more e-waste in quantity that too in India needs an urgent approach to tackle this health hazardous issue. It is the need of an hour to make aware the general public about the strategies to handle and dispose of the scrap originating from e-appliances. The technical and policy-level interventions, implementation and capacity building is urgently addressed. Positive and effective implementation of the strategies towards focus on the public awareness can convert this challenge into an opportunity to show the world that India is ready to deal with future problems associated with the e-waste.