

**BASIC VALUES  
EMBODIED IN INDIAN  
CULTURE AND THEIR  
RELEVANCE TO THE  
CONTEMPORARY  
SOCIETY**

*Editors :*

*Dr. Pankoj Kanti Sarkar*

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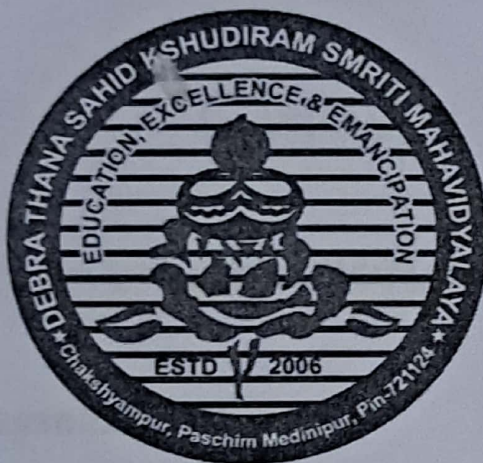
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# **Environmental values of some great Indian Rivers with special reference to Hindu Religious aspect and assessment of the pollution level of the Rivers with their Mythological Importance**

*Partha Pratim Pramanik*

## **Abstract**

Environment is a comprehensive term which in general refers to the mutual interactions between biotic and abiotic components of the life supporting layer in the Biosphere. River is one of the most important physical as well as a-biotic components of the Environment. The ancient civilizations like Indus Civilization, Harappa Civilization etc. were developed on the bank of Rivers. From the ancient period to Modern civilized era, Rivers always played crucial role in the socio-economic and political aspects to the human society or civilization. In India, several rivers were named after Hindu Goddesses. From the religious points of view, the rivers were to be adored in Hinduism. The most significant rivers in the faith are the "Saptanadi" across the nation; - Ganga, Godavari, Yamuna, Sindhu, Narmada, Krishna, Kaveri. According to the tradition of Hinduism, the practice of using Ganga water, during Worship to the God and Goddesses has been going on since ancient times. Rivers are very much associated with the Hindu rituals through various aspects. But in post-independence era the uncontrolled population growth and rapid rate of urbanization caused for the deterioration of water health quality almost all the rivers of India. The pollution level of the major Indian rivers caused for the loss of aquatic ecosystem. The present study emphasized on the water health quality of some important rivers in India (Ganga, Krishna, and Godavari) and also try to find out its mythological importance in the Hinduism.



## Introduction

India is a riverine country. In Hinduism, rivers are often personified as deities. In India there were several rivers named after Hindu Goddesses. In the **Rigveda**, there were mentioned the holy rivers such as the Sarasvati. The river Ganges is considered to be most sacred, and is Personified as the Goddesses Ganga. In Hindu believes, rivers always look after as the symbol of God. Here several rivers are named in association with their Goddesses name i.e. in female form. Historically, this was believed that Indus valley civilization was the worshipped by the rivers. Thus, it has been believed for ages that the progress of Indian civilization is due to riverbeds. Most of the important Megacity, Metropolitan city, Megalopolis or small towns were developed on the bank of several rivers in India. For example, Kolkata is located on the bank of Bhagirathi- Hooghly river (distributaries of Ganga river). Like the same as the Haridwar, Rishikesh, Kanpur, Jajmau, Allahabad, Mirzapur, Ghazipur, Patna, Bhagalpur, Baharampur etc. cities are located on the bank of Ganga and its tributaries and distributaries. The fertile loam soil best for cultivation, water transport best for communication, availability of water for industrial needs etc. were the reasons for the development of the cities along the bank of Ganga River.

### **Water Worship: -**

Water has been worshipped to the Indian Hindu society from ancient period to recent time. According to Hindu believed that strength returns after bath. Hindu believed that all ritual especially Worship to the God should be done after bath. In the Hindu culture of Worship, water is taken in hand while uttering a prayer.

In Puranas, this was founded that most elaborate form of worship of water. Here water were considered as the most



miraculous, holy, super natural and divine components of this planet. They have various Gods as their presiding Deities.

According to *Rigveda*, water was associated with the worship of *Vedic God Varuna*. The *Rigvedic* seers called the waters Goddesses as they quenched the thirst of their cattle. *Rigveda* Praises water as *Apsaras*.

### **Hinduism and Water:-**

Water in Hinduism has an important place because this was believed to have spirituality cleansing power. In Hindu believe rivers are considered as the symbol of God & Goddesses. Ganga water is used as an essential ingredient in the worship of all Hindu Gods and Goddesses. The Chhath Puja, the worship of Sun as God, is celebrated on the bank of Rivers. Ganga worship and Ganga subjugation are an essential part of Hinduism. This ritual is celebrated every year with fanfare. Most of the Hindu Family used Ganga Water for their everyday worship to the God and Goddesses. The second largest river Godavari is called Dakshin Ganga or the Ganga of south India. The water of Godavari River are also treated as holy water to the people of south India. Thus the Hinduism and water of Rivers are associated with each other prominently since the past.

### **Impact of Urbanization on the water health quality of the major rivers in India:-**

As mentioned, previous the uncontrolled population growth and size has been leading the cities of India most crowded. The top 10 cities of India, population density are mentioned below.

City	State/UT	Population Density (per sq km)
Delhi	Delhi	29259.12
Bangalore	Karnataka	12000
Hyderabad	Telangana	10477
Lucknow	Uttar Pradesh	1800
Pune	Maharashtra	9400



Ambhedabad	Gujrat	12000
Mumbai	Maharashtra	21000
Chennai	Tamilnadu	17000
Jaipur	Rajasthan	6500
Kolkata	West Bengal	22000

**Source:-** census of India, 2011

The above-mentioned figure has been depicted that how much population pressure existed within the city area in India. Better facilities for livelihood, employment opportunities, health facilities, unplanned and uneven development all over the country etc. attract people for huge level of rural-urban migration caused for over population in the city area.

This phenomenon has been leaded to generate huge amount of domestic liquid waste within the urban centers. There were various major and small-scale industries located at the peripheral area of the cities. The main commercial activities are also done within the city area. The domestic and industrial liquid wastes are discharged into the rivers through the existing sewage system of the cities. Most of the cities have no proper water treatment plants/systems for purifying the liquid waste, before discharge it into rivers. Thus, the rivers water is going to be polluted day by day due to high amount of mixing the contaminated liquid waste with fresh rivers water. The estimated values of some Physico-chemical and microbial parameters (such as pH, Temperature, Dissolved Oxygen (DO), Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Coliform (TC), Faecal Coliform (FC), Conductivity and Turbidity) of the various major rivers water in India justified the facts that the pollution level are increasing day by day.

The Aquatic Ecosystem of the rivers is at risk. The deterioration of water health quality caused for increasing the pollution level which endurance power of tolerance to the aquatic



lives. Besides the major sources of water pollution there are some Hindu rituals are also responsible for increasing the water pollution level of the rivers, such as throwing worship flowers in river and also immersing idols of God & Goddesses into the rivers. Though these reasons are occupying in few amounts but the role of it for polluting river water could not be defied. For example, the immersion of Durga idol in Bhagarati-Hooghly River at Kolkata or chhata pujo celebration on the various river banks across the country especially at Bihar caused for the water pollution.

### **Analysis of Water Quality of three major rivers of India (Ganga, Godavari and Krishna) through Water Quality index (WQI).**

The three major rivers of India, namely Ganga, Godavari and Krishna are selected for the said study purpose to understand the water health quality of the rivers. The rivers are highly associated with Hindu believe and culture. The selected three rivers are flowing through different direction of the country, i.e. Ganga flowing north to north-eastern direction, Krishna flowing at the western direction and Godavari flowing at the southern direction to the country.

#### **Ganga River: -**

The great virtuest river of India is Ganga River. Almost all the Temples in India are built up on the banks of Ganga river. Varanasi, Kansi, Venaras and all the holy sanctuary are located on the bank of it. Smita Jain in her study of "Analysis of Different Water Quality Parameters of Ganga River by Multivariate Tools" has been shown that the water health quality of Ganga River at its upper course is very much polluted. Through her observation in study suggested that „Water Quality Index identified the most polluted stations that are Kadaghat, Allahabad, Khurgi, Patna U/S, Bihar, Varanasi D/S (Malviya Bridge), U.P, Indrapuri, Dehri and Varanasi U/S (ASSIGHAT), U.P. "Through the cluster analysis of



water samples collected from river Ganga at its upper courses where the study was taken place, she further observed that “the different Stations showed a similarity of 99.99% between the stations Ganga D/S, Mirzapur, Varanasi D/S (Malviya Bridge) and Varanasi U/S (Assighat), U.P. Cluster Analysis for variables showed a 98.96% similarity of parameter BOD with WQI and 96.06% similarity between the parameters Total Coliform and Fecal Coliform After applied the Best Subset Regression Analysis we get the highest Mallow c-p value with high  $R^2$  for the parameters BOD, Nitrate, Total Coliform and Fecal Coliform” (Smita Jain).. The following dataset are the best supporting WQI value for justifying her above statement of observed study.

Stations	WQI
GANGA AT GARHMUKTESHWAR, U.P	65.05185
GANGA AT KANNAUJ U/S (RAJGHAT), U	71.59335
GANGA AT KANNAUJ D/S, U.P	70.38797
GANGA AT BITHOOR (KANPUR), U.P.	79.01873
GANGA AT KANPUR U/S (RANIGHAT), U	52.36029
GANGA AT KANPUR D/S (JAJMAU PUMPING STATION), U.P	81.42684
GANGA AT DALMAU (RAI BAREILLY), U	88.4441
GANGA AT KALA KANKAR, RAEBARELI	86.8147
GANGA AT ALLAHABAD (RASOOLABAD), U.P.	94.94404
GANGA AT KADAGHAT, ALLAHABAD	129.414
GANGA AT ALLAHABAD D/S (SANGAM), U.P.	93.85674
GANGA U/S, VINDHYACHAL, MIRZAPUR	91.51511
GANGA D/S, MIRZAPUR	96.65601
GANGA AT VARANASI U/S (ASSIGHAT), U.P	
GANGA AT VARANASI D/S (MALVIYA BRIDGE),	107.7238
GANGA AT TRIGHAT (GHAZIPUR), U.P	70.56398

**Table:1- Water quality Index of Ganga River at its upper courses of flowing.**



**Source:- Analysis of Different Water Quality Parameters of Ganga River by Multivariate Tools.** Smita Jain, July-August 2020; Journal of Science and Technology ISSN: 2456-5660 Volume 5, Issue 4, July-August 2020. DOI: <https://doi.org/10.46243/jst.2020.v5.i4.pp268-275>

### **Godavari River: -**

The following dataset is the result of research work done by the three researchers namely Indrani Gupta, Awkash Kumar, Chandrakant Singh, Rakesh Kumar. Through their study they have calculated the Mean and standard deviations for water quality parameters of 3 clusters in Godavari River. They have taken data from 2007 to 2011. The five years average estimated values of different physico - chemical parameters for understanding the water quality of Godavari River and by calculating its mean and standard deviation values, the results show that out of 30 locations on Godavari River in Maharashtra, 27 have “good to excellent” water quality, 2 have “medium to good” water quality and 1 has “bad” water quality „.

**Table- 2 Mean and standard deviations for water quality parameters of 3 clusters in Godavari River (2007- 2011)**

	Cluster 1		Cluster 2		Cluster 3	
	Mean	St dev.	Mean	St dev.	Mean	St dev.
<b>pH</b>	8.2	0.2	7.8	0.1	7.9	0.0
<b>DO</b>	6.4	0.2	5.7	0.6	6.3	0.0
<b>BOD</b>	2.8	0.7	7.1	3.3	10.5	0.0
<b>FC</b>	33.8	26.7	12.8	7.9	1132	0.0
<b>TC</b>	135.6	102.7	153.4	105.9	1907	0.0
<b>Am-N</b>	0.2	0.2	1.0	1.0	0.1	0.0
<b>Nitrate</b>	1.1	0.3	1.5	1.58	1.1	0.0



**Source:-**Detection and Mapping of Water Quality Variation in the Godavari River Using Water Quality Index, Clustering and GIS Techniques. Indrani Gupta, Awkash Kumar, Chandrakant Singh, Rakesh Kumar published on 3 March 2015.

### Krishna River:-

The following dataset as estimated by Neeraj Malik and Praveen Kumar in their research work for “Water Quality Index for Assessment of Water Quality of River Krishna at District Shamli, U. P” shown that the water quality of Krishna River, Shamli which was not suitable for human beings to their domestic uses even not for bathing. River Krishna is in very poor condition. According to their findings they critically pointed out that domestic and individual waste and other human activities especially lack of proper knowledge about water pollution are responsible for the deterioration of water health quality of Krishna River through the unscientific uses of Krishna River water.

**Table 3: Calculation of water quality index of Krishna River at sampling station Thana Bhawan**

S. N.	Parameters	Observed Value ( $V_a$ )	Standard Value ( $V_s$ )	$W_i$	Quality Rating ( $Q_i$ )	$W_i Q_i$
1	pH	7.22	8.5	0.1176	14.66	1.72
2	Total Hardness	22.0	300	0.0033	73.33	0.24
3	BOD	28	5	0.2	560	112
4	Alkalinity	243	200	0.005	121.5	0.6075
5	DO	6.0	5	0.2	89.58	17.916
6	Total dissolved Solids	395	500	0.002	79.0	0.158
7	Total Suspended Solids	16	500	0.002	3.2	0.006
8	Chlorides	40	250	0.004	16.0	0.064
				$\sum W_i = 0.53$		$\sum W_i Q_i = 132.7115$



**Source:-** Water Quality Index for Assessment of Water Quality of River Krishna at District Shamli, U.P.  
 Neeraj Malik, Praveen Kumar\* International journal of Science and Research (IJSR), ISSN:-2319-7064; SJIF (2020):7.803

## Conclusion

From the above study this is no doubtly said that Indian river and Hinduism beliefs and culture are highly associated with each other. Over the ages Hindu culture has been observed as part of Indian river system. But due to over population especially over crowded urban centers of India caused for the detritions of water health quality of the river system in India. This Environmental degradation caused for water pollution of Indian River system. The water quality Index (WQI) has suggested that mainly the river of north India is at risk. Lack of proper water treatment plant and also lack of the use of modern science and technology are main responsible for stopping to mix up liquid domestic and industrial waste with the natural fresh river water. So, the study further claims that if the river of India is at risk then the civilization especially Hindu believes and culture also is at risk.

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