

## Impact of Electronic Waste on Human rights : A study on Developing Nations<sup>1</sup>

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### Abstract

During the past few decades, there have been radical changes in human lifestyle. The biggest of all changes is digital revolution which has resulted in technological addiction. Humans have embraced technology and gadgets in all their glory and have, in literal sense, become their slaves. Our spending and consuming habits of electronics and electrical equipment has resulted in an ever-increasing heap of electronic waste that we find hard to manage. The substantial production of electronic goods and its rapid disposal has become a grave concern all over the world.

The situation is much worse in developing countries. Because developing nations, like India, are confronting a dual problem. Firstly, there is a huge domestic production of electronic wastes. Secondly, illegitimate importation and dumping of an undisclosed amount of electronic waste in developing countries is also taking place from developed and industrialized countries. The major purpose behind this kind of transboundary movement of electronic wastes from developed to developing world is plenty of low-priced workforce and poor environmental policies in developing nations which permits for such disposal and dumping. Subsequently, a majority of electronic waste in such developing or under-developed countries is being managed by the large organized informal sector which does not have the adequate means or awareness to deal with E-Waste appropriately. Informal sector indulges essentially in manual dismantling where they end up using crude methods having an impact on their human right to health.

The objective of the paper, therefore, is to examine the adverse effects that hazardous activities, such as the dismantling and recycling of electrical and electronic waste, have on the enjoyment of human rights of countless individuals working in these sectors or living close to the places where these activities take place. And to establish that these informal practices result in grave violation of human right to health which has been accorded protection under various laws. The paper also analyses the best practices at global level to curb this problem. Further, the paper put forth suggestions that can be taken to fight this increasing hazard to human life.

## INTRODUCTION

*"There is no such thing as "away." When we throw something away it must go somewhere."*<sup>2</sup>

Modern life is unthinkable without information technology (IT), yet this technology is responsible for the fastest-growing waste stream globally. The issue of Electronic

<sup>1</sup> Submitted by - Nivedita Chaudhary, PhD Scholar, Indian Law Institute, New Delhi.

<sup>2</sup> Further stated "The Agbogbloshie E-waste dump in Ghana is one of those "somewhere", by Annie Leonard, who is an Executive Director of Greenpeace, USA.

waste (*hereinafter* referred as E-waste) management has become a serious concern at the global level. E-waste or electronic waste is a major waste stream these days resulting from the explosion of electronic products in the past decades due to speedy advancements in technology innovation, consumerism, economic growth, urbanization as well as obsolescence, that leads to reduced product lifecycles. Rapid economic growth and ever-increasing population have also led to a drastic increase in the amount of E-waste generated annually and is also believed to be one of the most critical waste disposal issues of the twenty-first century.<sup>3</sup> It was reported by United Nations in January, 2019 that ‘50 million tonnes’<sup>4</sup> of electronic and electrical waste (e-waste) is generated in a year globally.<sup>5</sup> The question which arises here is – Where do these millions of electronic products go when they are discarded as waste?

Moreover, e-waste management is no longer only a problem restricted to rich developed or industrialized countries. Rather, developing nations which are customarily treated as one of the dumping grounds for e-wastes produced by these rich countries<sup>6</sup>, are facing a twofold burden because of massive in-house production of e-wastes as well as illegal importation/dumping of the same from developed countries which is seen as a measure of modernization by cheap means and small economic gain. The reason behind this sort of transboundary movement of e-wastes from developed to developing world is abundance of cheap labor and deficient environmental regulations in developing countries which allows for such disposal and dumping. It is being assumed that this kind of toxic trade benefits both developed and developing nations.<sup>7</sup> But that’s not the accurate picture.

This sort of trade is often publicized as the offshoot of the free market system by the developed world. For developing world, it can never be “free trade” in the fullest

<sup>3</sup> M. Khurram and S. Bhutta, *Electronic Waste: A Growing Concern in Today's Environment*, 2011, available at: <https://www.hindawi.com/journals/ecri/2011/474230/>

<sup>4</sup> 50 million tonnes equals to 50000000000 kgs. This is deemed to be equivalent in weight to all the commercial aircraft we have ever built throughout history or 4,500 Eiffel Towers.

<sup>5</sup> UN report: Time to seize opportunity, tackle challenge of e-waste, Jan 24, 2019, available at, <https://www.unenvironment.org/news-and-stories/press-release/un-report-time-seize-opportunity-tackle-challenge-e-waste>

The report also stated that this amount of e-waste is worth over \$62.5 billion (equals to 44,58,48,43,75,000 INR). The report compared this with the GDPs of various countries and stated that it is more than the GDP of most of them. Further stated that “there is 100 times more gold in a tonne of e-waste than in a tonne of gold ore”. Also available at, <https://www.unenvironment.org/news-and-stories/press-release/un-report-time-seize-opportunity-tackle-challenge-e-waste>

<sup>6</sup> For instance, Ghana’s capital, Accra is one of the world’s largest destinations for dumping of used electronic goods, available at, <https://www.citylab.com/environment/2019/05/used-electronics-e-waste-landfill-ghana-toxic-technology/590341/>. Also see, 20 Countries that are Used as Dumping Grounds for Your Waste, available at, <https://whenonearth.net/20-countries-that-are-used-as-dumping-grounds-for-your-waste/>. See, India becoming the ‘world’s dumping ground’ for e-waste, available at, <https://www.anu.edu.au/news/all-news/india-becoming-the-%E2%80%98world%E2%80%99s-dumping-ground%E2%80%99-for-e-waste>.

<sup>7</sup> Stated one of the articles, “The bulk of used electronics shipped to the developing world are meant to give second and third lives to devices and help bridge the world’s digital divide. But the cloak of “reuse and repair” is often used to hide illegal exports of e-waste. This is ostensibly scrap, but the frenzy of hazardous e-waste activity in cities in Pakistan and Ghana, for example, testifies to the riches hidden in the piles of discarded electronics. According to researchers at U.N.U., the raw materials contained in e-waste were worth roughly \$61 billion in 2016, more than the gross domestic product of even middle-income countries like Croatia or Costa Rica”. Available at, <https://www.nytimes.com/2018/07/05/magazine/e-waste-offers-an-economic-opportunity-as-well-as-toxicity.html>

sense rather smacks of some form of oppression, predation, exploitation, or coercion. A majority of electronic waste in such developing or under-developed countries is being managed by the large organized informal sector which does not have the adequate means or awareness to deal with E-Waste appropriately. Informal sector indulges essentially in manual dismantling where they end up using crude methods having an impact on their human right to health.

The objective of the paper, therefore, is to examine the adverse effects that hazardous activities, such as the dismantling and recycling of electrical and electronic waste, have on the enjoyment of human rights of countless individuals working in these sectors or living close to the places where these activities take place. And to establish that these informal practices result in grave violation of human right to health which has been accorded protection under various laws. The paper also analyses the best practices at global level to curb this problem. Further, the paper put forth suggestions that can be taken to fight this increasing hazard to human life.

## WHAT IS ELECTRONIC WASTE?

The meaning of the term “electronic waste” can be understood in two ways – 1) through the prescribed definitions at national and international levels and; 2) looking at the basic composition of any electronic device.

### 1. Definitions

Due to the speedy advancements in technology at every single breath we take, it becomes very difficult to give a very precise definition of ‘e-waste’ as it could range from the most uncommon thing to the most common thing we use in our daily life cycle. This has resulted into various definitions within e-waste regulations, policies and guidelines all over the world. This has further resulted into a disputation at global level regarding the understanding and application of the term “e-waste”.

The term “e-waste” is an abbreviation of “electronic and electrical waste”. A key part of the definition is the word “waste” and what it logically implies – “that the item has no further use and is rejected as useless or excess to the owner in its current condition”. It denotes items such as TV appliances, computers, laptops, tablets, mobile phones, white goods - for example, fridges, washing machines, dryers - home entertainment and stereo systems, toys, toasters and kettles, etc.

The definition of e-waste that has been agreed by StEP<sup>8</sup> is:

E-Waste is a term used to cover items of all types of electrical and electronic equipment (EEE) and its parts that have been discarded by the owner as waste without the intention of re-use.

The Step definition of EEE includes both household and business items.

E-Waste (Management) Rules, 2016 defines e-waste as<sup>9</sup>:

<sup>8</sup> Solving the E-waste Problem (StEP) is a membership organization that is part of United Nations University and was created to develop solutions to address issues associated with electronic waste.

<sup>9</sup> Electronic waste (management) Rules, 2016, s. 3(1)(r).

Any electrical and electronic equipment, whole or in part discarded as waste by the consumer or bulk consumer as well as rejects from manufacturing, refurbishment and repair processes.

European Union (EU) Directives attempts to explain “waste electrical and electronic equipment” (WEEE) as<sup>10</sup>:

An electrical or electronic equipment which is a waste including all components, sub-assemblies and consumables which are part of the product at the time of discarding.

The European Union’s WEEE Directive,<sup>11</sup> classifies all electrical and electronic items as potentially being in scope, with some specific exceptions such as filament bulbs and large scale fixed installations.

As per BAN<sup>12</sup>:

E-waste includes a wide and developing range of electronic appliances ranging from large household appliances, such as refrigerators, air-conditioners, cell phones, stereo systems and consumable electronic items to computers discarded by their users.

UNEP defines ‘E-waste’ as:<sup>13</sup>

Any electrically powered appliance that fails to satisfy the current owner for its originally intended purpose.

For OECD, ‘E-waste’ is<sup>14</sup>-

Any household appliance consuming electricity that has reached its end of life is E-waste.

Lastly, it can be concluded that E-waste is an electronic appliance or an electrical equipment which has been discarded and is of no use. E-waste includes everything that uses electricity in one way or other.

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<sup>10</sup>European Union, *Directive on waste electrical and electronic equipment (WEEE)*, 2012/19/EU, EU Doc L 197/38, (2012), Art. 3(1), available at: <https://eurlex.europa.eu/legalcontent/EN/TXT/?uri=CELEX:32012L0019> (last visited on July 3, 2019).

<sup>11</sup> Directive 2012/19/EU of the European Union and of the council of date on 4 July 2012 published in issue L197 of the Official Journal on July 24, 2012. Available at, <https://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:197:0038:0071:en:PDF>

<sup>12</sup> Basel Action Network (BAN) is a charitable non-governmental organization (NGO) which serves as an unofficial watchdog and promoter of the Basel Convention and its decisions. BAN currently tackles three toxic waste streams covered by the Basel Convention: 1) Electronic waste (e-waste), the fastest growing waste stream globally; 2) End-of-life ships, like the cargo ships that carry our goods; 3) Plastic pollution. Available at,

<sup>13</sup> UNEP, Division of Technology, Industry, and Economics, Sustainable Consumption & Production Branch, *E-Waste Management*, available at: <http://www.unep.fr/scp/waste/ewm/faq.html>

<sup>14</sup> G. Gaidajis, K. Angelakoglou and D. Aktsoğlu, “E-waste: Environmental Problems and Current Management”, 3 *JESTR* 193-199 (2010), available at: <http://www.jestr.org/downloads/volume3/fulltext342010.pdf>.

## The six waste categories

This categorisation has been done by Step. This categorisation is quite exhaustive and states that e-waste covers six waste categories<sup>15</sup>:

1. Temperature exchange: Temperature exchange equipment, more commonly referred to as cooling and freezing equipment: refrigerators, freezers, air conditioners, heat pumps.
2. Screens, monitors: televisions, monitors, laptops, notebooks, and tablets
3. Lamps: fluorescent lamps, high intensity discharge lamps, and LED lamps
4. Large equipment: washing machines, clothes dryers, dish-washing machines, electric stoves, large printing machines, copying equipment, and photovoltaic panels.
5. Small equipment: vacuum cleaners, microwaves, ventilation equipment, toasters, electric kettles, electric shavers, scales, calculators, radio sets, video cameras, electrical and electronic toys, small electrical and electronic tools, small medical devices, small monitoring and control instruments
6. Small IT and telecommunication equipment: mobile phones, Global Positioning Systems (GPS), pocket calculators, routers, personal computers, printers, telephones

## 2. Composition of E-waste

The composition of e-waste is very diverse and differs in products across different categories. It contains more than 1000 different substances, which fall under 'hazardous' and 'non-hazardous' categories. Broadly, it consists of ferrous and non-ferrous metals, plastics, glass, wood and plywood, printed circuit boards (PCB), concrete and ceramics, rubber and other items. Iron and steel constitute about 50% of the E-waste followed by plastics (21%), non-ferrous metals (13%) and other constituents. Non-ferrous metals consist of metals like copper (Cu), aluminum (Al) and precious metals, e.g. silver (Ag), gold (Au), platinum, palladium, etc. The presence of elements like lead, mercury, arsenic, cadmium, selenium and hexavalent chromium and flame retardants beyond threshold quantities of e-waste classifies them as hazardous waste.<sup>16</sup>

<sup>15</sup>Available at, <http://www.step-initiative.org/e-waste-challenge.html>

<sup>16</sup>Widmer R, Oswald-Krapf H, Sinha-Khetriwal D, Schnellmann M, Böni H. Global perspectives on e-waste. *Environ Impact Assess Rev.* 2005;25(5):436–458. Available at, <https://www.sciencedirect.com/science/article/abs/pii/S0195925505000466?via%3Dihub>  
Also see, Puckett J, Byster L, Westervelt S, *Exporting Harm: The high-tech trashing of asia, the basel action network (BAN) and Silicon Valley Toxics Coalition(SVTC)*, 2002. Available at, <http://www.ban.org/E-waste/technotrashfinalcomp.pdf>

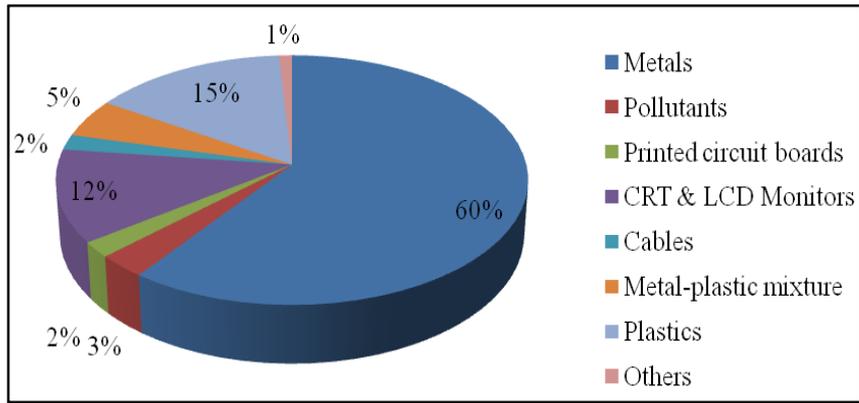


Image 1 - The basic composition of an electronic or electrical equipment<sup>17</sup>

### WHY IS IT AN ISSUE?

E-Waste is growing exponentially because global consumer demand continues to increase. It was reported in 2017 by “Global E-waste monitor”, that “in 2016 alone 44.7 million metric tonnes (Mt), or an equivalent of 6.1 kilogram per inhabitant (kg/inh), of e-waste were generated compared to the 5.8 kg/inh generated in 2014. This is close to 4,500 Eiffel Towers each year. The amount of e-waste is expected to increase to 52.2 million metric tonnes, or 6.8 kg/inh, by 2021”.<sup>18</sup>(See the image 2 below)

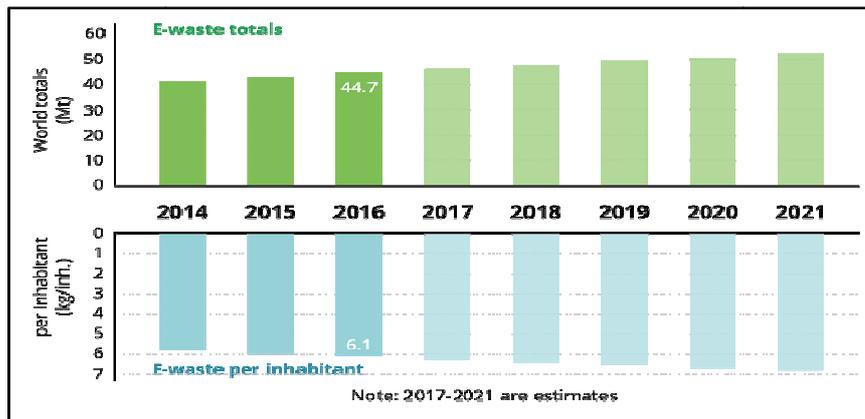


Image 2<sup>19</sup>

Moreover, technology uptake and shorter replacement cycles are contributing to the growth of e-waste. As many parts of our expanding world cross over to the other side

<sup>17</sup>F.O. Ongondo, I.D. Williams and T.J. Cherrett, *How are WEEE doing? A global review of the management of electrical and electronic wastes*, Waste Management, Volume 31, Issue 4, April 2011, available at: <https://www.sciencedirect.com/science/article/pii/S0956053X10005659>

<sup>18</sup> The Global E-waste Monitor 2017: Quantities, Flows, and Resources by United Nations University (UNU), International Telecommunication Union (ITU), and the International Solid Waste Association (ISWA), available at: [http://collections.unu.edu/eserv/UNU:6341/Global-E-waste\\_Monitor\\_2017\\_\\_electronic\\_single\\_pages\\_.pdf](http://collections.unu.edu/eserv/UNU:6341/Global-E-waste_Monitor_2017__electronic_single_pages_.pdf). This report provides the most comprehensive overview of global e-waste statistics and an unprecedented level of detail, including an overview of the magnitude of the e-waste problem in different regions. The report includes up-to-date information on the amounts of e-waste generated and recycled, makes predictions until 2021.

<sup>19</sup>*Ibid.*

of the ‘Digital Divide’, the contemporary consumer demands the means to enjoy an easier more comfortable lifestyle. But that very understandable demand creates a downstream problem of safe disposability.<sup>20</sup> As per the report, “of those 44.7 Mt only 8.9 Mt of e-waste are documented to be collected and recycled, which corresponds to 20% of all the e-waste generated”.<sup>21</sup>

Secondly, the e-waste is becoming a huge concern because of the nature of production and disposal of waste in a globalized world. It is difficult to quantify global e-waste amounts as “only 41 countries have official e-waste statistics”.<sup>22</sup> Consequently, the fate of a large majority of the e-waste (34.1 Mt) is simply unknown. But it is known that large volumes end up in places where proper recycling facilities are not yet established and rudimentary methods are used to recover valuable components. There is the high risk that the pollutants are not taken care of properly, or they are taken care of by an informal sector and recycled without properly protecting the workers, while emitting the toxins contained in e-waste.

The improper and unsafe treatment and disposal pose significant risks to the environment and health of the informal workers. They also present several challenges to sustainable development, and to the achievement of the Sustainable Development Goals (SDGs).<sup>23</sup>

It also contains complex valuable materials, such as precious metals which need to be treated properly to effectively recover them with minimal environmental impact. The U.S. Environmental Protection Agency (EPA) says, “One metric ton of circuit boards can contain 40 to 800 times the amount of gold and 30 to 40 times the amount of copper mined from one metric ton of ore in the United States.”<sup>24</sup> A recent study in China found that mining copper, gold and aluminium from ore costs 13 times more than recovering the metals through the urban mining of e-waste.<sup>25</sup>

Informal recycling can pose security risks, because while formal recyclers in the U.S. usually require wiping devices clean of data, informal recycling does not. Criminals search e-waste for credit card numbers and other financial information. For example, government contracts and lucrative agreements with the U.S. Defense Intelligence Agency, the Transportation Security Administration and Homeland Security have been found on hard drives in Agbogbloshie, an e-waste center in Ghana.<sup>26</sup>

<sup>20</sup> Available at, <http://www.step-initiative.org/e-waste-challenge.html>

<sup>21</sup> *Supra* note 18.

<sup>22</sup> *Ibid*, pg. 12.

<sup>23</sup> It will help address the SDGs related to environmental protection (Goals 6, 11, 12, and 14) and health (Goal 3). It will also address Goal 8 that focuses on employment and economic growth, since the sound management of e-waste can create new areas of employment and drive entrepreneurship.

<sup>24</sup> Cho Renee, *What Can We Do About the Growing E-waste Problem?*, State of the planet, Columbia University, August 27, 2018. Available at, <https://blogs.ei.columbia.edu/2018/08/27/growing-e-waste-problem/>

<sup>25</sup> Xianlai Zeng, John A. Mathews, and Jinhui Li. *Urban Mining of E-Waste is Becoming More Cost-Effective Than Virgin Mining*. Environmental Science & Technology, 2018 and American Chemical Society, *Pulling valuable metals from e-waste makes financial sense*, Science Daily. Available at, [www.sciencedaily.com/releases/2018/04/180404093956.html](http://www.sciencedaily.com/releases/2018/04/180404093956.html)

<sup>26</sup> *Supra* note 24.

Thirdly, developing nations, are confronting a dual problem because of huge domestic production of e-wastes as well as illegitimate importation/dumping of the same from developed and industrialized countries.

A study<sup>27</sup> done by the watchdog group Basel Action Network using trackers, however, found that 40 percent of the e-waste supposedly recycled in the U.S. was actually exported. Most of it ended up in developing countries—usually in Asia—where informal recycling is typically unlicensed and unregulated.<sup>28</sup>

Until last year, China accepted 70 percent of the world's electronic waste—discarded computers, cell phones, printers, televisions, microwaves, smoke alarms, and other electronic equipment and parts.<sup>29</sup> After China stopped accepting this e-waste out of concern for its environment, Europe and North America began shipping more of it to Southeast Asia—but now Vietnam and Thailand, whose ports have been overwhelmed, are curbing imported e-waste as well.<sup>30</sup>

However, many countries have recognised that need to properly recycle e-waste and are working on implementing sustainable solutions.

## RISKS TO HUMAN HEALTH AND ENVIRONMENT

In various developing countries like India, Nigeria, Ghana, Philippines, Bangladesh, etc many people earn a living by indulging into informal recycling practices like dismantling, refurbishing, repairing and reselling used electronic devices. The organized informal sector extract and recover valuable materials like gold and silver from E-waste with the use of the primitive tools and methods of extraction such as open burning of plastic waste, exposure to toxic solders, and acid baths. The improper and unsafe treatment and disposal pose significant risks to the environment and health of the informal workers because E-waste contains hazardous substances such as mercury, lead, chromium, copper, cadmium, PCBs, etc.

Accidental leakages and evaporation of these substances can result into escape of salvageable materials into the soil, polluting big areas of lands and making them unhealthy for farming.<sup>31</sup> Moreover, metals such as mercury, cadmium and lead, which are usually discovered in device circuit boards, may percolate into groundwater, triggering devastating health issues.<sup>32</sup> Health problems have been reported in the last few years, including diseases and problems related to the skin, stomach, respiratory tract and other organs. Workers suffer high incidences of birth defects, infant

<sup>27</sup> Basel Action Network (BAN) Report, *Scam Recycling: E-Dumping on Asia by US Recyclers*, September 15, 2016, available at, <http://wiki.ban.org/images/1/12/ScamRecyclingReport-web.pdf>

<sup>28</sup> *Supra* note 24.

<sup>29</sup> A documentary has been made by CNN on the informal recycling of electronic waste in Guiyu, China. Available at, <https://www.youtube.com/watch?v=O-ubuFhqQA>

<sup>30</sup> *Supra* note 24.

<sup>31</sup> Kurian Joseph, “Electronic Waste Management in India—Issues and Strategies”, Proceedings of the Eleventh International Waste Management and Landfill Symposium, Italy (October 2007), available at:

<http://www.swlf.ait.ac.th/UpdData/International/NRIs/Electronic%20waste%20management%20in%20India.pdf>

<sup>32</sup> V Ranganathan, *The Electronic Menace: Why E-waste is a Major Concern Today*, Entrepreneur, December, 2018), available at: <https://www.entrepreneur.com/article/324789>

mortality, tuberculosis, blood diseases, anomalies in the immune system, malfunctioning of the kidneys and respiratory system, lung cancer, underdevelopment of the brain in children and damage to the nervous and blood systems.<sup>33</sup>

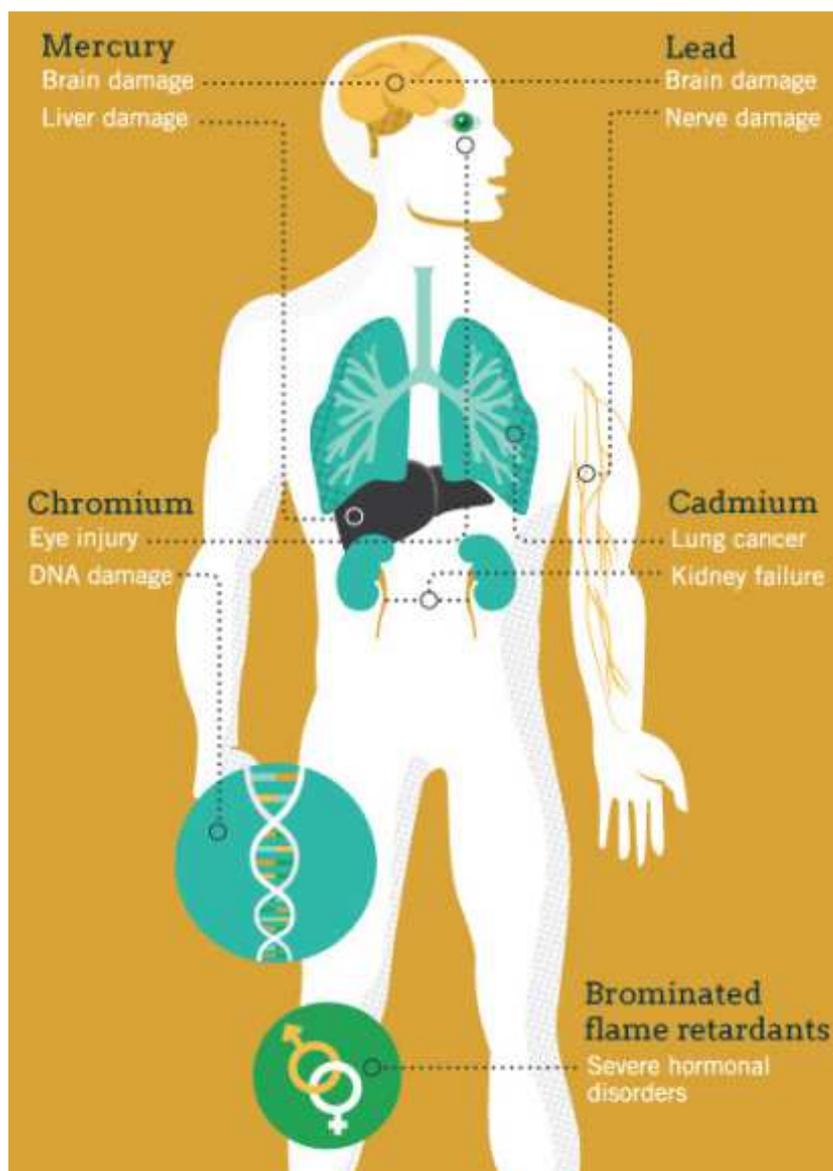


Image 3 : Illustrating the impact of electronic waste on human health<sup>34</sup>

### Worker's Exposure in developing countries

The E-waste recycling sector in developing countries is largely unregulated and the process of recovering valuable materials takes place in small workshops using simple

<sup>33</sup> Y. Sitaramaiah and M. Kusuma Kumari, *Impact of Electronic Waste leading to Environmental Pollution*, Journal of Chemical and Pharmaceutical Sciences (JCPS), October 3, 2014, available at, <https://www.jchps.com/specialissues/Special%20issue3/03%20jchps%20si3%20Y.Sitaramaiah%2039-42.pdf>

<sup>34</sup> This image by 'Green Era Recyclers' shows that the direct disposing and burning of E waste in open areas affects human and environment adversely. 'Green era recyclers' are electrical and electronic waste (e waste) recyclers turned up in Coimbatore. Available at, <https://thegreenera.wordpress.com/>

and crude recycling methods. Author has put forth various case studies below which shows the impact of electronic waste on the health of the workers on informal sector.

### Reported Study 1

#### **“The Price of Recycling Old Laptops: Toxic Fumes in Thailand’s Lungs”<sup>35</sup>**

This was reported through New York Times in December, 2019. The news report stated that the e-waste industry is booming in Southeast Asia and despite a ban on imports, Thailand is a center of the business.

Few extracts from the news report -

*“.....the women picked through the discarded innards of the modern world: batteries, circuit boards and bundles of wires. They broke down the scrap — known as e-waste — with hammers and raw hands...”*

*“.....if some types of electronic waste aren’t incinerated at a high enough temperature, dioxins, which can cause cancer and developmental problems, infiltrate the food supply. Without proper safeguarding, toxic heavy metals seep into the soil and groundwater...”*

*“...The man showed burns on his arms from his work but said he had no idea what liquid had caused his wounds...”*

### Reported Study 2

#### **Electronic Marvels Turn Into Dangerous Trash in East Africa<sup>36</sup>**

This was reported through the New York Times in May 2019 that in recent years Tanzania has enjoyed increasing wealth and prosperity, but also an increase of electronic waste, which is often improperly disposed of.

Few excerpts from the news report –

*“.....In Dar es Salaam, laborers collect heavy lead acid batteries used in cars, power backup systems and rooftop solar systems and frequently break them open with machetes and drain the acid into the ground by hand....”*

*“.....The process pollutes the soil and water with lead, which can lead to brain damage and other health problems....”*

<sup>35</sup> Hannah Beech and RynJirenuwat, *The Price of Recycling Old Laptops: Toxic Fumes in Thailand’s Lungs*, New York Times, December 8, 2019, available at, <https://www.nytimes.com/2019/12/08/world/asia/e-waste-thailand-southeast-asia.html>

<sup>36</sup> Amy Yee, *Electronic Marvels Turn Into Dangerous Trash in East Africa*, New York Times, May 12, 2019, available at, <https://www.nytimes.com/2019/05/12/climate/electronic-marvels-turn-into-dangerous-trash-in-east-africa.html?action=click&module=RelatedLinks&pgtype=Article>

### **Reported Study 3** **India's Two-million-tonne E-waste Problem has Deadly Consequences<sup>37</sup>**

This was reported by Quartz India in Feb 2019, that India India generates more than two million tonnes of e-waste annually, and also imports undisclosed amounts of e-waste from other countries from around the world. The report further stated the devastating effects e-waste recycling has on workers' health and the environment.

Few extracts of the report –

*“.....workers using crude methods to extract reusable components and precious metals such as copper, tin, silver, gold, titanium and palladium. The process involves acid burning and open incineration, creating toxic gases with severe health and environmental consequences...”*

*“.....workers were dismantling these products without proper tools, gloves, face masks or suitable footwear....”*

*“.....respiratory problems are reportedly common among those working in these filthy smoke-filled conditions....”*

### **Reported Study 4**

#### **The Toxic Effects of Electronic Waste in Accra, Ghana<sup>38</sup>**

This was reported by Citylab on May 2019, that Accra is one of the world's largest destination for toxic E-waste and sorting through them is a livelihood for many which poses serious health risks too.

Few extracts from the news report -

*“...burns, back problems, and infected wounds are common ailments among these workers, as well as respiratory problems, chronic nausea, and debilitating headaches—brought on by the hazardous working environment and toxic air pollution...”*

*“...there are skin diseases and ailments, but the worst problem here is respiratory illnesses, because the amount of pollution here is so high...”*

These reported studies clearly shows the impact of electronic waste on the informal sector workers and also highlights the crude methods that are being used by these workers. Subsequently, it results into violation of their human right to health.

<sup>37</sup> Miles Park, *India's two-million-tonne e-waste problem has deadly consequences*, Quartz India, February 19, 2019, available at, <https://qz.com/india/1553483/indias-two-million-tonne-e-waste-problem-has-deadly-consequences/>

<sup>38</sup> Peter Yeung, *The Toxic Effects of Electronic Waste in Accra, Ghana*, Citylab, May 29, 2019, available at, <https://www.citylab.com/environment/2019/05/used-electronics-e-waste-landfill-ghana-toxic-technology/590341/>

## LAW AT INTERNATIONAL AND NATIONAL LEVEL

Health is the most important factor in national development. It is a condition of a person's physical and mental state and signifies freedom from any disease or pain. Right to health is a vital right without which none can exercise one's basic human rights. The author has tried to paint a picture of the current situation in developing nations like India of the workers of informal sector who are involved in the business of electronic waste recycling. As has been stated earlier also that India's 95% electronic waste is processed widely by the huge network of informal workers. They are often referred to as "kabadiwalas" or "raddiwalas" who collect, dismantle and recycle it and operate illegally outside of any regulated or formal organisational system.<sup>39</sup> There are various laws at present which deal with "right to health" at both national and international platform. The question which arises here is, whether informal workers are being covered under these laws or not?

### International Level

Under international law, there is a right not merely to health care but to the much broader concept of health. The first notion of a right to health under international law is found in the Universal Declaration of Human Rights (UDHR), 1948 which was unanimously proclaimed by the UN General Assembly as a common standard for all humanity.<sup>40</sup> The Declaration sets forth the right to a "standard of living adequate for the health and well-being of himself and his family, including . . . medical care and . . . the right to security in the event of . . . sickness, disability . . . or other lack of livelihood in circumstances beyond his control."<sup>41</sup>

International Convention on Economic, Social and Cultural Rights (ICESCR), 1966 also talks about "right to health" and ensures that "Everyone has the right...to the enjoyment of the highest attainable standard of physical and mental health".<sup>42</sup>

The widely acceptable definition of health has been given by the World Health Organisation (WHO) of United Nations in the preamble of its constitution, according to WHO, "Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease".<sup>43</sup>

Current trends suggest that "the enjoyment of the highest attainable standard of health" which WHO describes as "one of the fundamental rights of every human being" is seen almost as a by-product, something that will trickle down to the bottom sometime in the future. There is a long way to trickle before this fundamental right reaches those who are destitute, those who survive precariously in the informal sector,

<sup>39</sup> *Supra* note 36.

<sup>40</sup> Universal Declaration of Human Rights. United Nations General Assembly Resolution 217 A (III). New York, NY: United Nations; 1948.

<sup>41</sup> See article 25 of UDHR.

<sup>42</sup> Article 12 of International Convention on Economic, Social and Cultural Rights.

<sup>43</sup> Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19–22 June 1946; signed on 22 July 1947 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100); and entered into force on 7 April 1948

or those whose access to health care is limited by their age or their disabilities, or by armed conflict.<sup>44</sup>

## Domestic Level

### *Constitutional Provisions*

The Preamble to the Constitution highlights some of the core values and principles that guide the Constitution of India. The Preamble directs the state to initiate measures to establish justice, equality, ensure dignity, etc. which have a direct bearing on people's health.<sup>45</sup> When right to healthcare is seen within the constitutional framework it is clear that the constitution of India does not provide for right to health in any way. Right to health has been evident in India through the various case laws decided by the Indian judiciary from time to time. Human rights in the Indian Constitution are divided into two separate parts. Part III of the constitution houses the 'Fundamental Rights', which in conventional human rights language may be termed as civil and political rights. Part IV of the constitution contains the Directive Principles of State Policy (DPSPs), which include all the social, economic and cultural rights. At the time of formation of the Indian constitution right to health was placed under the directive principles of state policy because direct enforcement of the right to health was found difficult by the makers of the constitution.

### **A) Right to Health under Directive Principles of State Policies(DPSP)**

Part IV of the Indian Constitution deals with certain principles known as Directive Principles of State Policy. Although the Directive Principles are asserted to be "fundamental in the governance of the country", they are not legally enforceable. They are guidelines for creating a social order. These principles are fundamental in the governance of the country and the State is under the duty to apply these principles while exercising its law making power. The following directives are of relevance perspective of Right to Health.

#### **1. Article 39: Certain principles of policy to be followed by the State:**

This Article secures health and strength of the workers, men and women. It also mandates that children be given the opportunities and facilities to develop in a healthy manner and in condition of freedom and dignity and that childhood and youth are protected against exploitation and against moral and material abandonment. It enunciates that the working class is important in nation building and therefore state government shall provide protection to their health.

<sup>44</sup> Deborah Eade, preface to *Development for Health: Selected articles from Development in Practice*, Oxford, UK: Oxfam (UK and Ireland, 1997), 4-5

<sup>45</sup> N. B. Sarojini & others, *Women's Right to Health*, National Human Rights Commission, New Delhi, 2006, p.85.

## **2. Article 42: Provision for just and humane conditions of work and maternity relief:**

This Article necessitates that the State shall make provision for securing just and humane conditions of work and maternity relief. The gist of Article 42 is that it stands as the basis of the body of labour law and welfare of the workers.

## **3. Article 47: Duty of the State to raise the level of nutrition and the standard of living and to improve public health:**

Article 47 enumerates that the State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties and, in particular, the State shall endeavour to bring about prohibition of the consumption except for medical purposes of intoxicating drinks and of drugs which are injurious to health.

### **B) Right to Health under Fundamental Rights**

The Constitution of India has not included right to health i.e. right to enjoy the highest attainable standard of physical and mental health under a specific provision. But it is the Indian judiciary who treat right to health as an integral part of right to life which is fundamental for all human beings under Article 21 of the Constitution. The Supreme Court has given recognition to right to health vide different techniques of interpretation. "The government is under Constitutional obligation to provide health facilities."<sup>46</sup> Right to health is also one of the rights, which is implied under right to life and personal liberty as guaranteed by the Constitution of India.

#### **1. Article 21: Protection of Life and Personal Liberty:**

The multi-dimensional view of Article 21 is an important development in Indian Constitutional jurisprudence. The right to health as extended under Article 21 relates with maintenance and improvement of public health, improvement of the environment etc. The Supreme Court in *C.E.R.C. v. Union of India*,<sup>47</sup> held that right to health, medical aid to protect the health and vigour of a worker while in service or post-retirement is a fundamental right under Article 21.

### **Landmark Judgments**

In the famous case of *People's Union for Democratic Rights v. Union of India*,<sup>48</sup> the SC held that:

the Central Government is, therefore, bound to ensure the observance of various social welfare, and labour laws enacted by Parliament for the purpose of securing to the workmen alike of basic human dignity in compliance with the Directive Principles of State Policy.

The Supreme Court also issued various directions to the State and Central Governments and some of the important directions concerning health of the workers.

<sup>46</sup>*State of Punjab v. Mahinder Singh Chawla*, AIR 1997 SC 1225.

<sup>47</sup> AIR 1995 SC 922.

<sup>48</sup> AIR 1982 SC 1473, (1982) 3 SCC 235.

In *Rajangam, Secretary, Dist. Beedi Worker's Union v. State of Tamil Nadu*,<sup>49</sup> the issue concerning conditions of work of employees in Beedi manufacturing and allied industries was raised. A large number of children were employed in this work. The Supreme Court observed that:

tobacco manufacturing is indeed health hazardous. Child labour in this trade should therefore be prohibited as far as possible and employment of child labour should be stopped either immediately or in a phased manner to be decided by the State Governments.

In *Bandhua Mukti Morcha v. Union of India*,<sup>50</sup> it was also contended that “the employment of children in any industry or in a hazardous industry violated Article 24 of the Constitution of India”.<sup>51</sup>

The Court further held that:

the imperatives of Directive Principles of State Policy, read with the Preamble, Article 21, 23<sup>52</sup> and 24 of the Constitution enjoins upon the State to ensure socio-economic justice to the child and their empowerment, full growth of their personality— socially, educationally and culturally— with a right to leisure and opportunity for development of the spirit of reform, inquiry, humanism and scientific temper to improve excellence- individually and collectively.

In another case of *Mangesh Salodkar v. Monsanto Chemicals of India Ltd.*<sup>53</sup> the issue concerning the conditions of work at the plants run by the company Monsanto Ltd was discussed. The company manufactured pesticides and it was alleged that a particular worker suffered from brain haemorrhage because of the work environment. The court held that the workers had a fundamental right to health at their work place. The above judgments are the extended view of Article 21 through which Supreme Court held that “Right to Health” is one of the fundamental rights. It is the liberal interpretation of the Article 21 that “Right to Life” means something more than mere survival and mere existence. The judgments mentioned above includes workers well within the interpretation of its “right to health” but none of the judgments or even constitutional provisions talks about workers belonging to informal sector.

### **Occupational Health Legislation in India**

There are presently 16 laws related to working hours, conditions at work and employment. There are two acts containing the main provisions for legal measures for the protection of health and safety of workers; they are the Factories Act (1948) and the Mines Act (1952).

### **Occupational Health Institutions**

The National Institute of Occupational Health (NIOH) was established in 1970 at Ahmedabad, Gujarat, as a WHO collaborative and reference centre for occupational health,

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<sup>49</sup> 1993 AIR (SC) 401.

<sup>50</sup> 1997 RD-SC 208.

<sup>51</sup> Article 24 of the constitution of India says that no child below the age of fourteen years shall be employed to work in any factory or mine or engaged in any other hazardous employment.

<sup>52</sup> Article 21 and 23 of the constitution of India are about traffic in human beings and beggar and other similar forms of forced labour are prohibited and any contravention of this provision shall be an offence punishable in accordance with law.

<sup>53</sup> Writ Petition No. 2820 of 2003 decided by the Bombay High Court on 13th July, 2006.

and it works closely with the Ministries of Labour, Health and Family Welfare, Environment and Forests, Agriculture etc.<sup>54</sup> Some thrust areas of the Institute are: occupational and environmental epidemiology, toxicology, environmental pollution, women's health, agricultural health and human resource development.<sup>55</sup> Two Regional Occupational Health Centres (ROHCs) have been set up in Bangalore and Calcutta.

The National Safety Council of India (NSCI) was established to promote safety consciousness among workers to prevent accidents, minimise dangers and risks and arrange related education and awareness programmes. Other public institutes include the Central Labour Institute (and its associated institutes) and the All India Institute of Hygiene and Public Health. The Indian Association of Occupational Health (IAOH) is an association of over 3000 members comprising health professionals, industrial hygienists, safety professionals, social workers and others.<sup>56</sup>

### **National Policy on Occupational Health**

The Ministry of Labour and Employment, Government of India, approved the national policy on safety, health and environment at workplaces in February 2009.<sup>57</sup>

Though legislation is in place for ensuring adequate delivery of occupational health and safety services, with supporting national programmes, policies and institutions, still there are many lacunae which impose challenges for attaining the aims and objectives. The concept of occupational health nursing is new to India. It is non-existent in unorganised and informal sectors. Even the public sector and private employers have not yet realized its importance. There is a need to create awareness about this issue amongst all stakeholders.

### **Challenges**

The lacunae in Occupational Health system in India can be highlighted as follows:

1. A very large proportion of the workforce is in the unorganised sector (more than 90% v. less than 10% in the organised sector). The occupational health management system, implementation and beneficiaries are limited largely to the organised sector, even today, after years of advancements in every field.
2. Though legislation exists to protect workers, ineffective and incomplete implementation of this legislation is a major constraint.
3. India is a densely populated nation with a high unemployment level; as such, there is ready availability of labour at lower wages. In such situations, health and safety at the workplace is often compromised.
4. There is a lack of awareness about occupational health issues among all stakeholders.
5. Poverty is an additional risk factor with low-income youths more likely to work in high-risk occupations such as agriculture, mining and construction.
6. Child labour, though legally committed, leads to poverty-related health problems.

<sup>54</sup>D'Souza R. Occupational health in India. *Health Action*. July 2017; 30(7): 6.

<sup>55</sup>Saha, R.K., *Occupational Health in India*. Annals of Global Health, 84(3), 2018, pp. 330–333, available at, <http://doi.org/10.29024/aogh.2302>

<sup>56</sup>*Ibid.*

<sup>57</sup> National Policy on Safety, Health and Environment at Workplace, Ministry of Labour and Employment, Government of India (2009), available at, [http://www.ilo.org/asia/WCMS\\_182422/lang-en/index.htm](http://www.ilo.org/asia/WCMS_182422/lang-en/index.htm).

## **Conclusion : A problem requiring multiple solutions**

The issue of Electronic waste management has become a serious concern at the global level especially for the developing nations. The whole world is being flooded by the enormous and never ending growth of electronic waste. The situation is much worse in the developing nations for they themselves are producing so much of electronic waste and also importing electronic waste from the developed countries for economic reasons and several other reasons. This enormous amount of e-waste is being managed by the informal sectors wherein workers are using crude and primitive methods of recycling. This in turn is affecting the health of the workers and has an adverse effect on the environment as well. Also, the developing countries have a weak legislative machinery to deal with this dual problem of e-waste management and protection of human right to health of these workers. Therefore, this problem needs immediate attention and only one solution would not be enough. For instance, recycling alone will not be enough as E-waste is not pollution, nor is it waste - it's a vital resource we are only just starting to value in full. Entrepreneurs, investors, academics, business and labour leaders and lawmakers will all be needed to make the circular economy work.

It is about changing the direction of the prevailing linear 'take, make and dispose' model as a first step towards the circular economy we want to see in the future. A circular electronics system is one in which resources are not extracted, used and wasted, but re-used in countless ways.

Secondly, the formalization of the informal e-waste recycling sector into a transparent system is crucial in order to control its environmental and human health impacts. At the same time, the formalization process should take into account the informal sector's extensive reach and protect related employment. Intervention and economic support to transform and integrate the informal e-waste sector into the formal sector can present a way forward and create sustainable employment. Further, the informal sector should be integrated into waste management planning, building on its practices and experience, while working to improve methods and the living and working conditions of those involved.

Thirdly, the best method to improve recycling practices is to offer incentives to these informal workers who comply with environmental and health norms.

A multi-level approach is therefore required to develop a way forward to their inclusion in the formal recycling market.

Here are some other ideas and solutions that are being researched, considered or practiced around the world :

- a) Designing better products
- b) Repair/Recycle/Re-use of products
- c) Extended Producer Responsibility
- d) The goal of a circular economy

### **Recommendations:**

The following are the main present and future needs in occupational health in India:

1. Existing occupational health related legislation and facilities need to be expanded and extended to workers in the unorganised sector with immediate implementation and periodic review for improvement.
2. Further development of institutions and infrastructure of occupational health, with simultaneous training of professionals in the field.
3. Spreading awareness of occupational health related issues among all stakeholders such as employers, employees, lawmakers, workers' organisations (e.g. trade unions), non-governmental organisations (NGOs) and the general public.
4. There is a need to increase awareness about the concept of occupational health nursing among all stakeholders along with recruitment of adequately trained occupational health nurses for implementing basic occupational health services.
5. Basic issues which are barriers to economic development as well as implementation of occupational health policy like dense population, unemployment, poverty, illiteracy, ignorance and unskilled manpower need to be addressed urgently.