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DRINKING WATER QUALITY AND IT'S NEED OF MANAGEMENT IN PRESENT SCENERIO

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Abstract

Water is an absolute necessity, a frightening phenomenon, a chemical freak and a benevolent companion. Man's relationship to water is one of the most paradoxical and contrary things in nature. Human beings cannot live without it yet water manifested as floods, storms and hurricanes at sea, is often fatal to man. Water can be beautiful and refreshing, but it can also carry water-borne diseases. Moreover, the waters of the seas are always going somewhere. This restlessness of the sea is a trait, almost as basic as its wetness. Whether on the surface or in the deep the waters of the ocean are constantly on the move-in journeys that may take centuries to complete. In recent years, as the demand for water has nearly approached in magnitude the available supply the concept that management of the quality of water is quite as important and obligatory as its physical management has since been widely recognized and strongly advocated throughout the world. This has led to a profound expansion of the goals of water quality management. This article represents the need of water management in the present era and also discusses about the drinking water parameters pre-defined by the various recognized institutions.

Keywords: Water Quality, Management, Drinking water standards



Introduction:

The earth continuously recycles water between the oceans and the land through evaporation and run off, distributes it in the form of precipitation coma river flow, and the movement of Creed and Springs, then fathers and stores it in l lakes, swamps, wetlands, underground aquifers, glaciers, clouds, forests-indeed, in all forms of life. Fresh water in particular, and lots of it, has always been essential to the viability and success of any civilization. Human beings are made up mostly of water, in roughly the same percentage as water is to the surface of the earth. Our tissues and membranes, our brains and hearts, our sweat and tears-all reflect the same recipe for life, in which efficient use is made of those ingredients available on the surface of the earth. We are 23 percent carbon, 2.6 percent nitrogen, 1.4 percent calcium, 1.1 percent phosphorus, with tiny amounts of roughly three dozen other elements. But above all we are oxygen (61 percent) and hydrogen (10 percent) fused together in the unique molecular combination known as water, which makes up 71 percent of the human body. Due to the increasing population the demand of drinking water increased at high level worldwide and due to the consumption of the water results depleting the ground water. Water quality is of utmost importance to human health. Although in the last decades, many efforts have been made at the government and public level to improve the quality of water and its proper management, but still there is an urgent need to make strict rules and regulations in this context.



Objective:

These are the objectives of the study-

1. To describe the standards parameters of drinking water.
2. To analysis the need of water management in the present scenario.
3. To describe the impact of drinking water quality on human health.

Source of data:

The article was prepared by the use of secondary sources of data. Various kinds of research article and books associated with the topic have been reviewed by the author. Help from some online resources has also been taken for collecting recent data.

Review of Literature:

1. **Mabrouk, M., Jonoski, A., H. P. Oude Essink, G., Uhlenbrook, S. (2018)** - Impacts of Sea Level Rise and Groundwater Extraction Scenarios on Fresh Groundwater Resources in the Nile Delta Governorates, Egypt.
2. **Durán-Sánchez, A., del Río-Rama, M.C.; Álvarez-García, J., Castellano-Álvarez, F.J. (2019)** - Scientific Coverage in Water Governance: Systematic Analysis. *Water* **2019**, *11*, 177. In this article, the results of the bibliometric analysis applied to research on “Water Governance” are presented in order to observe behavior patterns in the key areas of this field of knowledge (progression, most productive authors, etc.). This research is complemented with a co-citation analysis.



3. **Joshua O. Ighalo, Adewale George Adeniyi, Jamiu A. Adeniran, Samuel Ogunniyi (2020)**- In this study unique sources of pollution were identified for surface water, groundwater, and rainwater. The study provided key information that could influence of the choice of process type for cleaner production. A systematic literature analysis of the nature and regional distribution of water pollution sources in Nigeria, Journal of Cleaner Production, 2020, 124566,ISSN 0959-6526, <https://doi.org/10.1016/j.jclepro.2020.124566>.
4. **Chen Shiguang, Zhang Yu (2020)** - Water saving potential and economic viability assessment of rainwater harvesting system for four different climatic regions in China. This paper investigates reliability, water saving and benefit cost ratio of RWH system with different storage tanks and under three distinct climatic conditions (i.e., wet, average and dry year) at four cities in China.

Water quality:

The term *water quality* is a widely used expression, which has an extremely broad spectrum of meanings. Each individual has vested must be considered relative to the proposed use of water. From the user's point of view, the term water quality is used to define "*those physical, chemical, biological or radiological characteristics by which, the user evaluate the acceptability of water*". In the above context, it is worthwhile to mention that it has noted. A need to quantitative or give numerical values to the dimension of water know as quality derives from every aspect of



modern industrialized society. For the sake of man's health, we require by law that his water supply pure, wholesome and potable. The productivity and variety of modern agriculture requires that the sensitivity of hundreds of plants to dissolved minerals is water be known either water quality or nature of crop controlled. Accordingly, textiles, paper, brewing and dozens of other industries using water each have their own peculiar water quality needs. Aquatic life and human recreation have limitation of acceptable quality. In many instances, water is one of the raw materials of quality of which must be precisely known and controlled.

Thus, the uses that have specific quality requirements which the management must seek to protect are as follow-

1. Potable water supplies.
2. Recreation and aesthetics.
3. Fish, other aquatic life and wild life.
4. Agriculture uses include :
 - I. Farmstead water supplies.
 - II. Livestock water supplies.
 - III. Irrigation water supplies. And,
5. Industrial water supplies.

The other beneficial uses of water cited earlier but nor in the above list, such as navigation and receptacle of wastes is not demand any quality requirement but these uses used be carefully controlled so as not to impede the higher uses.



Water Quality Management:

Since the misuse of water is increasing continuously, in the present time there is a need to take appropriate measures for its management. In the absence of proper management, improper exploitation of water is done in various areas, due to which water pollution and various other problems have arisen. Therefore it can be said that water management is the need of the hour. Protection of multiple beneficial uses becomes an added objective of water quality management in the middle of the current century in the context of –

1. Intensifying competition for the limited water resources arising mainly from the many-sided needs of a burgeoning of population.
2. Emergence of industry as a major producer of wastes.
3. Lengthening of spectrum of wastes for beyond organic residues of life processes (refractory compound in particular).
4. The growing problems, in some regions of mineralized agriculture return waters. Recently, aesthetic of social goals of water quality have been added to the growing of objectives of water quality management.

Hence, the minimum objective of the quality control procedures is to maintain the quality of the resource pool at such a level that it can support the in-stream uses such as recreation, aesthetic and agriculture, can be directly used for irrigation and stock watering or upgraded for industrial or domestic use. We by current technology of water purification, both the objectives and technology of water quality management depend upon a knowledge that concentrations of each can be tolerated by various beneficial uses which managements seeks to protect.

Drinking water standards:

Groundwater has contains various kind of parameters like alkalinity, Nitrate, Fluoride, TDS etc. to use the water for drinking purpose it is must requirement that all these parameters should have in a standard quantity.

**TABLE NO. 01 :
STANDARD PARAMETERS OF DRINKING WATER**

S.NO.	PERAMETERS	BIS (1999) Mg/L	WHO (1984) Mg/L	ICMR (1975) Mg/L
1.	Alkalinity (as CaCO ₃)	200-600	100-200	-
2.	Hardness	200-600	100-500	200-600
3.	T.D.S.	500-2000	1000-2000	500
4.	Chloride	200-1000	200-600	200
5.	Nitrate	100	45-50	100
6.	Fluoride	1.0-1.50	1.0-1.50	1.00

Source: Central Ground Water Board, India

This standard quantity in water called drinking water standard parameters. There are various global recognized institutions who defined the standard parameters for drinking water quality. Some of these are World health organization (WHO), Bureau of Indian Standard (BIS) and Indian Institute of Medical science and Research (ICMR). In the given table no. 01 drinking water standard parameters of WHO, BIS and ICMR has been given. The permissible limit of each parameter by these Institutions has been given in the below table. If these parameter exceeds in the water than it is not suitable for drinking purpose and it is unhealthy.



Conclusion:

Based on the conclusion, it can be said that water is a very important natural resource for human life and its quality has a direct impact on human health. In the last decades, due to the increasing population, not only has the misuse of water increased, but it has also resulted in the decline of groundwater. Apart from this, the current technology has also negatively affected the quality of water through human activities. Therefore, in today's perspective, the management of groundwater is an absolute necessity.

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