

Dead Rivers, Myth or Reality?

Human activities if unmonitored can destroy the environment under the pretext of development. The resultant impact can either be degradation or pollution. Pollution of water bodies is detrimental to community livelihoods as the water becomes unusable. High levels of pollution can lead to dead rivers.

What is Dead River?

A “dead” river is one that has ceased to perform its ecological functions, has become incapable of sustaining any form of life such as fish and aquatic plants. Its water are no longer suitable for domestic and agricultural purposes as a result of contamination or pollution of water bodies (e.g. lakes, rivers, oceans, aquifers and groundwater). Pollutants are directly or indirectly discharged into water bodies without adequate treatment to remove harmful compounds.

Water pollution affects plants and organisms living in water bodies. In almost all cases, the effect of water pollution is damaging not only to individual species and populations, but also to natural biological communities. Water is typically referred to as polluted when it is impaired by anthropogenic (human activity induced) contaminants and either does not support human use, such as providing drinking water, or undergoes a marked shift in its ability to support its constituent biotic communities, such as fish. In Zimbabwe the contamination of water bodies is due to various factors such as industrial activity, illegal mining activities which have resulted in the discharge of toxic chemicals such as mercury and cyanide into river systems as well as the discharge of raw sewerage and industrial effluent.

How does improper disposal of mining waste contribute to water pollution?

Waste from mining activities (topsoil, overburden, waste rock and slimes) has the potential of affecting the quality of the environment through loss of productive land, affecting ecosystems, and pollution of water bodies. Mine slimes dams can collapse or leach out acid or alkaline drainage impacting the environment, human health and safety.

A case of Yellow Jacket River pollution

Yellow Jacket River in Mashonaland Central can be classified as a “dead” river due to heavy pollution from Iron Duke Mine. Located in the Iron Mask Range, the river flows into Mazowe River posing serious health concerns for users downstream and even those thousands of kilometres away as Mazowe River is a transboundary water system that flows into the Zambezi River. The poor quality of the water has made it unsuitable for domestic or agricultural use, its suitability for industrial use is questionable.

Yellow Jacket River gets its name from the appearance of the water which is yellowish-brownish in colour due to heavy pollution from mining activities which have resulted in high water acidity levels and metal contamination from mine operations which started in 1914.

An analysis of the chemical parameters of Yellow Jacket River revealed the pH levels were as low as 2.4, which is close to that of vinegar.

To date, Yellow Jacket River is still being negatively affected by the now defunct Iron Duke mining activities through acid mine drainage from the evaporation ponds, waste rock dumps and slimes dam despite the fact that the mine has not been operational since 2009.

What is being done to solve the problem?

The University of Zimbabwe, Bindura University of Science Education and independent scholars have conducted a lot of research on Iron Duke Mine and Yellow Jacket River. The implementation of a vigorous and innovative adaptive management program to create a long term solution is needed. It is in this light that the Agency has been monitoring the water quality of Yellow Jacket River monthly since 2011 with the intention to remediate the mine so as to stop acid mine drainage into Yellow Jacket River. This should see the phasing out use of evaporation ponds and the neutralization of acidic soils and mine effluent using a watertight acid-proof tank system before final disposal.

What are the effects of water pollution?

Water pollution is very harmful to humans, animals, water life and the environment. The effects can be catastrophic, depending on the kind of chemicals, concentration of the pollutants and which locations they are dumped. Many water bodies near urban areas (cities and towns) are highly polluted. This is the result of both garbage dumped by individuals and dangerous chemicals legally or illegally dumped by manufacturing industries, health centres, schools and market places. Water pollution also contributes to the following:

- **Death of aquatic (water) life**
The main problem caused by water pollution is that it kills life that depends on water bodies. Dead fish, crabs, birds and sea gulls, dolphins, and many other animals often wind up on beaches, killed by pollutants in their habitat (living environment).
- **Disruption of food-chains**
Pollution disrupts the natural food chain, pollutants such as lead and cadmium are eaten by tiny animals. Later, these animals are consumed by fish, the fish are eaten by human beings and the food chain continues to be disrupted at all higher levels.
- **Spreading of diseases**
Humans are affected by this process as well, people can get diseases such as hepatitis by eating seafood that has been poisoned. In many poor nations, there is always outbreak of cholera and diseases as a result of poor drinking water treatment from contaminated water.
- **Destruction of ecosystems**
Ecosystems (the interaction of living things in a place, depending on each other for life) can be severely changed or destroyed by water pollution. Many areas are now being

affected by careless human pollution, and this pollution is coming back to hurt humans in many ways.

What does the law say?

The Environmental Management Act requires all miners to have slimes dams which are lined and boreholes for early detection of seepages and pollution of underground and surface water systems are necessary.

Water pollution on Global scale

Globally, water pollution is a major problem which requires ongoing evaluation, it has been suggested that it is the leading worldwide cause of deaths and diseases, and that it accounts for the deaths of more than 14,000 people daily, polluted drinking water is a problem for about half of the world's population. Each year there are about 250 million cases of water-based diseases, resulting in roughly 5 to 10 million deaths. In developing countries, 70 percent of industrial waste is dumped untreated into water where they pollute usable water supply. In addition to the acute problems of water pollution in developing countries, developed countries continue to struggle with pollution problems as well. (World Water Assessment Programme Report, 2013).

Communities must be on the lookout on for changes that take place in rivers close to them .EMA encourages communities to report such issues. Industries and mining companies must consider society and environment over and above their profiteering.

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