



Do We Know What Is In Our Water?

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Introduction:

The Government of Tanzania has embarked on a major sector reform process since 2002. An ambitious National Water Sector Development Strategy that promotes integrated water resources management and the development of urban and rural water supply was adopted in 2006. Decentralisation has meant that responsibility for water and sanitation service provision has shifted to local government authorities and is carried out by 20 urban utilities and about 100 district utilities, as well as by Community Owned Water Supply Organisations in rural areas. "No water, no life", is a common saying indeed one cannot imagine life without water? Depending on the surrounding or geographical location humans use various sources of water today.

In Dar es Salaam region sources of water include the following: Ocean water, Tap water, Kisima water, Rain water, Spring water, Bottled water.

Kisima water is obtained from an underground well; this water comes from underground streams.



Water quality. Water quality varies significantly within the country. In the semi-arid regions (including Dodoma, Singida, Tabora, Shinyanga, and Arusha), colour and turbidity levels become problematic during the rainy season. Rivers in the fluoride belt (including Arusha, Kilimanjaro, Singida, and Shinyanga regions of the Rift Valley, and extending to the Pangani and Internal Drainage basins) have naturally high fluoride concentrations. The waters of Lakes Tanganyika and Nyasa have overall good water quality except in the vicinity of urban areas where effluent and storm water cause local contamination, whereas the water quality of Lake Victoria is poor: high turbidity and nutrient levels lead to frequent blooms of algae and infestations of water weeds.

Controls of the quality of drinking water fall under the responsibility of local service providers at the point of water production. They refer to Water Quality Standards established for urban and rural areas in the 1970s.

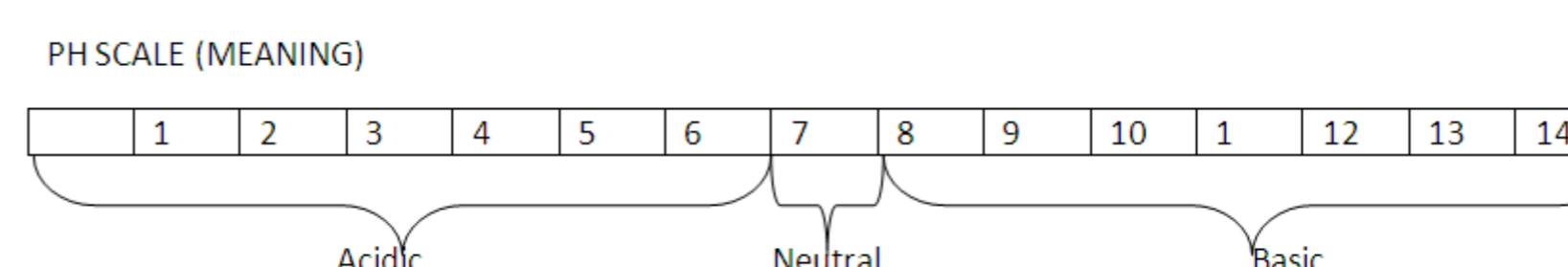


Results: The tables below show a summary of the results of the tests carried out.

Ocean water contains more solid matter both dissolved and undissolved hence it has the highest value of relative density (R.D)

Rain water tested basic having a PH of 8.16, a result which was not expected.

	Ocean water	Spring water	Rain water	Kisima water	Tap water	Uhai water	Kilimanjaro water
Insoluble Solids (g/l)	1.5700	0.0930	0.1503	0.2700	0.120	-	-
Dissolved Solids (g/l)	11.20	0.50	0.30	0.50	0.40	0.40	0.40
Relative density (R.D)	1.02787	1.00085	1.00082	1.00151	1.00165	1.00422	1.00003
Density (Kg/m ³)	1027.87	1000.85	1000.82	1001.51	1001.65	1004.22	1000.03
PH values	7.91	6.98	8.16	7.41	7.59	6.82	7.18
conductivity	21.ms	475us	72.4us	601us	341us	153.7us	146.7us



The results of relative density (R.D) were obtained as follows
Mass of density bottle Mo = 16.745g
Mass of density bottle + Distriected water =71.897g
R.D =
Then density was obtained as follows
Density in Kg/m³ = x R.D

MICRO ORGANISMS

Results here were obtained from other sources as indicated. The sources are available as given regarding each source of information. Harmful bacteria found in rainwater include *Streptococcus spp*, *Bacillus subtilis*, and *Neisseria spp* (metaoceanic.blogspot.com). Caliform bacteria is found in stream, ponds lakes and cisterns (www.harvesth20.com). Scientific studies show that 10-100 million viruses can be contained in a tea spoonful of sea water.

Conclusions:

The results show that all the water samples tested contain chemical substances or micro organisms. And chemical substance could be soluble or insoluble solids, liquids or gases. Rain water contains dissolved gases, dust particles and carbon. The residue left after filtering rain water was black due to carbon sources of this carbon include black smoke from old automobile engines and chemical industries.

Rain water also contains bacteria, algae, insect parts and radioactive material"

"And water sold in bottles such as Uhai and Kilimanjaro contains hazardous chemicals such as Bisphenol A (BPA) "Scientific studies show that 10-100 million viruses can be contained in a tea spoonful of sea water".

While using water from any sources be more it may contain dangerous chemicals or micro organisms. This can be dangerous as directly or indirectly to life. Also way try to use safe water.

Filtration with sand or a piece of cloth followed by boiling can help a lot, although distillation which is expensive would give the safest form of water to use

Our tests have been more quantitative than qualitative. Hence more qualitative tests need to be done to identify the chemical nature of substance or type of micro organism's water. This will help answer more questions, for example what makes rain water collected over the roof basic. Or what poisonous substance might there be in the water.

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Further information:

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RECOMMENDATION

Even water which looks clean to the eyes may be contaminated. Tap water sometimes contains insoluble solids so there is need to improve the quality of this water. Rainwater at the onset of the rain season can be dirty containing insoluble solids as well as bacteria. Methods of making the available water safer to use should be applied where possible. Filtration with fine sand removes insoluble solid particles, otherwise, sedimentation followed by decanting. But sedimentation takes much longer than we usually imagine.

And micro organisms are killed by boiling the water.

References:

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