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**E-WASTE: AN EXAMPLE OF HOW COORDINATED EFFORT IS NEEDED  
TO ADDRESS HUMAN RIGHTS ABUSES**

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***Introduction***

The Human Rights Council has acknowledged that there is a nexus between environmental degradation and the inability to achieve the full enjoyment of human rights. First, the Council appointed a Special Rapporteur to monitor and respond to complaints of potential human rights abuses stemming from toxic waste.<sup>1</sup> Second, the Council appointed an Independent Expert to study the obligation of States relating to human rights and the environment.<sup>2</sup> Taken together, though, these mandates leave a gap in coverage. While the Special Rapporteur may monitor how toxic waste *directly* threatens human rights, the Independent Expert may only study the interrelation between member State obligations and their practices. These mandates barely deal with the long-term effects stemming from unsustainable development practices that harm the environment and, in turn, erode the full enjoyment of human rights. Thus, when considering the United Nations Millennium Development Goal to support and ensure sustainable development<sup>3</sup> and the pervasiveness of degrading environmental policies that jeopardize the enjoyment of human rights, the Independent Expert's mandate must be strengthened.

There is a need for expanding the mandate of the Independent Expert. An immediate consequence of this action would be to give complimentary jurisdiction to the human rights and the environment mandate holder and the Special Rapporteur on hazardous waste over issues like electronic waste ("e-waste"). Such cross over is not unheard of and keeps in line with other issues that have multiple mandate holders that are implicated.<sup>4</sup> This should not be meant to undercut the

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<sup>1</sup> Resolution 18/11, adopted by the Human Rights Council, U.N. Doc. A/HRC/RES/18/11 (October 13, 2011). 18/11 was a continuation of the mandate of the Special Rapporteur, which has been in existence since 1995.

<sup>2</sup> Resolution 19/10, adopted by the Human Rights Council, U.N. Doc. A/HRC/RES/19/10 (April 19, 2012).

<sup>3</sup> The United Nations has enumerated eight "Millennium Development Goals" as a development blueprint that has been agreed upon by all of the world's countries. The seventh enumerated goal is to "ensure environmental sustainability." U.N. Millennium Development Goals, at <http://www.un.org/millenniumgoals/>.

<sup>4</sup> Using toxic waste as an example, the Special Rapporteur's jurisdiction over toxic

mandate of the Special Rapporteur on hazardous waste. Rather, mandate of the Special Rapporteur on hazardous waste should, at the next renewal cycle, be reaffirmed to ensure that toxic waste does not threaten the enjoyment of human rights. By focusing on the potential dangers associated with the narrower issue of e-waste, this report seeks to demonstrate that an equal set of tools is necessary to deal with *all* issues relating to the full enjoyment of human rights and global environmental practices. And, in doing so, there is a need to focus on both direct threats to human rights (which would fall under the mandate of the existing Special Rapporteur on hazardous waste) and indirect, long-term threats to the enjoyment of human rights stemming from unsustainable development practices that harm the environment (which should fall under the mandate on human rights and the environment).

Because of the wide scope of the issue, the mandate of the Independent Expert on human rights and environment may overlap with the mission of other mandate holders, i.e. the rights to health, food and water. In this context, the issue of e-waste is being used as just one example of areas of overlap. But the severity of the issue, and complicated nature of the problem of e-waste proves the need to strengthen the mandate of the Independent Expert so that *all* human rights consequences resulting from the phenomenon are adequately addressed. The direct, indirect and long-term effects stemming from e-waste can only be fully addressed if the human rights and the environment mandate is strengthened, and the Special Rapporteur's mandate is renewed, at the next cycle.

Simply, the overlapping of mandates should not be the basis for limiting the effectiveness or undermining the mechanisms available to either mandate holder. In fact, that the mandate of the

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waste is necessary, but is not singular. Other mandate holders are directly implicated by the issue of toxic waste, including but not limited to, the Special Rapporteur on access to safe drinking water and sanitation and the Special Rapporteur on the right to health.

Independent Expert may touch on issues that are within the jurisdiction of other mandate holders should never be the basis for the conclusion that one mandate or the other should be removed, or weakened. Rather, that there is such cross over exemplifies the complex and interrelated nature of environmental issues. This should prompt recognition by the Council that oversight from multiple mandate holders is necessary to ensure that human rights abuses do not go unpunished. And, where jurisdiction is conferred to more than one mandate holder on environmental issues, there is increasing hope that they can work concertedly toward achieving their missions, respectively.

The success of the Minamata Convention on Mercury points to the potential for a harmonious relationship between both mandate-holders implicated by the issue of e-waste—the Independent Expert on human rights and the environment and the Special Rapporteur on hazardous waste. Upon the signing of the world’s first global treaty to control mercury, both mandate holders came together to applaud the success of the international community for taking action on such an important issue.

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Hence, greater concerted action on the part of both mandate holders would strengthen the efforts against the acceleration of e-waste and its resulting harmful effects on human rights—direct, indirect and long-term.

### **I. Defining E-Waste and the Causal Link to Human Rights**

E-waste is generated when consumers discard electronic equipment or parts. The Special Rapporteur on hazardous waste has previously defined the term as one that is generally used “to describe obsolete, broken or discarded appliances using electricity, such as computers, mobile

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<sup>5</sup> Minamata Convention on Mercury: UN Experts Call for a Global Response to a Global Scourge, Oct. 11, 2013, at <http://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=13850&LangID=E>.

phones and household appliances.”<sup>6</sup> Unsustainable disposal procedures and techniques of these products raise environmental concerns because many electronic devices and equipment contain “a witches’ brew of toxic substances.”<sup>7</sup> As a result, handlers’ of electronic equipment are exposed to first-hand dangers of toxic substances. But, second-hand, indirect and long-term effects of e-waste generates through a causal link by the release of toxic materials in the environment, which can lead to air pollution, contamination of natural resources and, in turn, affect the human rights of whole populations and communities.

## **II. Why E-Waste Is of Special Concern**

E-waste poses a set of unique risks to the enjoyment of human rights, making it necessary to strengthen current monitoring tools to ensure accountability for potential human rights abuses. First, e-waste poses significant health risks to vulnerable segments of populations, namely women and children. And, the full range of health effects from e-waste processing has yet to be entirely unearthed. In addition to its direct impacts, generation and processing of e-waste lead to indirect and long-term effects on human rights, including but not limited to, the right to health, food and water. Second, unlike some other harmful environmental practices, hazardous e-waste processing is expected to increase exponentially. Third, the power disparity between countries receiving e-waste and the entities that export ensures inadequate compensation for the full-range of risks associated with processing. The pernicious nature of the problem of e-waste is due to the amalgamation of these factors.

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<sup>6</sup> Report of the Special Rapporteur on the Adverse Effects of the Movement and Dumping of Toxic and Dangerous Products and Wastes on the Enjoyment of Human Rights, U.N. Doc. A/HRC/15/22/Add.3 (September 2, 2010).

<sup>7</sup> Toxic materials that can be found in electronic devices include, but are not limited to, lead, cadmium, mercury, hexavalent chromium, poly-vinyl-chloride, brominated flame-retardants, beryllium, and phosphor. *See* Jim Puckett et al., *Exporting Harm: the High-Tech Trashing of Asia*, Basel Action Network (2002), at <http://www.ban.org/E-Waste/technotrashfinalcomp.pdf>.

### **A. The Direct and Indirect Implications of E-Waste on Whole Communities' Enjoyment of Human Rights, Especially Vulnerable Groups**

E-waste dumping sites in Agbobloshie, Ghana have been identified as posing the highest toxic threat to human life.<sup>8</sup> Agbobloshie imports 40,000 tons of e-waste from developed countries annually.<sup>9</sup> Due to inadequate waste processing mechanisms and wanting to strip goods for metals, many citizens flock to the city's scrapyards to burn the waste.<sup>10</sup> The Workers at these scrapyards that participate in burning e-waste have been found to be predominately younger men, with one study assessing that 75% of workers were between the ages of 15-29.<sup>11</sup> And, surveys of hospital records in the wake of the boom of e-waste processing in Agbobloshie have revealed that incidences of Acute Respiratory Infection have dramatically increased, by 100%, indicating a correlation between the health condition and the city's e-waste economy.<sup>12</sup>

The detrimental side effects of e-waste are not limited to affecting only those who come in direct contact with the materials. The toxicity of the practice has been documented to have indirect and long-term health consequences, implicating the right to health. And, the resulting health consequences have been shown to affect vulnerable population segments. In Agbobloshie, the e-waste industry has exposed the city's population to polychlorinated biphenyls, a chemical now banned in the United States, contaminating breast milk at unexpectedly high amounts, effecting mothers and their new born children.<sup>13</sup> Lead, the most widely used heavy metal in electronic

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<sup>8</sup> *Id.*

<sup>9</sup> Chris Stein, Inside Ghana's Electronic Wasteland, Al Jazeera English, Nov. 2, 2013, at <http://www.aljazeera.com/indepth/features/2013/10/inside-ghana-electronic-wasteland-2013103012852580288.html>.

<sup>10</sup> *Id.*

<sup>11</sup> This study also claims that a large number of boys as young as 11 engage in burning activities after school hours and on weekends. *See* Ebenezer Forkuo Amankwaa, Livelihoods in Risk: Exploring Health and Environmental Implications of E-Waste Recycling as a Livelihood Strategy in Ghana, 51 *Journal of Modern Africa* 551, 559 (2013).

<sup>12</sup> *Id.* at 569.

<sup>13</sup> Kwadwo Ansong Asante, et al., Human Exposure to PCBs, PBDEs and HBCDs in

devices, is especially hazardous to children.<sup>14</sup> Lead exposure has reached soaring levels as a result of e-waste processing.<sup>15</sup> Because children are “particularly vulnerable to lead poisoning – more so than adults because they absorb more lead from the environment and their nervous system and blood get affected” increased exposure is especially dangerous to this group.<sup>16</sup>

In addition to affecting the right to health, e-waste has been found to implicate the right to food. A study of rice harvest grains from an e-waste dismantling town in East China has revealed that rice farms in e-waste recycling areas “indicate[] chronic exposure of [cadmium] in local rice might cause serious health consequences.”<sup>17</sup> The source of these health consequences is not direct exposure, rather, through ingestion of the local food supply that are being contaminated by toxic substances directly linked to e-waste dismantling. Hence, “long-term heavy metals pollution and related health problems [are] of continuous concern in e-waste dismantling areas due to their persistent and high toxicity.”<sup>18</sup> Such pervasive indirect exposure to toxic waste in rice is especially troubling considering the heavy use of the grain in Chinese diet.<sup>19</sup> The Chinese government’s efforts to regulate e-waste dismantling proved to have some success, though, as documented in this study, lowering the amount of lead exposure in rice grain samples, but not cadmium.<sup>20</sup>

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Ghana: Temporal Variation, Sources of Exposure and Estimation of Daily Intake by Infants, 37 *Environment International* 921 (2011).

<sup>14</sup> Jugal Kishore Monika, E-Waste Management: As a Challenge to Public Health in India, 35 *Indian Journal of Community Medicine* 382 (2010).

<sup>15</sup> *Id.*

<sup>16</sup> *Id.*

<sup>17</sup> The site of the study where the report was focused has seen an exponential increase in e-waste processing. Total recycling of e-waste in the region increased from 1.69 million tons in 2005 to 2.63 million tons in 2009. While increased government regulation has been focused to curb the direct and secondary affects of e-waste processing, increased reliance on e-waste processing as a source of income places surrounding populations in jeopardy of over exposure to toxic chemicals. *See Jianjie Fu, et al., Influence of E-Waste Dismantling and Its Regulations: Temporal Trend, Spatial Distribution of Heavy Metals in Rice Grains, and Its Potential Risks*, 47 *Environmental Science & Technology* 7437, 7443 (2013).

<sup>18</sup> *Id.*

<sup>19</sup> Rice is the main food and staple crop in the region. *Id.* at 7438.

<sup>20</sup> *Id.*

The indirect nature of the contamination of rice grains in Eastern China that has been revealed by this study is of particular concern because it points to the extensive, all-encompassing nature of the problem. Rice grains in e-waste dismantling areas are contaminated in two distinct ways—through root uptake and atmospheric deposition.<sup>21</sup> Paddy soils have become contaminated, and in turn, have contaminated rice grains, which absorb the toxics from the ground.<sup>22</sup> And, rice hulls fed to livestock have absorbed toxic dust particles worrying scientists that the animals which consume the grain may be exposed to potential adverse health consequences, which may in turn lead to exposing humans that consume contaminated livestock to health problems too.<sup>23</sup>

In Southeast China, extensive studies of a region within the Guangdong Province referred to as the Guiyu have led to similar revelations about human rights abuses.<sup>24</sup> The situation in Guiyu reveals the extent that e-waste implicates the right to water. Guiyu is comprised of four small villages that lie along the Lianjian River (the Huamei, Longgang Xianpeng and Beilin villages).<sup>25</sup> The region has been transformed since China became a hub for e-waste, from primarily a rural rice-growing community to a specialized e-waste processing centre with hundreds of small shelters and yards.<sup>26</sup> The industry now employs 100,000 migrant workers to break apart and process obsolete electronic devices, namely computers shipped from North America.<sup>27</sup> Since the transformation of its economy, the Guiyu region's water supply has suffered. Due to groundwater pollution, the Guiyu

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<sup>21</sup> *Id.* at 7440.

<sup>22</sup> *Id.*

<sup>23</sup> *Id.*

<sup>24</sup> *See, e.g.*, Stephanie Tso, *Upgrading Our Electronics and Downgrading Their Environment: How E-waste Recycling Has Made China Our Backyard Dumping Ground*, 41 *Wash. U. J. L. & Pol'y* 205, 208 (2013).

<sup>25</sup> Jim Puckett et al., *Exporting Harm: the High-Tech Trashing of Asia*, *Basel Action Network* (2002), at <http://www.ban.org/E-Waste/technotrashfinalcomp.pdf>.

<sup>26</sup> *Id.*

<sup>27</sup> Christine Terada, *Recycling Electronic Wastes In Nigeria: Putting Environmental and Human Rights at Risk*, *Northwestern Journal of International Human Rights* 154, 158 (2012).

cannot rely on their own water supply and have to truck in water from the neighbouring town of Ninjing, located 30 kilometres away.<sup>28</sup> It has been estimated that the amount of lead in the water supply of Guiyu is 2,400 times higher than what the World Health Organization deems as acceptable for drinking.<sup>29</sup> Moreover, “Guiyu has the highest levels of cancer-causing dioxins in the world, and pregnancies are six times more likely to end in miscarriage.”<sup>30</sup>

### **B. E-Waste Continues to Rise Exponentially, Signifying Increasing Risk to the Full Enjoyment of Human Rights**

Compounding the complexity of environmental and social problems arising from e-waste processing is its exponential increase. This past November, a study reported that 200 hundred million people around the world are at risk to exposure of toxic waste.<sup>31</sup> The study covered 49 countries, and over 3,000 sites.<sup>32</sup> Globally, the volume of e-waste is expected to grow by 33% in the next four years.<sup>33</sup> Some experts have speculated that the global volume of e-waste will soon equal the weight of eight of the great Egyptian pyramids.<sup>34</sup> And, the United Nations has estimated that the amount of global e-waste will *increase* by about 40 million tons per year.<sup>35</sup>

These staggering statistics have prompted international scrutiny, to some degree. China has

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<sup>28</sup> *Id.*

<sup>29</sup> Elizabeth C. Economy, *The River Runs Black: The Environmental Challenge to China's Future* 74 (2004).

<sup>30</sup> Stephanie Tso, *Upgrading Our Electronics and Downgrading Their Environment: How E-waste Recycling Has Made China Our Backyard Dumping Ground*, 41 *Wash. U. J. L. & Pol'y* 205, 212-213 (2013).

<sup>31</sup> Siva Parmeswaran, *Toxic Waste 'Major Global Threat'*, BBC, Nov. 19, 2013, at <http://www.bbc.co.uk/news/science-environment-24994209>.

<sup>32</sup> *Id.*

<sup>33</sup> John Vidal, *Toxic 'E-waste' Dumped in Poor Nations, Says United Nations*, *The Guardian*, Dec. 14, 2013, at <http://www.theguardian.com/global-development/2013/dec/14/toxic-ewaste-illegal-dumping-developing-countries>.

<sup>34</sup> *Id.*

<sup>35</sup> Mathias Schlupe et al., *Sustainable Innovation and Technology Transfer Industrial Sector Studies: Recycling – From E-Waste To Resources*, United Nations Environment Programme & United Nations University, VII (July 2009), at [http://www.unep.org/PDF/PressReleases/E-Waste\\_publication\\_screen\\_FINALVERSION-sml.pdf](http://www.unep.org/PDF/PressReleases/E-Waste_publication_screen_FINALVERSION-sml.pdf).

begun enforcing some regulatory oversight over the e-waste industry. In response, some corporations have changed the locations where they ship their waste, choosing countries that are less inclined to exercise regulatory oversight. These tactics are a result of the unequal bargaining position that developing countries are in and will be further discussed in the section below.

Also compounding the complexity of the problem is the rise of e-waste generation within developing countries. China produces the second highest amount of e-waste in the world, behind the United States.<sup>36</sup> And, by 2020, the amount of e-waste produced in China is expected to rise by 200 to 400% because of rises in the sale of electronic goods.<sup>37</sup> Sales of electronic goods are expected to also rise in India, as well as on the continents of Africa and Latin America in high numbers.<sup>38</sup> So, while developing countries continue to import e-waste from the developing world, they are also increasing the amount of waste they generate within their borders, creating the potential for environmental degradation at a massive scale.

### **C. The Unfair Bargain for E-Waste Importers—Corporate Accountability and Governmental Action**

Corporations have largely taken advantage of developing countries through e-waste exports. Developing countries “offer cheap labor and relaxed environmental regulations, allowing for the opportunity of exploitation by developed countries.”<sup>39</sup> As a result, corporations and governments from developed countries are allowed to serve their markets by exporting waste to factories based

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<sup>36</sup> Urgent Need to Prepare Developing Countries for Surges in E-Waste, United Nations Environmental Programme, Feb. 22, 2010, at <http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=612&ArticleID=6471>.

<sup>37</sup> *Id.*

<sup>38</sup> *Id.*

<sup>39</sup> Stephanie Tso, Upgrading Our Electronics and Downgrading Their Environment: How E-waste Recycling Has Made China Our Backyard Dumping Ground, 41 Wash. U. J. L. & Pol’y 205, 208 (2013).

in developing countries “that operate under the most limited public regulation of labor, production, pollution, and health and safety standards.”<sup>40</sup> In effect, while developed countries are able to achieve a *better* standard of living, countries receiving e-waste are left with a lower standard of living.<sup>41</sup> Hence, the trade-off is unequal, leaving developing countries without adequate compensation to deal with the environmental and social effects that result from the bargain. Even considering these unequal bargaining terms, developing countries continue to import e-waste in record numbers.

In Karachi, Pakistan, one of the newer sites that have attracted e-waste commerce, the Sher Shah market “serves as an open informal market, without state controls of any kind.”<sup>42</sup> The attractiveness of the Pakistani market is undeniable considering the low prices offered for processing of e-waste—as low as \$2-\$3 per computer monitor.<sup>43</sup> Workers in Pakistan’s e-waste industry average a 12-hour workday and a daily take-home pay of \$2.70.<sup>44</sup> Many of these workers, which include both adults and children, work under treacherous conditions, without the availability of any protective gear.<sup>45</sup> They have little education and a good portion are illiterate, few of them are aware of the toxics that they inhale and just as few are unable to relate their illnesses to the work they do.<sup>46</sup>

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<sup>40</sup> *Id.* at 209.

<sup>41</sup> *Id.*

<sup>42</sup> Jim Puckett et al., *Exporting Harm: the High-Tech Trashing of Asia*, Basel Action Network (2002), at <http://www.ban.org/E-Waste/technotrashfinalcomp.pdf>.

<sup>43</sup> Sarah Fehm, *From iPod to e-Waste: Building A Successful Framework for Extended Producer Responsibility in the United States*, 41 *Public Contract Law Journal* 176, 177 (2011).

<sup>44</sup> *Report Exposes Pakistan’s E-Waste Recycle Workers’ Plight*, *The Express Tribune*, Mar. 7, 2013, at <http://tribune.com.pk/story/517199/report-exposes-pakistans-e-waste-recyclingworkers-plight/>.

<sup>45</sup> *Id.*

<sup>46</sup> *Id.*

Such unequal terms in the e-waste trade begs the question: why do developing countries continue to import e-waste when there are such high negative externalities associated with their maintenance? While workers rarely benefit from their low-wage labour, contractors in developing countries reap millions. In Guiyu alone, the e-waste industry generates profits up to 1 billion Yuan (equivalent to \$130 million).<sup>47</sup> Because most electronic devices contain useful metals that can be reused, lucrative parts are taken out and resold, while the leftovers are usually dumped in landfills, or are simply burnt.<sup>48</sup> Deposits of silver, gold and palladium found in obsolete electronic devices have been estimated to be 40 to 50 times richer than dug-up ores.<sup>49</sup> While high-tech recyclers can recover 95% of these rich metals, dirtier, lower-cost methods are still effective, and therefore preferred.<sup>50</sup>

### **III. Survey of Existing Laws Regulating E-waste Exports in Developed Countries**

Processing of e-waste does not inevitably lead to toxic exposure. Smart, environmentally sound techniques to e-waste processing do exist, but are rarely employed because destructive and unsustainable practices are preferred as a cost-saving mechanism. Hence, developed countries must ensure that regulatory oversight is effective in incentivizing sustainable, domestic processing of e-waste. And, these regulations must pressure municipalities and corporations alike to pursue sustainable e-waste processing practices. The following section serves as a limited overview of some efforts made by governments to regulate and oversee e-waste and seeks to determine the effectiveness of their measures.

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<sup>47</sup> Mark Chisholm & Kitty Bu, China's E-Waste Capital Chokes on Old Computers, Reuters, Jun 11, 2011, at <http://www.reuters.com/article/2007/06/11/us-china-ewaste-idUSPEK14823020070611>.

<sup>48</sup> *Id.*

<sup>49</sup> The Politics of E-Waste: A Cadmium Lining, *The Economist*, Jan. 26, 2013, at <http://www.economist.com/news/international/21570678-growing-mounds-electronic-scrap-can-mean-profits-or-scandals-cadmium-lining>.

<sup>50</sup> *Id.*

### A. California's Department of Toxic Substances Control

California created a watchdog, the Department of Toxic Substances Control, to regulate, control and stop the release of toxic materials.<sup>51</sup> But, the agency has been slow in effectively regulating hazardous waste disposal. The Los Angeles Times reviewed the record of the agency and reported that “[a] quarter of California’s 118 major hazardous waste facilities are operating on expired permits that may not meet current standards.”<sup>52</sup> Tax payers have been stuck with costs for cleaning up toxic sites, once “[h]undreds of companies [] walked away from contaminated sites.”<sup>53</sup> While some efforts were made to recover costs from those companies, “it folded when polluters simply failed to pay bills totalling about \$45 million.”<sup>54</sup> And while the number of businesses that generate toxic waste within the state totals about 100,000, “the department has referred an average of four cases per year to prosecutors over the last five years” compared to more than 40 a year in the previous five-year period.<sup>55</sup> It seems recognition of environmental harm is growing around the State, and around the whole country for that matter, while regulation of environmental harm is dwindling and getting weaker. The Times’ report attributes this weakening in regulatory oversight to inconsistency in regulatory standards, haphazard enforcement and years of agency cutbacks, and turnover at the top.<sup>56</sup>

California’s efforts to create regulatory oversight should be commended. But, to be effective, they must employ greater resources to ensure that toxic waste does not effect the full enjoyment of human rights.

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<sup>51</sup> Jessica Garrison, et al. Toxic Waste Watchdog Can Be Glacially Slow, The L.A. Times, Dec. 27, 2013, at

<http://www.latimes.com/local/la-me-toxic-oversight-20131226-dto,0,7127395.htmlstory#axzz2uJCo6xqJ>.

<sup>52</sup> *Id.*

<sup>53</sup> *Id.*

<sup>54</sup> *Id.*

<sup>55</sup> *Id.*

<sup>56</sup> *Id.*

## B. Progress in Chinese Regulation of E-Waste

Since 2003, China has promulgated various regulations aimed at dealing with the increased e-waste problem. These measures, and their enforcement, show China's dedication to complying with international law and ensuring the full enjoyment of human rights. Furthermore, these regulations have had positive impacts and should be a model upon which other countries base their domestic laws.

China has passed nine different laws and regulations since 2003 to tackle pollution problems.<sup>57</sup> Many of these laws specifically relate to e-waste.<sup>58</sup> These laws reflect a fundamental shift in policy objectives, from mere "waste disposal" to "Source management"—which means controlling the source of pollution and the means employed in processing the pollution.<sup>59</sup> The overall objective of this new approach is to "reduce, minimize, recycle and reuse e-waste."<sup>60</sup> As part of these efforts, China has employed a special fund for e-waste recycling programs and has created a licensing scheme to ensure that informal e-waste recycling does not jeopardize workers health.<sup>61</sup> Thirty-four national pilot programs have also been introduced in various parts of the country, that measure the costs related to recycling in hopes of improving related technological processes.<sup>62</sup> Most promising, Guiyu is one of the sites where a pilot program has been introduced in light of the Chinese government's acknowledgment of the disastrous human rights conditions created by unsustainable e-waste processing and handling mechanisms employed there.<sup>63</sup>

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<sup>57</sup> Lei Zhou & Zhenming Xu, Response to Waste Electrical and Electronic Equipment in China: Legislation, Recycling Program and Advanced Integrated Process, 46 *Environmental Science & Technology* 4713, 4715 (2012).

<sup>58</sup> Of the nine laws and regulations, six of them have the words "electric" or "electronic" in their names. *Id.*

<sup>59</sup> *Id.* at 4714.

<sup>60</sup> *Id.*

<sup>61</sup> *Id.*

<sup>62</sup> *Id.* at 4717

<sup>63</sup> *Id.*

#### **IV. Existing HRC Mechanisms Dealing with E-Waste and the Potential For Differentiating Between the Two Mandates.**

The Special Rapporteur on hazardous waste has made note of the importance of E-waste when they considered its effects in India.<sup>64</sup> The Special Rapporteur noted in the report the fear that the average rate of e-waste in India alone would more than double from 330,000 tons per year to over 800,000 tons.<sup>65</sup> Of special concern to the Special Rapporteur were extremely dangerous techniques used in the informal e-waste sector at small-scale workshops, which are likely to grow as the rate of e-waste increases.<sup>66</sup> Additional oversight is needed to ensure stopping practices like “breaking of hazardous components, open-air incineration and acid leaching to extract gold and copper.”<sup>67</sup>

The Special Rapporteur’s recommendations urged the Indian government to develop a national plan for the sound disposal of e-waste, and to adopt appropriate measures to improve health and safety working conditions. These recommendations deal with the direct effects of e-waste on the Indian population. The Special Rapporteur’s report did not make any recommendations regarding indirect and long-term effects of e-waste, though he did acknowledge that there were associated secondary effects. This highlights the potential for differentiation between the two mandate holders. While ensuring safe working conditions for those processing and handling e-waste deals with the direct human rights effects, there should be a separate mandate holder able to fully deal with the secondary consequences of e-waste that has been clearly detailed in this report.

Furthermore, it is clear that the complaint mechanism may need to be different for the two mandate holders. Fact-finding missions are necessary for addressing immediate violations of human rights but may be insufficient to address the full extent of harm created by e-waste, exemplifying

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<sup>64</sup> Report of the Special Rapporteur on the Adverse Effects of the Movement and Dumping of Toxic and Dangerous Products and Wastes on the Enjoyment of Human Rights, U.N. Doc. A/HRC/15/22/Add.3 (September 2, 2010).

<sup>65</sup> *Id.*

<sup>66</sup> *Id.*

<sup>67</sup> *Id.*

the need for a mandate holder that can address its long-term consequences. This may require a complaint mechanism that allows for greater efforts to track the long-term consequences that e-waste has on human rights because “symptoms can take years to develop and can be ascribed to other causes.”<sup>68</sup> And, it may require complaint procedures that allow for fact-finders to investigate past abuses since “[i]t can be difficult to link illness to hazardous waste because those who have been exposed might not know it.”<sup>69</sup>

### **Recommendations**

HRA urges the Council to consider, in the next renewal cycle, strengthening the mandate of the Independent Expert on human rights and the environment. Additionally, and in consideration of the success born from concerted action, the Council should promote cooperation between both mandate holders. In doing so, the Council will begin to ensure exercising proper oversight of e-waste, limiting direct, indirect, and long-term effects of unsustainable practices on the full enjoyment of human rights.

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<sup>68</sup> Jessica Garrison, et al., State Fails to Keep Track of Hazardous Waste, L.A. Times, Nov. 16, 2013, at <http://www.latimes.com/local/la-me-hazardous-waste-20131117-dto,0,2085710.htmlstory#axzz2uYmm7NIJ>.

<sup>69</sup> *Id.*