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CASE STUDY ON KOTESHWAR RIVER (WARDHA)

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Abstract

According to mythological view, in India people worship River and consider water as a Holy liquid and allow human ash (i.e. Asthi) to flow into the water which leads to the contamination of water. The temple we visited is surrounded by a Holy river (i.e. Wardha River) where people come to worship in which they discharge Asthi's, Nirmalya, cloths, etc. which tends to increase water pollution. For restriction of pollution some short term, mid-term and long term preventive measures should be taken. Short term measure includes cleanliness drive, public awareness camp, anti-pollution laws, and policies and individual efforts. Mid measures includes microbes and plant magnetism. Long term measures include water treatment plant, plantation of eucalyptus trees, and construction of artificial ponds.

Index Terms: Asthi, Nirmalya, Tonsure.

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1. INTRODUCTION

Dirty and polluted water is the world's primary health concern and persist to pose threats to the survival of humanity and quality of aquatic life. Many water resources are more and more becoming vulnerable to pollution by toxic chemicals, dirt, garbage and pathogens. These have led to contamination of drinking water and making of aquatic habitat unbearable there by staidly degrading the quality of public health and aquatic life.

There have been several calls to reverse the situation both internationally and domestically, but it can be only attain through proper strategies and human efforts. Ameliorating the water pollution situation should be a collective effort right from the individual level.

1.1 About River

Paragraph The River we visited is known as Wardha River at Koteshwar mandir, near Rohini village, Taluqa/ Dist. Wardha. The Wardha River is one of the biggest rivers in Vidarbha region in India. The Wardha River joins the Wainganga River south of Chamoshri and forms the Pranahita River at Adilabad district, Telangana. Wardha origins in village Khairwani near Multai, Betul district of Madhya Pradesh. From the origin it flows 32 km in MP and then enters into Maharashtra. After traversing 528km, it joins the river Wainganga forming it into Pranahita, which ultimately flows into the Godavari River. As the river we visited is a small part of one of the biggest river in Vidarbha region, which is treated as a holly place. So many rituals are performing there and this is leading reason for pollution of water of that river in Mandir premises.

1.2 Physical Observations

Following are the some of the physical observation made during the river visit:-

- Colour of water- clear
- Depth of water level -
    i.   Depth at middle portion – 4'7"
    ii. Depth at end portions – 1'5"
- Pollutants –
    i.   Plastic bags
    ii. Plastic water bottles
    iii. Washing of clothes and utensils
    iv. Asthi visarjan

v.   Immersion of idols of God such as Durga Devi, Ganpati.
vi. Tonsure (removing of hair)
vii. Disposal of clothes used for rituals in river
viii. Disposal of garbage
ix. Disposal of nirmalya
x.   Washing of cattle's
xi. Wastage of cattle's
xii. Human waste

- Turbidity- 210 PPM

- pH by litmus Paper- Red litmus turned blue

2. Chemical Observations

Report on chemical examination of water for drinking purpose

Sr. No.	Test Parameters	Wardha River Koteshwar mandir, Kalamb	BIS Specifications 10500:2012 (Edn.2.2) Normal Values	
			Desirable limits	Permissible limits
1	Physical observations	Clear	-	-
2	Odour	Odourless	Unobjectionable	-
3	Turbidity(N.T.U.)	1.76	1	5
4	pH value	7.2	6.5-8.5	No relaxation
5	Chlorides	40	250	1000
6	Nitrates	27	45	No relaxation
7	Total hardness	120	200	600
8	Alkalinity	80	200	600
9	Iron	0.011	0.3	No relaxation
10	Fluorides	0.061	1.0	1.5
11	Total dissolve solids	225	500	2000

Table-1: Chemical Result of water sample

Above table represents the chemical test result of a water sample we had collected from the river we visited. The above result states that ,"The tested water sample is chemically fit/ potable for drinking purposes on basis of analysed parameter only. However this water source can be used for drinking purposes only after proper disinfection and ascertaining its bacteriological quality.

3. Preventive Measures

- SHORT TERM
    i.   Cleanliness drives.
    ii. Public awareness camp
    iii. Anti-pollution laws & policies
    iv. Individual efforts
- MID TERM
    i.   Implementation of Microbes-
    Traditionally indicator micro-organisms have been used to suggest the presence of pathogens. Today however we understand a myriad of possible reasons for indicator presence and pathogens absence or vice versa. In short there is no direct correlation between numbers of any indicator and enteric pathogens. To eliminate the ambiguity in the term 'microbial indicator', the following three groups are now recognised.

a. General microbial indicators
b. Faecal indicators
c. Index organisms and model organisms.

ii.   Plantation of eucalyptus trees-
The research says that tress with high transpiration rate such as eucalyptus can be easily used to clean the environment of wastewater. These trees usually grow in waste water which will produce timber and fuel wood foe the upcoming generation, as well as absorbs the carbon from the atmosphere. Eucalyptus have long been blamed for their thrust for ground water, owning to their long tap roots and there is scientific evidence that this species could dry up water bodies. According to the scientists, developing green belts around cities with forest trees under waste water irrigation will also help review the ecological balance and improve the environment.

- LONG TERM
    i.   Water treatment plants (plant Magnetism)-
    A hydro magnetic system, is a hydro technical structure installed in the river and is described as a running/flowing type of magnetic water treatment plant. According to search, analysis of water that had passed through the hydro magnetic system the particles in the water were much smaller than in un-magnetised water. The scientist concluded that under the influence of magnetic field, some particles splits an form smaller structures, while some dissolve.
    ii.   Green bridge technology-
    The green bridges are of varying lengths depending upon width of river. The installation of green bridge technology consists of two metal screens installed on the upstream side of the bridge to prevent the solid waste entering into the system. Plantation of local grasses, lemon grass, typha, etc. was done to aid the treatment process. The waste water passes through the green bridge filter which is a combination of coconut coir mats, sand, gravel and boulders. The floatable and suspend able solids are trap which is reduces the turbidity of flowing water substantially.
    iii.   Provision of nets-
    Provision of nets at the bank of the river and near the bridges to collect the Nirmalya (flowers, leaves, etc.) and other floating stuff (plastic bags, clothes, disposable plates, etc.) thrown in the river during the performance of the rituals.

    iv.   Construction of artificial ponds-
    Constructing artificial ponds near the bank of the river for the purpose of rituals to avoid the

    pollution of water and proper management of all rituals such as Asthi visarjan, pitrudosh, kalsarp, etc.

3. CONCLUSION

The rate of pollution is increasing day by day and among this water pollution is going to be leading problem in future that everyone has to go through it. Water pollution has many forms, all of which are damaging and none of which are less important than the other. The site we visited is mainly polluted due to rituals performs there such as Asthi visarjan, Nirmalya, emersion of idols etc. which can be prevent by implementing some short term (cleanliness drives, public awareness camp anti-pollution laws and policies, etc.) mid-term (implementations of microbes and plantation od eucalyptus trees) and long term(magnetic treatment plant, construction of artificial ponds, provision of nets, etc.). Last but not the least, the truth hard to admit we all can agree on that, water pollution is a stupendous product of human consumption and their inactiveness.

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