

Alternative Report to the UN Committee on the Rights of the  
Child on the Occasion of Zambia's Combined Second, Third and  
Fourth State Party Report on the UNCRC

The Child Rights Impact of Pollution Caused by Lead Mining

by

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(<http://www.terredeshommes.org>).

## 1. Introduction

Zambia submitted its Combined Second, Third and Fourth State Party Report<sup>2</sup> on the United Nations Convention on the Rights of the Child (CRC) in August 2013 to the Committee on the Rights of the Child (the Committee). The Committee is due to consider that Report in January 2016. The Zambia National Child Rights Forum, a coalition of civil society organisations working for the promotion and protection of children's rights, also prepared and submitted its Shadow Report to the Committee.

terre des hommes has been working to promote understanding of the relationship between children's rights and the environment in Zambia as well as globally since 2011. Realising that both the State Party Report by the Zambian Government and the Shadow Report by the Zambia National Child Rights Forum do not address children's rights from an environmental perspective, terre des hommes has decided to submit this Alternative Report focusing on **the child rights impact of pollution caused by lead mining in the city of Kabwe**<sup>3</sup>. It considers the measures hitherto adopted by duty bearers in addressing the adverse impact and provides recommendations for future action. Although a specific case, the situation in Kabwe should be understood as occurring in a wider national context. Zambia's economy is heavily reliant on the extraction of natural resources, mainly copper. The economic development of the country comes at high environmental and human costs, while the capacity to deal with the technical and financial challenges involved is limited. Moreover, the fluctuation of commodity prices carries unpredictable risks. In the past, the slump in e.g. copper prices meant socio-economic decline that made it difficult for the government to cope with existing environmental liabilities.

## 2. Overview

In 1902, rich deposits of potentially dangerous lead were discovered in the center of Kabwe - today Zambia's fourth largest city. Mining and smelting operations in the town ran almost continuously from 1904 until 1994 – when the site was temporarily closed down due to economic reasons (decline in lead prices) - without the government adequately addressing the dangers of lead. „*Smelting was largely unregulated throughout the 20th century in Kabwe, and these smelters released heavy metals in the form of dust particles, which settled on the ground in the surrounding areas*“<sup>4</sup>. Over the decades, millions of lives have been potentially affected, with children bearing the brunt of environmental problems. Now, Kabwe is left with a poisonous legacy of lead contaminated dust that pollutes the community's soil and water. Uncovered tailing dumps, which still exist at the mining site and store significant waste material classified as toxic, pose a particularly significant threat because of the continued risk of contamination and because of the massive size of the piles. The Kabwe mine ranked among the world's top toxic threats as recently as 2013<sup>5</sup>. The high degree of lead contamination has earned Kabwe the infamous status of being Africa's most toxic city.<sup>6</sup>

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<sup>2</sup> CRC/C/ZMB/2-4.

<sup>3</sup> We thank Pure Earth (formerly Blacksmith Institute), Citizens for a Better Environment and Caleb Mutandwa for their substantial contributions to the report.

<sup>4</sup> Blacksmith Institute and Green Earth “The World's Worst 2013: The Top Ten Toxic Threats” 2013, p17 (<http://www.worstpolluted.org/docs/TopTenThreats2013.pdf>).

<sup>5</sup> Ibid.

<sup>6</sup> See “Zambia: Kabwe, Africa's most toxic city” available at <http://www.irinnews.org/report/61521/zambia-kabwe-africa-s-most-toxic-city>.

From 2003 to 2011, the Zambian government carried out the Copperbelt Environment Project (CEP) with support from the World Bank and the Nordic Development Fund to rehabilitate the mine area and improve human health<sup>7</sup>. At the start of the project, blood lead levels of 300 µg/dL (micrograms of lead per deciliter of blood) were recorded in children living in communities surrounding the mine. By the project's end, blood lead levels in children dropped to as low as 60 µg/dL. Significant progress was made, however, those recorded blood lead levels were still twelve times higher than the 5 µg/dL now recommended as the threshold for concern by expert bodies. Even low-levels of lead exposure can result in injury to the brain and nervous system and excessive lead exposure results in serious adverse health impacts. Since very little remediation work was completed, the risks to the community remain as high as they were prior to the CEP.

In 2014, terre des hommes commissioned an environmental assessment in order to understand where the persisting lead hotspots are within the community and to identify the exposure pathways among local residents. The assessment has shown that lead contamination still poses a large problem to the local population. Over 300 soil samples were taken across ten potentially affected communities and showed an average 2,626 ppm (parts per million) of lead in soil across the assessment area. As a reference, the worldwide health-based standard for lead in soil is 400ppm in areas where children play or frequent. Blood lead levels in children remain dangerously high. The assessment found a mean of 48.3 µg/dL across 196 blood samples of children under 10 years old. It is important to note that 26% of the blood samples were found to be above the detection level of the equipment (65 ug/dl). Hence, blood lead levels could be much higher.

terre des hommes currently funds a pilot remediation project in one of the most affected neighbourhoods of Kabwe that includes a community education campaign, a detailed environmental assessment, and a targeted clean-up of homes and soils. The pilot project is intended to inform a much larger, prospective remediation programme to be funded by the World Bank and carried out by the Zambian government as a follow-up to the CEP from 2016 onwards<sup>8</sup>. Such a programme should be strongly anchored in children's rights in order to prevent further damage and protect the lives of all present and future generations of children growing up in Kabwe. A child rights approach should also guide all further mining operations: In 2012, Berkeley Mineral Resources bought the mine and have planned on reopening it through its subsidiary, Enviro Processing Limited. BMR is a London-based mineral processing company that focuses on processing tailings at former mines.

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<sup>7</sup> The CEP actually addressed environmental liabilities in the entire Copperbelt mining region, including Kabwe (<http://www.worldbank.org/projects/P070962/zambia-copperbelt-environment-project-cep?lang=en>).

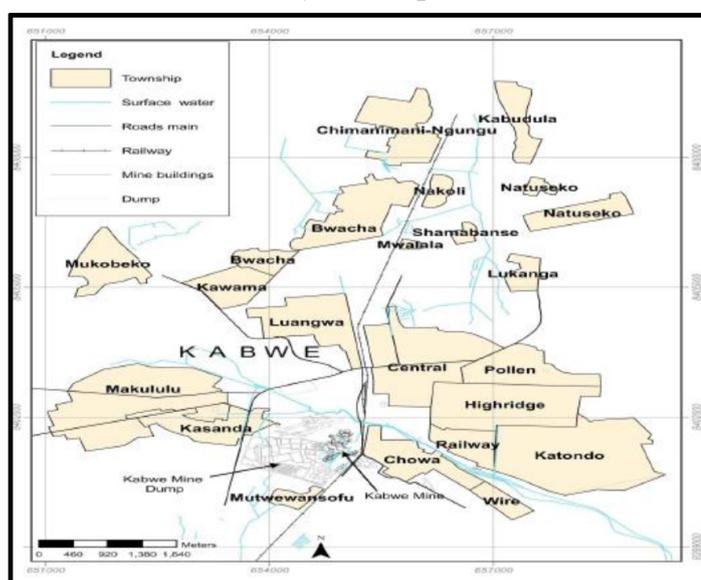
<sup>8</sup> See <http://www.times.co.zm/?p=75601>, <https://www.daily-mail.co.zm/?p=36048> or <https://www.lusakatimes.com/2015/09/19/world-bank-partners-kabwe-municipal-council-to-deal-with-lead-pollution/>.

### 3. Lead mining in Kabwe

#### 3.1. Geographic and demographic information

Kabwe is situated in the Central Province of Zambia, about 150 kilometres north of the nation's capital, Lusaka. It was born and grew out of the discovery of lead. The Kabwe mine site occupies approximately 3 km<sup>2</sup> and is situated south of Kabwe town. The mine's high-density townships of Chowa and Kasanda are located to the north-east and north-west of the mining area respectively. The official census in 2010 records a population of 202,914 people in Kabwe<sup>9</sup>. However, it is believed that the number is closer to 300,000, with informal settlements that are not captured on the census. This is significant because it would mean more children are affected than those reflected in official statistics. It also helps in assessing the adequacy of the measures taken by duty bearers to address the problem of lead poisoning. Based on the official census, **an estimated 93,000 children under 14 years old reside in Kabwe**<sup>10</sup>. The majority of these (and the uncounted) children are at risk for some level of exposure to lead because of the scope of the pollution.

#### *Map: Kabwe lead mine and nearby townships*



#### 3.2. Background information

Lead mining in Kabwe started around 1904 and continued until 30 June 1994 when the mine was temporarily shut down. Over the years the mine has changed ownership several times. Soon after independence in 1964, the Government of Zambia adopted a nationalisation policy. It became the major shareholder in the mining company in 1973 and took full ownership around 1982 through Zambia Consolidated Copper Mines Limited. In 2000, all-state owned mining companies were privatized as a requirement under the Structural Adjustment Programme agreed with IMF and World Bank. The Kabwe mine was sold in 2012 to Berkeley Mineral Resources, which, through its subsidiary Enviro Processing Limited, has resuscitated mining operations.

<sup>9</sup> [http://unstats.un.org/unsd/demographic/sources/census/2010\\_phc/Zambia/PreliminaryReport.pdf](http://unstats.un.org/unsd/demographic/sources/census/2010_phc/Zambia/PreliminaryReport.pdf).

<sup>10</sup> On average in Zambia, 46.2% of the population is under 14 years of age. See [http://www.indexmundi.com/zambia/age\\_structure.html](http://www.indexmundi.com/zambia/age_structure.html).

Rising commodity prices and advances in ore processing technology mean that lead mining has become profitable again. The Zambian Government, through Zambia Consolidated Copper Mines - Investment Holding Limited (ZCCM-IH), retained the responsibility to address the environmental liabilities that were a result of the many decades of unregulated mining. This includes rehabilitating and restoring the environment affected by Kabwe mine. BMC will not take responsibility for the persisting legacy waste<sup>11</sup>.

### 3.3. Lead poisoning

From 1904 to 1994 lead mining in Kabwe continued without the Zambian Government putting in place pollution laws regulating emissions from the mine and smelter plant<sup>12</sup> or effectively addressing the dangers of lead. The legacy of those years of unregulated mining are large uncovered overground dumps of residuals, which contain, among others, lead. It is believed that contamination in Kabwe results from a combination of wind carried dust, transportation routes from the mine carrying contaminated soils, and workers carrying lead dust back to their homes (exposure pathways). Prevailing winds from the southeast carry lead-dust from the tailings piles into the communities to the north and west of the mining area.

Worldwide health-based standards recommend that soil lead levels in residential areas where children play or frequent remain below 400ppm (parts per million) to prevent adverse health impacts<sup>13</sup>. At a level of 400ppm of lead in soil, the uptake of lead by children should result in blood lead levels below the 10 µg/dL used by WHO as the threshold for concern. It is important to note, however, that there is evidence of adverse effects of lead below 10 µg/dL. Consequently, the US Centers for Disease Control and Prevention (CDC) have recently eliminated the “level of concern” and established a new level of reference of 5 µg/dL. As a result, soil standards may soon follow, with reduced standards of lead in soil<sup>14</sup>.

The environmental assessment commissioned by terre des hommes in 2014 included soil sampling (over 300 samples) in ten neighbourhoods surrounding the Kabwe mine. All samples were taken in residential areas, including family compounds and gardens, children’s play areas and football fields, schools, health centres, footpaths and other well-travelled areas, to best understand possible exposure pathways. These are all areas where possible exposures occur regularly, especially for children. The average level of lead in soil across the assessment was 2,626 ppm. In several neighbourhoods, soil levels averaged much higher, with as high as 60,000 ppm or 6% lead in soil encountered in residential areas<sup>15</sup>. In addition to residential yards and family compounds several playgrounds and football fields showed high concentrations of lead (up 15000 ppm). Since many public spaces are contaminated, children who visit these areas from non-affected communities also risk exposure and can possibly spread contamination further. In neighbourhoods with paved roads, cement houses and ample vegetation to cut down on dust the lead levels were, on average, much lower than those of informal neighbourhoods

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<sup>11</sup> <http://www.bmrplc.com/lead-and-zinc/kabwe-mine/>.

<sup>12</sup> It was not until 1990 when the Environmental Protection and Pollution Control Act was enacted (<http://www.zema.org.zm/index.php/environmental-legislation>).

<sup>13</sup> Caravanos, J.K. et al. The burden of disease from pediatric lead exposure at hazardous waste sites in 7 Asian countries. *Environ. Res.* (2012), <http://dx.doi.org/10.1016/j.envres.2012.06.006>.

<sup>14</sup> [http://www.cdc.gov/nceh/lead/acclpp/blood\\_lead\\_levels.htm](http://www.cdc.gov/nceh/lead/acclpp/blood_lead_levels.htm).

<sup>15</sup> Overall, lead levels in soil ranged between 139-62142 ppm.

and settlements. Several families living in homes next to the mine were successfully evacuated and resettled under the CEP. However, likely due to a lack of institutional or administrative controls, the evacuation was limited in its efficacy. In other words, without proper enforcement regulations in place, the local government was unable to enforce the evacuation to prevent resettlement. Squatters have since returned to live in nearly all of the previously evacuated areas. With a lack of community education, many of the families living in these areas are unaware of the lead risks and the reasons for the initial evacuation.

### 3.4. Impact of lead mining on children in Kabwe

The most significant pathway for lead to enter the body at Kabwe is the ingestion and inhalation of lead contaminated soil, particularly by children. This ingestion is a result of several types of actions: incidental ingestion of soil that gets on hands during eating; when children put fingers in their mouth or chew fingernails; eating of poorly washed food that has contaminated dust on it; breathing of dust that is then captured in the nose and throat and swallowed. It should be noted that it takes only a very small amount of lead ingestion to result in elevated blood lead levels and health impacts<sup>16</sup>.

While lead can be toxic to every human being, research has proved that children are most at risk to lead contamination because their smaller bodies result in proportionally higher doses for the same level of exposure, and because children tend to ingest more dirt and their neurological development is still in progress. Compared with adults, a larger proportion of the amount of lead swallowed will enter the blood of children<sup>17</sup>. Additionally, children often breathe in and swallow dirt particles on the ground while they play.

Since children are still developing, they are more susceptible to health impacts of lead. Even low-levels of lead exposure can result in injury to the brain and nervous system. Additionally, damage caused by lead is not reversible. Excessive lead exposure results in serious adverse health impacts, including:

- neurological impact on memory, coordination and speech;
- a lack of attention span, dyslexia, and other such learning disabilities;
- intelligence loss in children;
- stomach pain, numbness, fatigue and weight loss;
- heart disease, anemia, and stroke and
- at high doses, disability and death (Levels in excess of 120 ug/dL can potentially be fatal)<sup>18</sup>.

High body burdens of lead are also strongly associated with decreases in social and economic productivity over the entire lifespan and increases in societal violence.

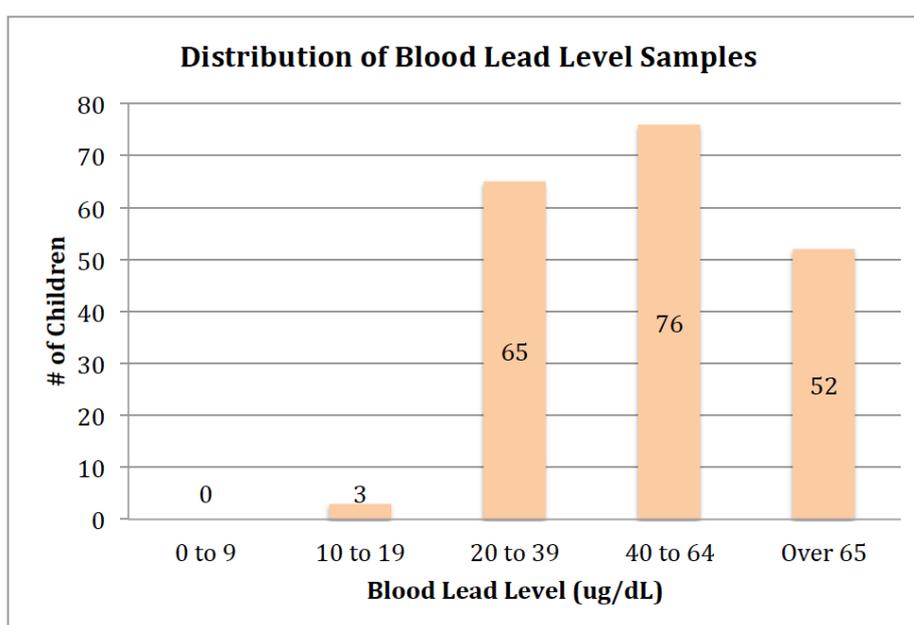
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<sup>16</sup> Morbidity and Mortality Weekly Report. "Blood Lead Levels in Children Aged 1-5 Years – United States, 1999-2010. April 5, 2013. 62(13); 245-248.

<sup>17</sup> Centers for Disease Control and Prevention. Toxic Profiles: Lead.  
<http://www.atsdr.cdc.gov/toxprofiles/tp13.pdf>.

<sup>18</sup> Caravanos, J.K. et al. The burden of disease from pediatric lead exposure at hazardous waste sites in 7 Asian countries. Environ. Res. (2012), <http://dx.doi.org/10.1016/j.envres.2012.06.006>. See also Bellinger, D., Leviton, A., Waternaux, C., Needleman, H., Rabinowitz, M., 1987. Longitudinal analyses of prenatal and postnatal lead exposure and early cognitive development. N. Engl. J. Med. 316, 1037–1043.

The environmental assessment commissioned by terre des hommes showed that in all neighbourhoods, children's blood lead levels far exceeded the recommended standards. **All 196 blood samples were found to have BLL that were above the WHO threshold of concern of 10 µg/dl** and the CDC level of reference of 5 ug/dL. 98% had BLL above 20 µg/dl and 26% were found to be above 65 µg/dl, which was the detection level of the equipment used. It is important to note that blood lead levels could be much higher in the children that tested above 65 ug/dl. Makandayama, Mutwe Wansofu and Chowa districts showed the highest percentages of children with elevated blood lead levels above 65 ug/dl. This reveals an acute lead exposure within these neighbourhoods. There was no significant difference between blood lead levels in males versus females in the area. The table below summarizes the results of the blood testing.



#### 4. Rights Affected by Lead Mining

Children in Kabwe are at great risk of having their rights violated owing to lead poisoning. The impact on some of the most affected rights will be summarized below. More generally, it should be noted that lead pollution in the town has been mainly treated – if it all - as a matter merely of cost-benefit analysis (World Bank 2011<sup>19</sup>, pp54-55), while child rights require the Government of Zambia to consider it in light of its effect on the rights of the individual child to grow up in dignity and freedom. Childhood is a unique period of development and violations of children's rights stemming from environmental damage such as lead poisoning can have lifelong and irreversible consequences. The cost-benefit approach to lead pollution in Kabwe is well illustrated by the fact that due to financial constraints only a limited number of children were tested for lead in blood under the CEP (5,986 of children projected to be affected, and even fewer were effectively treated (2,822 children), while the overall population of children (aged 0-18) was estimated at 60,000. Children were discharged from the lead treatment and monitoring

<sup>19</sup> World Bank. 2011. *Zambia - Copperbelt Environment Project*. Washington, DC: World Bank  
<http://documents.worldbank.org/curated/en/2011/10/15583313/zambia-copperbelt-environment-project>.

programme when they reached the age of 7 without fully establishing the extent to which lead poisoning would have affected their health. The objective of the World Bank funded project was to reduce blood lead levels below 25 ug/dl as an interim action standard, even though this was still significantly higher than the WHO threshold of concern of 10 ug/dl. The objective was not reached at the end of the CEP (World Bank 2011, p.66 and 70). The Government of Zambia is commended for implementing the Copperbelt Environment Project (CEP) between 2003 and 2011. These measures were, however, inadequate to protect the rights of all children in Kabwe in a comprehensive manner. The CRC requires that the best interests of the child be the primary consideration in all actions taken concerning the child. As the Committee has emphasised, this entitles that decisions taken by administrative authorities on, *inter alia*, health and the environment should be assessed and guided by the best interests of the child.<sup>20</sup>

#### 4.1. The Right of the Child to the Enjoyment of the Highest Attainable Standard of Health

Article 24 (2) of the UNCRC provides a direct link between the environment and children's right to health. In fulfilling its obligations under this right, a State Party is required to take *into consideration the dangers and risks of environmental pollution*.

Lead poisoning in Kabwe heavily impacts on the enjoyment of children's right to health. Prior to the mine and processing plant closing, there were no pollution laws regulating emissions from the mine and smelter plant. In turn, air, soil, and vegetation were all subject to contamination, and ultimately, over the decades, millions of lives have been potentially affected without the government effectively addressing the dangers of lead. While efforts have been made to mitigate the impact of lead from the 1970s onwards, these stopped short of providing concrete solutions to prevent lead exposure and to stop the massive health impacts of lead contamination. The CEP carried out between 2003-2011 provided guidance and project plans to implement comprehensive soil remediation work, but that work was never fully implemented due to lack of time and financial resources. After 2010 most activities abruptly halted.

While an Integrated Case Management Program was created under the Copperbelt Environment Project to treat children with elevated blood lead levels, the program only accepted children under seven, and once a child reached seven years old, they were no longer allowed to be part of the program under the CEP – due to financial constraints<sup>21</sup>. Scoping studies done prior to the project estimated that out of those persons impacted by lead in soil in Kabwe approximately 20,000 were aged 0-5 years, and 40,000 aged 6-18 years (World Bank 2011, p55). In the end, only children projected to be affected (5986) were tested to determine blood lead levels (hence, no census testing), and only 2,822 of these received treatment in the form of nutritional supplements or chelation therapy (World Bank 2011, p21). According to the World Bank, „*The overall project objective in Kabwe was to reduce blood lead levels in affected children to initially an interim lead level of 25ug/dL and ultimately to the WHO recommended level of 10ug/dL*“ (p68). The Case Management Program led to a reduction of blood lead levels between

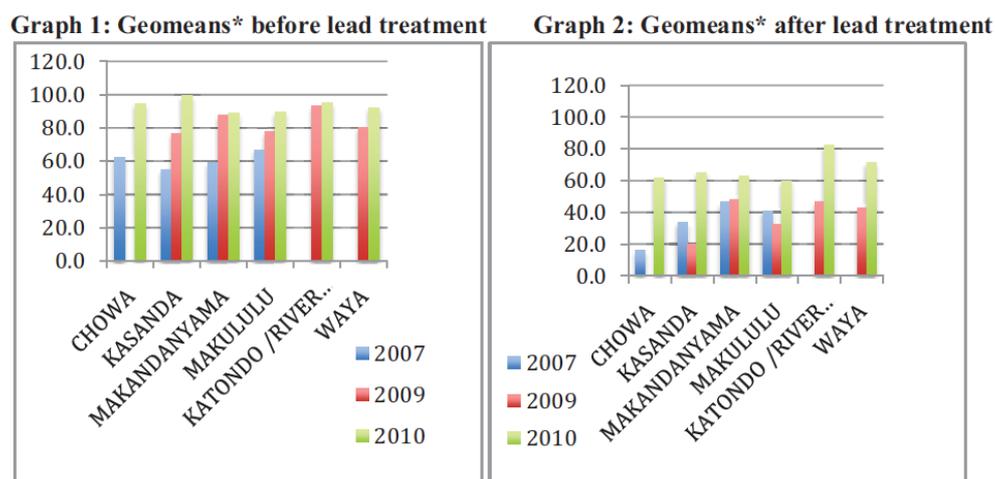
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<sup>20</sup>General Comment No. 14: *The right of the child to have his or her best interests taken as a primary consideration*, 29 May 2013, U.N. Doc. CRC/C/GC/14, para. 30.

<sup>21</sup> The first blood testing programme for communities in Kabwe was only undertaken in 1994 under the Kabwe Mine Site Rehabilitation and Decommissioning Plan.

20-25 percent in the case of treatment with nutritional supplements (for children with blood lead levels between 20-64 micrograms per deciliter) and by up to 74 percent for chelation treatment (for children with blood lead levels beyond 65 micrograms per deciliter). *However, due to various constraints attributed to inadequate funds the programme was unable to sustain progressive reductions in the geomeans and was unable to achieve the intended interim geomean of 25ug/dL* (World Bank 2011, p70); the blood lead levels recorded at the end of the project were still much higher than the 10 µg/dL used by WHO as the threshold for concern. With elevated lead levels in soil persisting, even those children treated under the CEP risk re-exposure.

**World Bank 2011<sup>22</sup>: Three recruitments undertaken from 2007-2010 with a total of 5986 children sampled for blood levels**



Year of Recruitment	Geomeans before treatment	Geomeans after treatment
2007-2008	59.0	42.0
2008-2009	78.2	38.8
2009-2010	93.3	66.0

Lacking sustained resources, the local Zambia Consolidated Copper Mines - Investment Holding Limited (ZCCM-IH) office has been unable to continue effective monitoring of local children post CEP. There is very little up to date knowledge about the current state of children's health in the area. According to ZCCM-IH, all health information gathered under the CEP was supposed to be kept and stored by the District Medical Office. It is unknown where this information currently resides. When the terre des hommes commissioned research was carried out in 2014, ZCCM-IH had run out of test strips for the LeadCare I blood testing machine. Each time a blood test takes place, a test strip is needed for the blood sample. Furthermore, nurses reported that these must be sent to the capital Lusaka, a two-hour drive to the south, to test for lead. This means that they have no practical way to test blood lead levels in children. The nurses

<sup>22</sup> World Bank. 2011. *Zambia - Copperbelt Environment Project*. Washington, DC: World Bank, pp21-22 (<http://documents.worldbank.org/curated/en/2011/10/15583313/zambia-copperbelt-environment-project>).

are also unable to provide chelation because of limited financial resources and a lack of access to the necessary therapies. Parents were told to feed at risk children milk, soybeans and leafy green vegetables, all thought to block lead uptake by the body. But distribution of nutritional goods to counter lead has been inadequate since the CEP ended in 2011.

Without effective cleanup or blood lead level reduction activities in children, the community has continued to suffer the consequences of high levels of lead exposures. All blood samples analyzed during the terre des hommes commissioned assessment were found to be above the limits of concern issued by the WHO (10 ug/dl) and the CDC (5 ug/dl). In fact, children's blood lead levels far exceed these standards. There is, furthermore, acute lead exposure in the neighborhoods of Makandayama, Mutwe Wansofu, and Chowa districts. Results of all recent environmental health assessments are similar to those of studies done when the mine was still operating. It may, therefore, be concluded that there is "*no difference between the severity of Pb poisoning during active mining period and (almost) 20 years after closure of the mine.*"<sup>23</sup>.

Pediatric nurses interviewed in 2014 believed that all children in Kabwe are affected by lead in one way or another because of the scope of the pollution. They reported that lead may be the cause of a condition posted on the wall of their office: "flaccid (floppy) paralysis" whose symptoms are "weakness, frequent falls, gait disturbance, cannot walk." They see children with these symptoms on a fairly regular basis. Health officials in Kabwe said that they have seen gastrointestinal disorders and symptoms resembling lead palsy in children. Teachers at the David Ramusho elementary and middle school said they don't know which students have high lead problems since no testing is done and when it was, results were kept private. Many of the students, themselves, and their families do not know the results. But they know many of the 3,000 boys and girls at the school have been exposed to high levels of lead. Teachers reported that students often have no appetite, are moody, have slim bodies and often ringworm.

#### 4.2. The Right to Life, Survival and Development

The right to life, survival and development is among the key guiding principles of the CRC which underpin the enjoyment of all other rights. „*The right to survival and development can only be implemented in a holistic manner, through the enforcement of all the other provisions of the Convention, including rights to health, adequate nutrition, social security, and adequate standard of living, a healthy and safe environment, education and play [...]*.”<sup>24</sup> The Committee has commented that actions to implement this right include preventive measures such as the effective regulation and monitoring of the environmental impact of business.<sup>25</sup>

All recent and earlier blood lead level tests in Kabwe have shown levels of lead in blood that pose a severe threat to children's right to development. The adverse impact of lead poisoning on children's development is well documented. As mentioned above, even BLL below 10 µg/dl have been associated with neurological and behavioural impairments (e.g. intelligence loss).

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<sup>23</sup> J Yabe et al "Lead poisoning in children from townships in the vicinity of a lead-zinc mine in Kabwe, Zambia" Chemosphere 119 (2015) 941-947, p945.

<sup>24</sup> General Comment No. 7 on Implementing Child Rights in Early Childhood, para.10.

<sup>25</sup> General Comment No. 16: on State obligations regarding the impact of the business sector on children's rights, 7 February 2013, U.N. Doc. CRC/C/GC/16 para. 20.

Since no census testing has been carried out so far, it must be assumed that all children at risk for some level of exposure to lead have been affected in one way or another.

***Caravanos, J.K., et al. (2012): Relationship between blood lead level and cognitive (IQ) changes***

Relationship between blood lead level and cognitive (IQ) changes.

Blood lead levels (ug/dl)	IQ deficits in 0–4 years old (points)	
	Lanpheu	Schwartz
2	–1.87	–0.51
4	–3.74	–1.03
6	–4.83	–1.54
8	–5.61	–2.06
10	–6.21	–2.57
15	–7.31	–3.86
20	–8.08	–5.14
30	–9.18	–7.71
40	–9.96	–10.28
50	–10.56	–12.85
60	–11.05	–15.42

During 2014 environmental health assessment, several teachers and local health workers were interviewed regarding elevated blood lead levels in children and reported developmental disabilities in school children that had grown up in the area. These same symptoms were not visible in children who had relocated to Kabwe recently. A local teacher, Mr. Wisdom Kaunda, wrote in a letter to the Zambia Daily Mail on July 23, 2014, that “Kabwe is indeed one of the 10 most polluted towns in the world. As a teacher I have observed poor memory retention in most of the pupils who were born in Kabwe as compared to those who just come on transfer. I have personally linked this problem to lead poisoning.” Mr. Kaunda goes on to explain that new students that come from outside Kabwe have much better grades and retain information much better than those who have been living in Kabwe for an extended period of time. One resident of the Makalulu neighborhood who brought her child to the blood tests during the assessment said that children with high lead levels “are not able to listen to what their parents advise.” Many of the neighborhood children exhibited such signs. An education official in Kabwe said that there are many children who cannot learn. “We tell them something and the next day they return and do not remember it,” he said. One teacher reported that “dealing with lead will help improve mental capacity of the children.” The teachers have seen no real improvements in the students since the CEP project.

It is not clear what measures have been taken by the government of Zambia to cater to the needs of those children permanently disabled as a result of lead pollution in a sustainable manner (e.g. through infrastructure and provision of services to enable appropriate access to education and skills training facilities).

#### 4.3. The Right to Play

All children have a right to play. The Committee has emphasized in this regard that while children „have a spontaneous urge to play and participate in recreational activities and will

*seek out opportunities to do so in the most unfavourable environments...certain conditions need to be assured, in accordance with children's evolving capacities, if they are to realize their rights under article 31 to the optimum extent". This includes „An environment sufficiently free from waste, pollution, traffic and other physical hazards to allow them to circulate freely and safely within their local neighbourhood“.<sup>26</sup>*

Lead contamination in Kabwe heavily interferes with children's right to meet, play and interact in an environment that is sufficiently free from waste and pollution. The environmental assessment commissioned by terre des hommes showed that several playgrounds and football fields had high concentration of lead; these are areas where children gather from many different households. During the CEP eleven lead free children play parks were rehabilitated and ZCCM-IH restored the dilapidated Clayton Park in Kabwe Town Centre. However, the Municipal Council faced financial resource challenges to continue maintaining the parks after CEP, as also indicated by children interviewed in affected neighbourhoods. As a result of non-maintenance and because children play wherever the opportunity arises (e.g. on lead contaminated dumps, recreational fields and bare land areas, backyards), they are at risk of high exposure to lead because of the scope of the pollution. For example, children have been spotted playing on the banks of the local canal, which are known to contain contaminated soil removed from the bed. Parents from the affected communities reported that local health and environmental officials had told them to prevent children from playing outside. The protection measure has been inadequate and ineffective. Children can be seen playing soccer barefoot in the dusty fields that are contaminated with lead. Without providing safe alternatives where children can still enjoy their right to play it is futile to imagine that they will just stop playing in the contaminated fields. Besides, stopping them in that way violates their right to play.

#### 4.4. Right to Information and Right to Environmental (Health) Education

Children have the right to seek, receive and impart information and ideas of all kinds (Article 13 of the CRC). More specifically, according to Art. 24 2(e) of the CRC State Parties should ensure that „all segments of society, in particular parents and children, are informed, have access to education and are supported in the use of basic knowledge of child health (...)“. Furthermore, Article 29 (1) of the UNCRC on the aims of education provides that: “States Parties agree that the education of the child shall be directed to: [...] (e) The development of respect for the natural environment.“

The Copperbelt Environment Project aimed, *inter alia*, to empower the citizens of Kabwe with information on lead poisoning and its effects. Capacity was built with local authorities with regard to their ability to carry out educational campaigns to the local communities. More than 20,000 local children received education on the dangers of lead and ways to reduce exposures through targeted school programs. Moreover, the lead monitoring program included home visits to improve educational outreach for children with high blood lead levels. However, without sustained funding, these programs did not continue. The number of children reached under CEP

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<sup>26</sup> See General Comment No. 17: on the Right of the Child to Rest, Play, Recreational Activities, Cultural Life and the Arts 17 April 2012 UN Doc. CRC/C/GC/17. Para.32. See also General Comment No. 7: implementing child rights in early childhood, 20 September 2006, U.N. Doc. CRC/C/GC/7/Rev.1, para. 34.

was ultimately only a third of the approximately 60,000 children the World Bank estimated were living in Kabwe at the time, and the project ended in 2011. Children at a recent workshop organised by Environment Africa, a local NGO involved in carrying out the terre des hommes funded pilot remediation project, stated that “this is the first time we are being invited to a workshop as children to come and talk about lead. No one has ever invited children to meetings like this.”<sup>27</sup>

It appears that much more needs to be done to empower not only the children but the general population in Kabwe with information on lead poisoning for them to fully participate in addressing the problem. The greater community is still uneducated as to lead exposures and ways to reduce the risk of lead exposures especially among children. During the environmental assessment of 2014, local leaders such as nurses, teachers, and political figures, showed strong knowledge of the problems in Kabwe when asked about educational outreach, health effects, and exposure pathways. However, interviews with the general population, revealed much less knowledge with regard to lead. CEP did not adequately address community needs regarding environmental education to deal with the effects of lead contamination.

## 5. Recommendations

Legacy lead contamination poses the greatest risk to public health in Kabwe. Since very little remediation work was completed, the risks to the community remain as high as they were prior to the Copperbelt Environment Project. **The Government of Zambia must take immediate and necessary steps to protect children from violations of their rights which arise from lead poisoning in Kabwe.** To this end, the Government should provide concrete solutions, individually and/or through cooperation with the World Bank (in a follow-up project to the CEP), to prevent lead exposure and stop the massive health impacts of lead contamination.

Remediation of lead contaminated soils is the highest priority in Kabwe. Absent a comprehensive intervention, even children treated to reduce BLLs will risk re-exposure when they return home. Recommendations are as follows:

- **Controlling the dust from the large tailings piles is key to developing a successful remediation program.** Currently, the tailings are open and largely without vegetative cover. Without any sort of control in place, the tailings will continue to pollute the surrounding areas. Even if remediation takes place in communities, without a dustplan, there is a high risk of recontamination. It is important to first control the major source of pollution, in order to insure lasting remediation within communities. The dust control plan should be implemented in collaboration with Enviro Processing – since the tailings are being re-processed - and include covering the tailings with heavy-duty liners and fencing them in to prevent foot traffic.
- More in-depth scoping assessment should be done in order to prioritize hotspots, better understand the depth of contamination, and assess the current activities at the mine. Based on such an assessment, **it is recommended that hotspot remediation of**

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<sup>27</sup> Environment Africa “Report of Mini-Workshop With Children Participating in the Voices of Children Project” 13 November 2015.

**contaminated soils in homes and public spaces occurs, especially in areas where children live and play, such as playgrounds and football fields.** The remediation should consist of a combination of removing lead contaminated waste and highly contaminated soils, cleaning and paving roads to remove contaminated dust, cleaning highly contaminated houses (walls, floors, courtyards), and covering less contaminated soils with clean soil to prevent exposure. Hotspot remediation can be inexpensive and extremely effective at breaking the exposure pathways to communities.

- **The source of toxic emissions needs to be addressed in order for a successful remediation to take place.** It is recommended that a smelter inspection take place to determine the current environmental impacts of the facility. While there is no information available as to whether the processing center is officially opened, several local people reported some level of activity occurring on site. The inspection and assessment would include guidance on how to reduce toxic emissions from the smelter. This is important to prevent future contamination once remediation is complete. While Berkeley Mineral Resources, through its subsidiary Enviro Processing Limited, has submitted plans to improve the processing facilities, it is unclear as to whether these plans have been implemented. The inspection should be done by an international expert who can certify that the smelter is cleanly operating and following international standards. The International Lead Management Council (ILMC) is one such organization that carries out inspections of smelters<sup>28</sup>. This does not reduce the direct responsibility of the State to meet its obligations under the UNCRC within its jurisdiction. The Zambia Environmental Management Agency is still in charge of enforcing the proposed updates to the smelter and mining area, as well as enforcing all environmental regulations in the area to prevent future mining operation from causing abuses of children's rights.

Child rights require the Government of Zambia to **consider lead pollution in Kabwe in light of its effect on the rights of the individual child to grow up in dignity and health.** A number of issues must be addressed in this regard.

- The first issue is the recruitment of children affected by lead contamination. From the projected 5,000 children assumed to be affected by lead contamination, only 2,822 have been effectively reached due to limited financial support from the government after CEP came to an end. Due to the rise in the number of children with elevated levels of lead in blood, more resources are required for additional recruitment, including further screening of children over the age of 7 years. This should be undertaken **to ensure that no child affected by lead contamination goes without appropriate treatment.**
- The second issue is the continuation of capacity building of health staff in Integrated Case Management (ICM), availability of manpower to effectively execute the programme and adequate equipment. Without sustained resources, the local Zambia Consolidated Copper Mines - Investment Holding Limited office has been unable to continue effective monitoring of local children post CEP. Under CEP, only a limited number of staff could be supported and thus build capacity. In addition, there were

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<sup>28</sup> <http://www.lead.org.au/lanv7n1/L71-9.html>.

inadequate capacity building tools to sustain the work upon completion of the World Bank funded project. The number of Lead Treatment Supporters in the community has dwindled due to a lack of inadequate funding. **Without proper funding for adequate equipment, capacity building and availability of manpower ICM programming will remain a challenge.**

- The third issue is **continued procurement and provision of food supplements for lead poisoned clients**. Parents should feed at risk children milk, soybeans and leafy green vegetables, all thought to block lead uptake by the body. The food supplement distribution was part of the several interventions under the CEP to try and reduce the elevated lead in blood among the affected children below the age of 7 years. But distribution of nutritional goods to counter lead has been inadequate since the World Bank project ended in 2011. Many of the food items are too expensive for families to afford, especially families with multiple children.
- The fourth issue is **support for children who have suffered from disabilities as a result of lead poisoning**. The Government of Zambia should develop sustainable infrastructure such as schools and health institutions in Kabwe that will enable children with disabilities, including those associated with lead poisoning, to access appropriate educational, skill training and health services.

Due to the large number of communities affected by lead contamination, community participation is essential for successfully cleaning out homes and yards. **Community education campaigns should continue to teach local people about the risks of lead and steps to take to reduce the risk of exposure.** Additionally, community members should be taught how to properly wash out their homes to remove leaded dust. Educational programs in schools about the risks of lead should be created to raise awareness about the risks of lead and ways in which children can mitigate those risks. School programs will also strengthen the capacity of teachers to identify the symptoms of lead poisoning in children to help with early detection and treatment.

It is critical that the Government of Zambia work on implementation and monitoring of the legal framework protecting the environment and human health, in Kabwe and beyond. To this end, **the Government should recognise the importance of children's human rights in its effort to address environmental problems in Zambia, including by putting into effect a clear regulatory framework for the mining industry operating in the State party to ensure that its activities do not negatively affect human rights or endanger environmental and other standards, especially those relating to children's rights.**

The Government of Zambia should be commended for enacting the Environmental Act which provides that "subject to the Constitution, every person living in Zambia has the right to a clean, safe and healthy environment."<sup>29</sup> This right includes the "right of access to the various elements of the environment for recreational, educational, health, spiritual, cultural and economic purposes."<sup>30</sup> The Act further provides for remedies which include prohibitory and mandatory

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<sup>29</sup> Section 4 (1) of the Environmental Management Act 2010.

<sup>30</sup> Section 4 (2) of the Environmental Management Act 2010.

interdicts as well as compensation where the right is threatened.<sup>31</sup> Another important legislation on environmental protection is the recently amended Mines and Minerals Development Act<sup>32</sup>. In terms of the Act, the exploitation of minerals should ensure safety, health and environmental protection, while wasteful mining practices should be avoided so as to promote sustainable development and prevent adverse environmental effects.<sup>33</sup> It requires the Mining Licencing Committee to take into account the need to conserve and protect the environment and to ensure that mining or mineral processing activities prevent any adverse socio-economic impact or harm to human health by, among others, carrying out environmental impact studies, in deciding whether or not to grant mining or mineral processing rights.<sup>34</sup> The Act creates strict liability on the part of the holder of a mining licence or person who directly contributes to the action or omission, which causes harm or damage during mining operations or mineral processing operations. They should compensate any person who suffers the harm or damage and in the case of harm being caused to the environment, the compensation may include the cost of reinstatement, rehabilitation or clean-up measures which are incurred and where applicable, the costs of preventive measures.<sup>35</sup> In case of harm or damage being caused to human health, compensation should include any costs and medical expenses; compensation for any disability suffered; and compensation for loss of life.<sup>36</sup>

Despite this improved legal framework, challenges continue to exist, including the lack of coordination between responsible institutions, the unsatisfactory implementation of existing laws and regulations<sup>37</sup> and the lacking balance between economic (natural resource exploitation) and social interests (protection of human rights). The Government of Zambia should provide sufficient financial resources to improve institutional capacity of bodies such as the Zambia Environmental Management Agency and the implementation of its laws and policies on the protection of the environment. From 2006 to 2015 the Government of Zambia allocated less than 1% of the total national budget to environmental protection, making it the least funded sector in Zambia.

#### **Contact Information**

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<sup>31</sup> Section 4 (3) and (4) of the Environmental Management Act 2010.

<sup>32</sup> <http://www.parliament.gov.zm/sites/default/files/documents/acts/The%20Mines%20and%20Minerals%20Act,%202015.pdf>.

<sup>33</sup> Section 4 of the Mines and Mineral Development Act Number 11 of 2015.

<sup>34</sup> Section 80 of the Mines and Mineral Development Act Number 11 of 2015.

<sup>35</sup> Section 87 of the Mines and Mineral Development Act Number 11 of 2015.

<sup>36</sup> Section 87 (9) of the Mines and Mineral Development Act Number 11 of 2015.

<sup>37</sup> Lindahl Joanna “Environmental Impacts of Mining in Zambia Towards better Environmental Management and Sustainable Exploitation of Mineral Resources” Geological Survey of Sweden 2014 p13.