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WEEK



A global Initiative for Lead Free Drinking Water by 2040

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A global initiative towards making all drinking water Lead-free by 2040

➤ Goal

- Prevent lead-leaching from drinking water systems by 2030.
 - Make all drinking water lead - free by 2040.
- Participants to the Pledge remain committed to achieving SDG 6 and providing safely managed drinking water services to everyone, everywhere.
- Implementation of the Pledge by Uganda is being supported by the Hilton Foundation.



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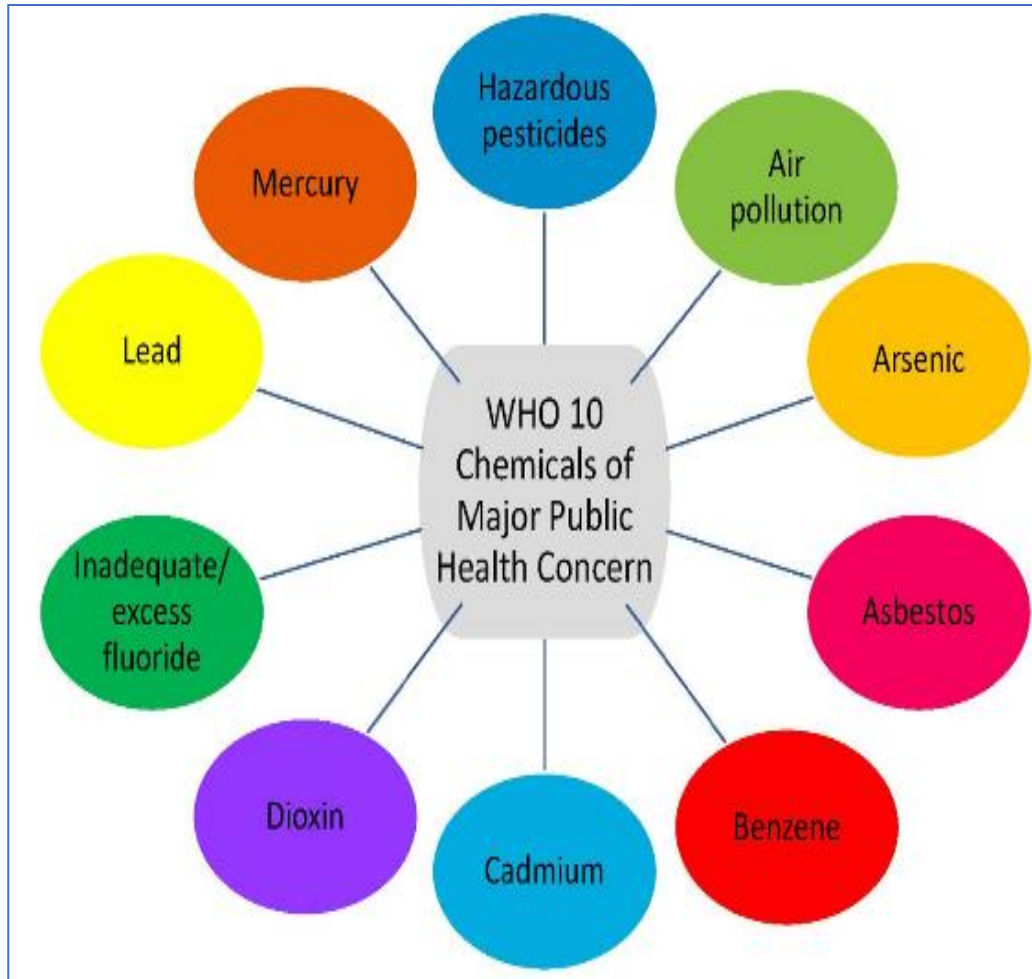


A global initiative towards making all drinking water Lead-free by 2040

The graphic shows a smartphone screen with a white background and a black border. At the top, there are four icons: the flag of Ghana, the flag of South Africa, the flag of Uganda, and the World Health Organization logo. Below these are two rows of logos for partner organizations: the first row includes IAPMO, IWA, IWSH, and LIXIL; the second row includes Millennium Water Agency, WRTI, RWSN, and UNC Water Institute. The bottom row features the University of Leeds, WaterAid, World Vision, and another World Vision logo. On the right side of the screen, there is a large black square containing a white QR code.



Chemical of Health Concern



In water, Lead is an invisible, odorless and tasteless

Kampala has the second worst air quality in Africa according to the AirVisual's 2018 World Air Quality Report



Sources of Lead in Drinking water

- **The primary source of lead in drinking-water is leaching from lead-containing materials in water systems.**

- **Water pipes, hand pump materials and fittings made**
 - Pure lead
 - Lead containing alloys (brass, bronze, stainless steel, galvanized iron)
 - PVC and uPVC with lead stabilizers

- **Other exogenous sources include pollution or leaching from lead-containing bedrock.**



Other Sources of Lead

1. Some traditional cosmetics
- 2. Lead-based paints and pigments**
- 3. Dust and chips from peeling, cracking lead-based paint**
- 3. Some toys and jewelry**
4. Certain medicines
6. Certain spices and candies
7. Some solders in food cans
- 8. Lead-based ceramic glazes on dishes and cooking pots**
- 9. Some metallic cookware**
- 10. Leaded gasoline**
11. Contaminated industrial sites
13. Unsound ULAB recycling sites
14. Emissions from waste incinerators
15. Contaminated soil where children play and food is grown
15. Family members with occupational exposure who bring lead dust home on clothes and shoes



Toxic Effects of Lead

#BanLeadPaint

FACT: LEAD IS TOXIC

It is harmful to everyone and
DAMAGES:



BRAIN



KIDNEYS



LIVER



BLOOD



REPRODUCTIVE SYSTEM

Young children

are most vulnerable. Their nervous systems are still developing and they absorb **4-5 times more than adults**, which can cause:

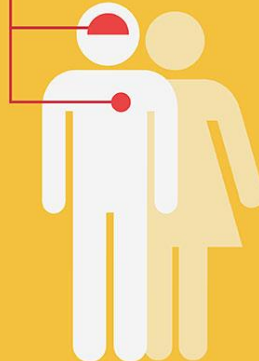
- intellectual disability
- underperforming at school
- behavioural issues



In adults

lead exposure increases the risk of:

- ischaemic heart disease
- stroke



In pregnant women

lead exposure damages many organs but also affects:

- the developing foetus



There is no safe level of lead exposure



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Impacts of Lead Exposure

- Out of 2 million annual deaths, from chemical exposure globally, 0.9 million is from Lead exposure.
- The most vulnerable groups being children and women of childbearing age.
- ***WHO provisional limit is 10ug/l.***
- ***No level of lead exposure is considered safe for children***



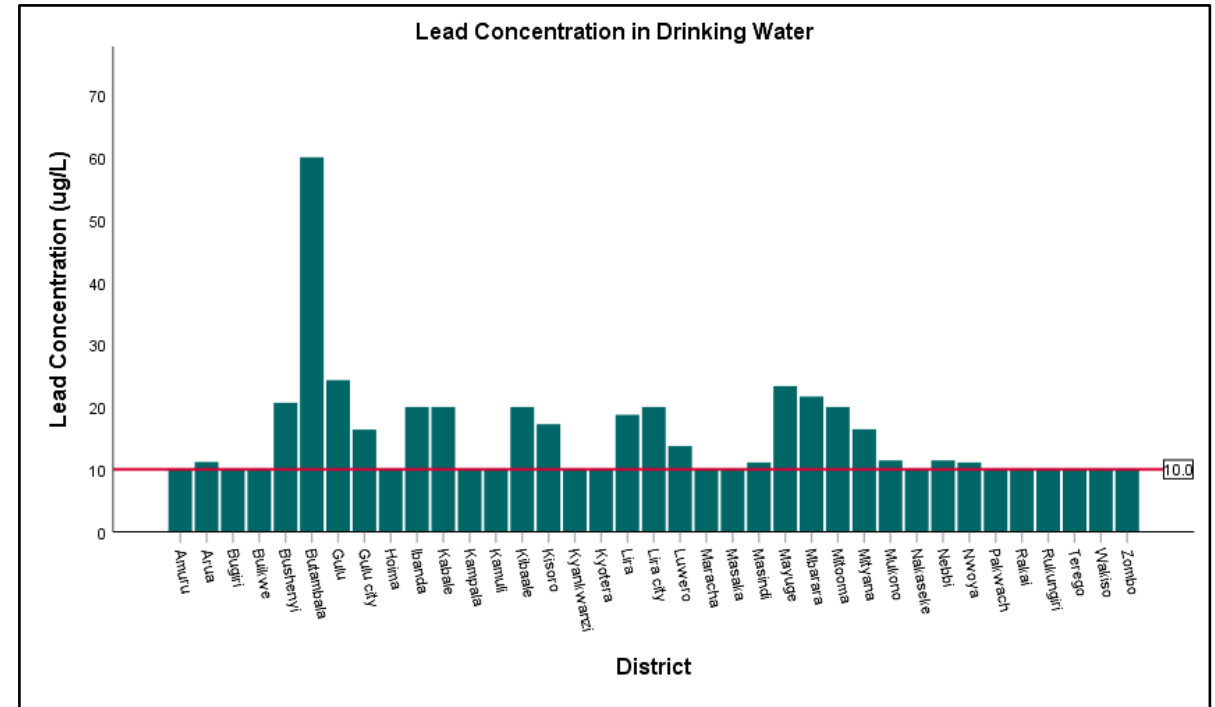
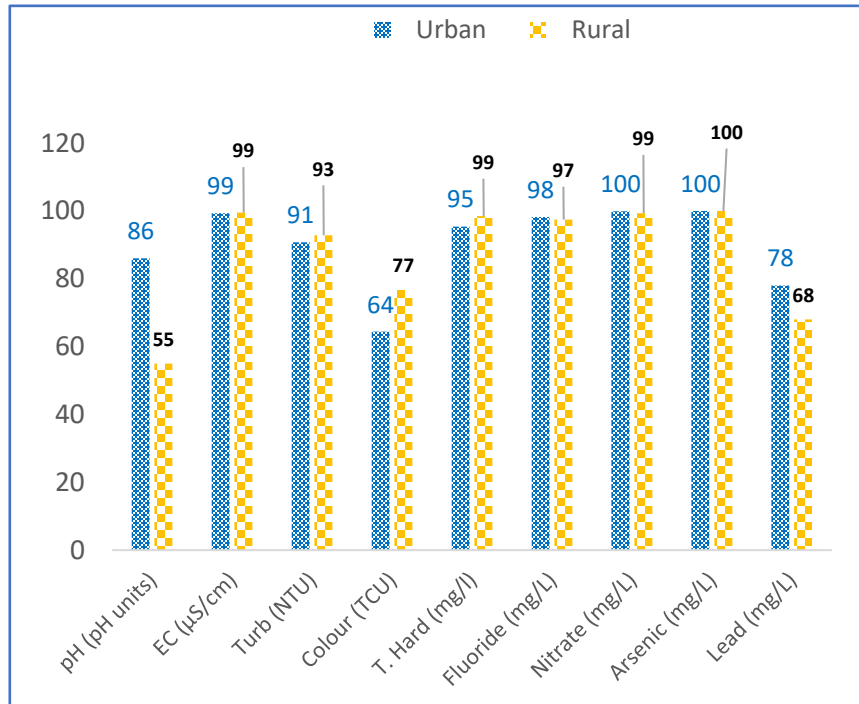
Implementing the Pledge

- Train staff to test and monitor lead in the water and also in the various products (water pipes, hand pump fittings & fixtures)
- Provide field and laboratory equipment for testing for lead in both water and various products.
- Develop technical regulations to address challenges of lead in drinking water.
- Stakeholder awareness raising on the benefits and costs associated with the pledge.
- Research on sources, impacts, prevention and remediation.
- Support Institutional and Human Resource capacity development to address lead challenge in Uganda.



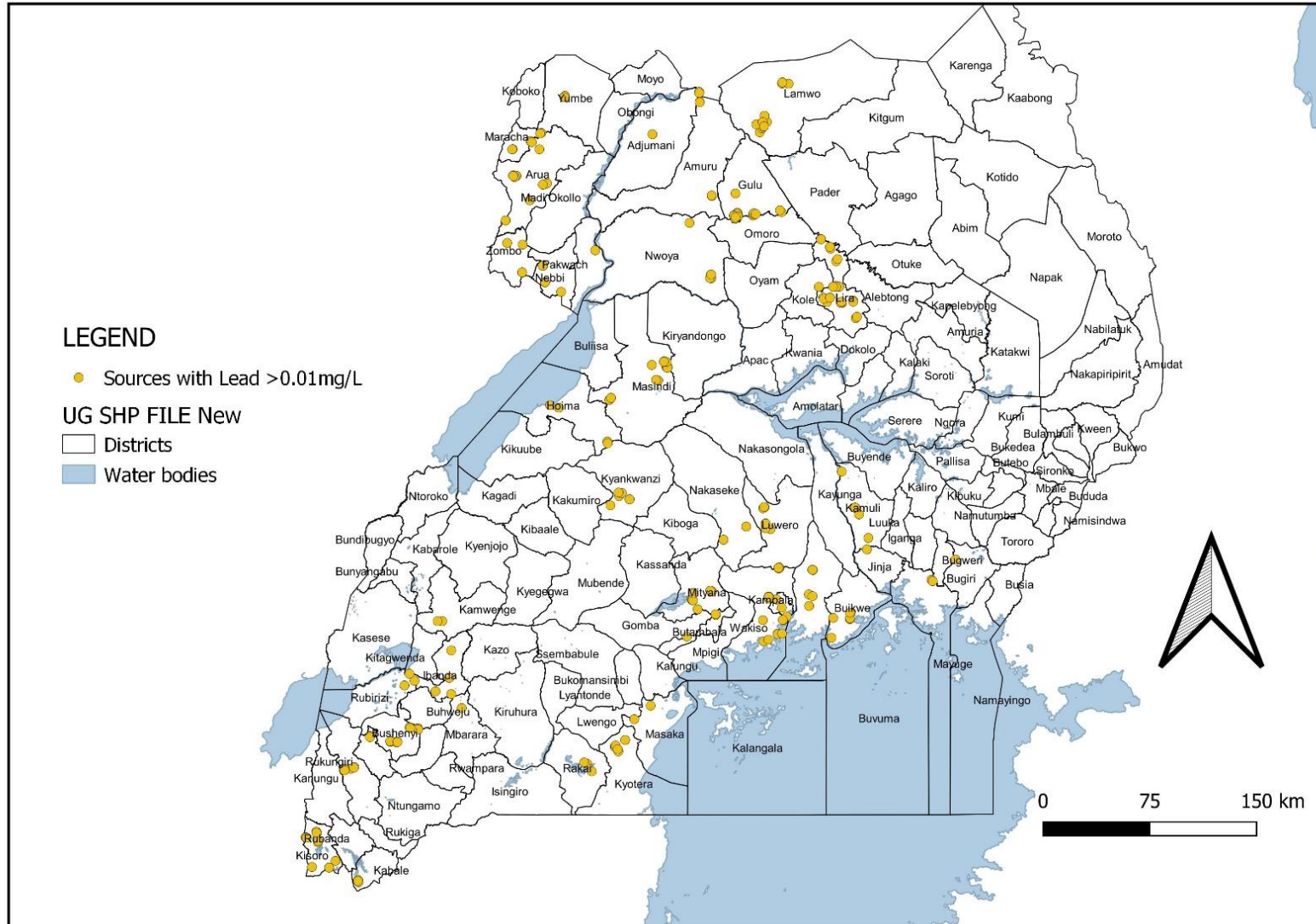
Preliminary Findings

Elevated lead (> 10ug/l) in drinking water sources in 32% of samples from rural sources and 22% in urban area.





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Solutions

1. Prevention for new systems: Test and use lead-free materials.
May establish third party verification of materials used in water systems.
2. All potential sources of lead in drinking water should be identified and quantified.
3. Take progressive remedial actions.
 - Replacement of lead containing materials.
 - Use of appropriate onsite and household technologies to remove lead from drinking water.

Whatever, the findings in existing water systems, do not stop the water from flowing.



Challenges

➤ **Inadequate Resources**

- Inadequate staff and facilities. Number of water points for testing are too many.
- Analysis of heavy metals is very expensive (Expensive equipment, expensive consumables; gases and standards and quality assurance procedures).
- Need to test materials for lead to confirm source; geogenic or leached from piping and fixtures (XRF equipment).
- High cost of replacement of lead-containing water system materials

➤ **Lack of Regulations:** Drinking water, water treatment filters etc.

➤ **Enforcement:** Materials regulation.



Next Steps

- Confirm preliminary results for sources already tested.
- Massive screening of water sources for lead contamination.
- Engage stakeholders to raise awareness and discuss solutions for existing sources.
- Engage relevant institutions to regulate materials for new sources.



Conclusion

- Lead adds another challenge to achieving the SDGs especially SDG 3 on Health.

- Is Uganda on track to achieve SDG 6?
SDG target 6.1 is 'proportion of population using 'safely managed drinking water services'. Safely managed drinking water is defined as the use of an
 - improved drinking water source,
 - located on premises,
 - available when needed, and
 - free of faecal and priority chemical contamination.

The 2 priority chemicals of global concern included for monitoring are arsenic and fluoride. E.coli is used as indicator for faecal contamination.