Page 2

Kabwe pollution and the negative impact on the health of children and future generations

Page 6

News from Syria
The Blue Marists' support during difficulties

Page 10#MaristsforUkraine

#MaristsforUrraine
A Global Campaign for Ukraine



Kabwe pollution and the negative impact on the health of children and future generations

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A gray cloud looms over the sky of Kabwe, clearly visible from a distance as you travel the road that separates the city from the capital, Lusaka. It might appear as a harbinger of a heavy rainstorm, but it's unusual for this time of year (we're in April, in the heart of the dry season).

This isn't an approaching storm or a passing condition; it's the pollution cloud that constantly envelops the city. Pollution is a pervasive problem affecting communities worldwide, and Kabwe, in Zambia, faces one of the most severe cases of environmental pollution.

The lead and zinc mining activities in the region have left a disturbing legacy of contamination that poses significant health risks, especially to the most vulnerable populations, children, and the elderly. According to pollution experts, Kabwe is the most toxic city in the world, as mass lead poisoning has severely damaged the vital organs of generations of children.

According to studies conducted by various organizations such as Pure Earth and UNICEF, Kabwe is one of the most severely lead-contaminated places globally. Soil samples taken from various locations in Kabwe have shown incredibly high levels of lead, far exceeding international safety standards. The pollution problem in Kabwe can be traced back to its mining history.

The region once hosted one of the world's largest lead and zinc mines, which operated from 1902 until its closure in 1994. Over the years, unregulated mining practices led to the release of toxic substances into the environment.

These particles settled on surfaces, crops, and water bodies, resulting in ingestion, inhalation, and absorption into the bloodstream. According to a 2019 study published in the Environmental Research journal, over 95% of Kabwe's children have blood lead levels exceeding the limits set by the World Health Organization (WHO). The same study highlighted a clear link between blood lead levels and cognitive impairment in children.

Another study conducted by the Blacksmith Institute estimates that up to 60,000 children in Kabwe could be suffering from lead poisoning.

The long-term consequences on the young population are devastating:

- Neurological Damage Lead exposure in children can cause irreversible neurological damage, resulting in reduced cognitive functions, learning difficulties, and behavioral problems. Children's brains are still developing and are particularly vulnerable, and continuous lead exposure hinders their ability to reach their full intellectual potential.
- Developmental Issues Children exposed to lead are prone to developmental delays, hearing impairments, and delayed puberty. Lead disrupts the normal functioning of hormones, influencing both physical and mental development. It interferes with calcium absorption in the body, crucial for bone development, making lead-exposed children more susceptible to skeletal abnormalities and bone diseases.
- Anemia and Weakened Immune System
 Lead hinders red blood cell production, causing anemia. Furthermore, it compromises the immune system, making children more susceptible to infections and illnesses.
- Kidney and Cardiovascular Risks Some studies have shown a correlation between lead exposure and increased blood pressure, which can lead to cardiovascular diseases like hypertension and heart diseases in adulthood.
- Reduced IQ and Economic Productivity Lead-exposed children tend to have lower IQ
 scores, affecting their academic performance
 and limiting future job opportunities. Several
 studies have demonstrated a strong link
 between lead exposure and cognitive
 impairment in children. For instance, a study
 conducted by the University of Michigan
 found that children with higher blood lead
 levels had lower IQ scores and were more
 likely to have attention, memory, and learning
 difficulties. This can perpetuate a cycle of
 poverty and hindered development in affected
 communities.
- Behavioral and Emotional Issues Lead exposure has been linked to an increased

risk of behavioral and emotional problems in children. A study published in the Journal of Pediatrics revealed that children with high lead levels were more likely to exhibit aggressive behaviors, impulse control difficulties, and emotional disorders such as anxiety and depression.

• Intergenerational Impact - Lead exposure can have intergenerational effects, as lead can be passed from a pregnant mother to her unborn child. Some studies have shown that maternal lead exposure can increase the risk of preterm birth, low birth weight, and developmental problems in newborns.

An international group of researchers conducted an intriguing study on the social cost that future generations will bear due to lead pollution in the Kabwe area.

Regarding remediation, options considered include cement capping of the landfill, which would gradually reduce lead levels in the soil and provide benefits to all areas of Kabwe, and the removal and replacement of soil in highly contaminated areas, which would immediately benefit residents in those areas. Results have shown that the benefits would outweigh the implementation costs of such engineering remediation measures.

However, these remediation measures alone wouldn't immediately eliminate the pollution problem, so a combination of these remediation measures with alternative interventions might be the solution Addressing the pollution crisis in Kabwe requires concerted efforts from various stakeholders, including the Zambian government, which has actively worked to address the issue. The government has implemented and strengthened regulations regarding mining practices and environmental protection.

These regulations aim to minimize the release of lead and other hazardous substances into the environment. Additionally, the government has emphasized the enforcement of these regulations to ensure compliance by mining companies, even requiring comprehensive Environmental Impact Assessments (EIAs) before commencing operations.

Efforts have been made to identify and remediate lead-polluted areas, including soil and water remediation projects. These initiatives aim to restore affected areas and reduce lead exposure risks for local communities. On the other hand, the government has conducted public awareness campaigns to educate the population about the dangers of lead exposure and the importance of environmental conservation.

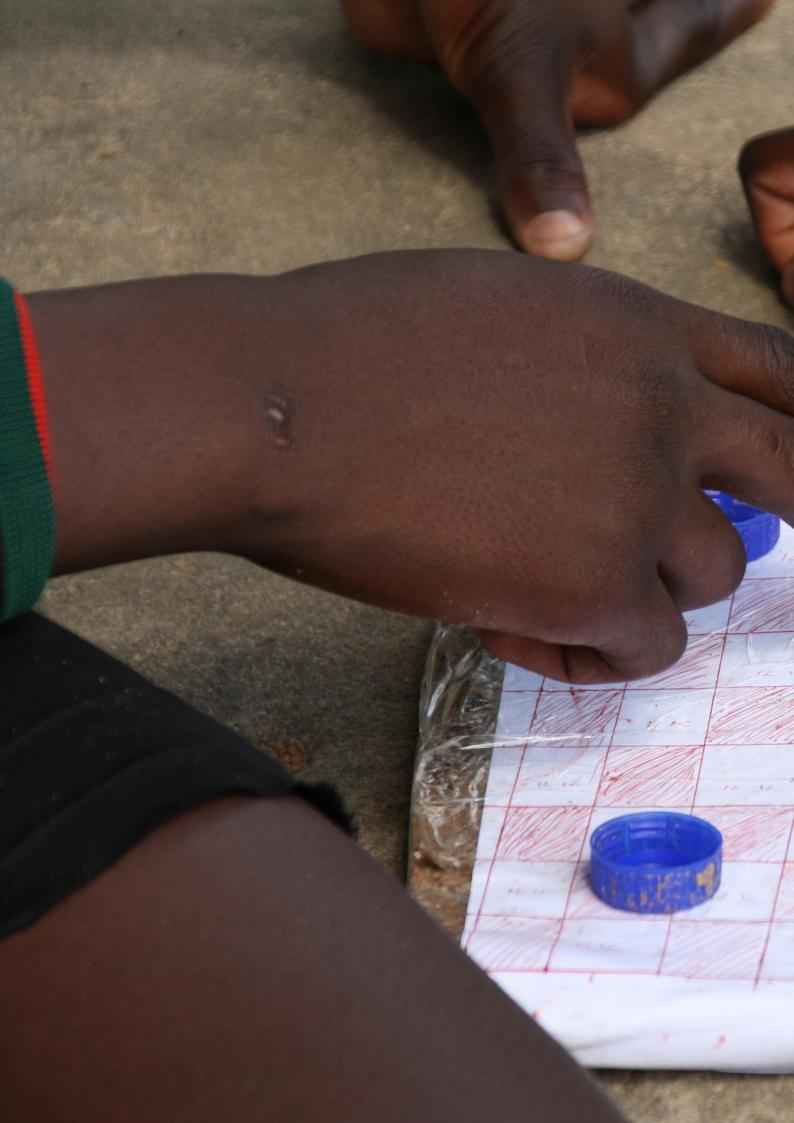
These campaigns seek to raise awareness among local communities, miners, and other stakeholders about the risks associated with lead pollution and promote responsible practices. Although these efforts demonstrate the commitment of the Zambian government to address the lead pollution problem, it's essential to recognize that it's a complex, long-term challenge, and an active involvement of affected community members is indispensable.

The Saint Paul Mulungushi community is located approximately 30 km from Kabwe and is thus affected by the consequences of lead pollution. The Marist Brothers have been present and active in the area since 1960 with a primary and secondary school. They play a crucial role because, in addition to educating children, they are committed to supporting the economic and social development of the community, including collaborating with other religious congregations in the area. With the active involvement of FMSI, they have adopted a comprehensive approach to address the lead pollution problem, focusing on capacity-building initiatives within the community.

The Marist Brothers have provided support to community members, enabling them to engage in sustainable livelihood practices and become advocates for environmental conservation. This approach aims to create long-term solutions by promoting sustainable agriculture and alternative income-generating activities.

Access to clean and safe drinking water has also been ensured for the community through effective water extraction, filtration, and storage systems. Furthermore, access to medical services, including screening and treatment for lead poisoning, has been facilitated.

FMSI has supported various initiatives aimed at improving the healthcare infrastructure in the area, ensuring that affected individuals receive the necessary care and support.







News from Syria

The Blue Marists' support during difficulties

Syria, already devastated by war and the economic hardship resulting from it and the international sanctions imposed, was hit by a terrible 7.8 magnitude earthquake on 6 February at 04:17 local time.

According to the latest UNICEF report published in March 2022, 6.5 million children are living in vulnerable conditions, including more than 3 million who are displaced.

The economic situation of families is extremely vulnerable: more than 90 per cent of the Syrian population live in poverty, with about 85 per cent of displaced families forced into debt. In fact, the average price of the food basket increased by 97 per cent from December 2020 to December 2021, leaving 12 million people (54 per cent of the population) severely food insecure. 20% of Syrian children under the age of 5 are chronically or acutely malnourished.

The worsening living conditions particularly affect children. 1 out of every 3 families report that their children show signs of psychological distress and 17% of displaced families in Syria have one or more children out of the school system, making a total of approximately 2.45 million Syrian children (40% are girls) who do not go to school. Among the causes, there is also a major shortage of facilities: 1 in every 3 schools in the territory cannot be used because they have been destroyed, damaged, house displaced families or are used for military purposes.

To cope with these difficulties, the Blue Marist centre in Aleppo, thanks to a network of 155 volunteers, Christians and Muslims, works daily to support the Syrian population.

The work of the volunteers has never stopped, even after the difficulties that arose during the earthquake.

On the contrary, **their work increased, day after day.** In June, two staff members of the Marist Foundation for International Solidarity (FMSI) travelled to Aleppo and had the opportunity to monitor several projects funded through the 'Earthquake Syria' campaign.

The campaign was launched on February 7th, 2023 to support the mission in Aleppo in this emergency time. To date, 365,369.09€ have been collected from a total of 533 donors.

The fundraising campaign aimed to respond quickly to the initial phase of the earthquake and the following state of humanitarian emergency through targeted interventions, including:

- Distribution of 5,194 food parcels
- Distribution of powdered milk to children under 11 years of age and special infant formula for infants under 1 year of age
- Distribution of 48,596 hot meals to people displaced by the earthquake and who found shelter in the centre during the first emergency phase
- Psycho-social support to people in a vulnerable condition who had been living in a war-torn country for years before the earthquake, with special attention to children
- Distribution of clothing, diapers, blankets.

Having overcome the initial post-emergency phase, the Blue Marists have fully resumed all their activities, and to date, all programs have fully restarted.





SEED Projects

In the heart of Aleppo, Syria, SEEDS has just marked the successful completion of its fifth year, a remarkable milestone in its mission to provide much-needed psychological support to children and families facing severe circumstances. Last year was a testament to its resilience, adaptability, and unwavering commitment to making a positive impact in a region plagued by multiple crises.

Aleppo, a city once known for its rich history and culture, has faced unprecedented challenges over the years. The economic crisis that has swept across Syria has hit Aleppo particularly hard. Poverty levels have soared, and the already precarious living conditions have deteriorated even further: in fact, a devastating earthquake on February 6th served as a grim reminder of the fragile stability in the region.

Despite these challenging obstacles, SEEDS has demonstrated remarkable adaptability in its fifth year of implementation. The Blue Marists have recognized the urgent need to shift its focus to address the pressing issues facing the community. This flexibility allowed them to continue providing vital support and hope to those most affected by the crisis.

SEEDS' five programs have been pivotal in transforming lives and instilling hope in Aleppo's most vulnerable populations: children, teenagers, women, and adults.

In fact, SEEDS has provided a safe and nurturing environment for children to heal from the trauma they've experienced. Through art therapy, play, and counselling, children have found a glimmer of hope amidst the chaos. Adolescents often

bear the brunt of psychological stress during times of crisis. SEEDS' program for teenagers has focused on building resilience, providing life skills, and creating a support network to help them navigate the challenges they face. Not less important, empowering women has been a cornerstone of SEEDS' work. Through skill-building workshops and support groups, women in Aleppo have gained newfound confidence and economic independence, giving them a sense of purpose in a tumultuous time, as well as the SEEDS' counselling services which have enabled individuals to cope with their trauma, manage stress, and find ways to rebuild their lives.

SEEDS' ability to pivot and respond to crises has been critical. Whether it's providing immediate assistance after the earthquake or addressing urgent mental health needs in the community, SEEDS remains steadfast in its commitment to supporting Aleppo's residents, and the Marist Foundation for International Solidarity is proud to be part of this stunning project.

In a city where everything seems to be shaking, SEEDS has stood as a signal of hope and resilience. As they reflect on their fifth year of operation in Aleppo, the Blue Marists are determined to continue making a positive impact in the lives of those who need it most.

The challenges are formidable, but SEEDS' unwavering dedication and adaptability demonstrate that even in the darkest of times, hope can be cultivated, and lives can be transformed.



#MaristsforUkraine A Global Campaign for Ukraine

FMSI Thanks Its Supporters and Partners

The Marist Foundation for International Solidarity (FMSI), in collaboration with the Solidarity Secretariat and the Secretariat for Education and Evangelization of the Marist Institute, wishes to express its deepest gratitude to all those who have participated with their generous contributions in the emergency campaign to support the population of Ukraine. The campaign was launched in December 2022 with the aim of mitigating the devastating effects of the war that has struck the country since February of the same year. Ukraine is currently facing an extremely critical situation caused by the ongoing conflict. The population is grappling with a lack of electricity, clean water, basic necessities, and even medical care. Thousands of people, including children, the elderly, and vulnerable families, are living in an unprecedented humanitarian emergency situation for the country.

Thanks to the generosity of the Foundation's supporters. FMSI, in close collaboration with the Sant'Egidio community, the Solidarity Secretariat, and the Secretariat for Education and Evangelization, has been able to provide immediate assistance to those in greatest need. The donations collected have been used to ensure electricity supplies, clean water, food, blankets, warm clothing, and medical care for the population. In total, 20,100 euros in financial donations were collected, along with contributions worth 6,797 euros. These latter contributions include 120 liters of extra virgin olive oil, 450 kilograms of long-lasting food, 180 kilograms of pasta, 20 kilograms of used and new clothing, blankets, and 5 kilograms of medicines.

This extraordinary contribution has brought hope and comfort into the lives of the Ukrainian population, demonstrating that in times of darkness, humanity can emerge and show solidarity.

FMSI is committed to continuing to support families, children, youth, and the elderly in situations of extreme difficulty. Although the road ahead is still long and the needs are many,

the commitment remains unchanged to work for a better future for those who represent the future of our world and the communities to which they belong.

We are proud of the results achieved and wish to share them with all those who supported the #MaristsforUkraine campaign.

Once again, thank you.

The Foundation acknowledges the importance of each contribution and will continue to work tirelessly through education, advocacy, and solidarity campaigns and projects for children, youth, families, and communities on the outskirts of the world.

Together, we can make a difference and build a better world for all.



