

STUDY OF POLLUTION LEVEL IN RANCHI BADA TALAAB

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Abstract:

Water pollution is the contamination of water bodies as a result of human activities. Water bodies include mainly lakes, rivers, oceans, aquifers and groundwater. The purpose of this study was to find out the different sources which increase the water pollution level of Ranchi Lake. This cross sectional study was done at Bada Talab of Ranchi city. The uncontrolled growth of water Hyacinth was found to be the major cause for the water pollution level of this pond. This study was done by a questionnaire method followed by face to face interview of the local people of that district living nearby. The questionnaire was specially designed for interview. Through this study, it was found that 70% of water was polluted by water Hyacinth, 16% of water was polluted by dumping of animal wastes, 9% of water was polluted by washing of vehicles and clothes 5 % of water was polluted by religious practices and other human activities. Thus, through this study we can conclude that the Ranchi Lake is highly polluted and we need to take strong measures to revive the condition of the Ranchi Lake.

Keywords: Water Hyacinth, Water Pollution, Sources of water pollution

Need and significance of the study:

Every living being on Earth needs water to survive. Many people are unaware of the effects of water pollution and they have no knowledge about the diseases caused by the sources of water pollution..

Through this study, we are planning to create awareness about water pollution and its sources by assessing knowledge, belief and source of information among the people living in the areas of Ranchi district.

INTRODUCTION:

Water is a source of life and regarded as the most essential natural resources. According to Alrumman SA (2016) and Briggs D (2003), Water pollution occurs when unwanted materials enter into water, changes the quality of water and harmful to environment and human health. According to World Health Organization (WHO), 80% diseases are water borne (Khan N et al, 2013).3.1% deaths occur due to the poor and unhygienic quality of water (Pawari MJ, 2015).

According to Juneja T et al (2013) discharge of domestic and industrial effluent wastes, leakage from water tanks, marine dumping, radioactive wastes and atmospheric deposition are major causes of water pollution.

According to Owa FD et al (2013) human health is affected by the direct damage of plants and animal nutrition. Water pollutants are killing sea weeds, molluscs, marine birds, fishes, crustaceans and other sea organisms that serve as food for human.

According to Kerketta P. et al (2013) the physico- chemical properties of river and pond water of Ranchi city is not suitable for drinking purpose.

Study Area Description:

The Bada Talab is situated in the heart of the Ranchi city. It is spread over 52 acres. Located at the base of the landmark Ranchi Hill, which is situated over 2100 feet above sea-level was built by a British agent, Colonel Onsely, in 1842 with the help of prisoners to maintain the groundwater level of the city. The average depth of water is 2.2 meters. Geographically, Bada Talab is located at latitude 23°22'04" N and

longitude 85°19'05" E. The Bada Talab is surrounded by Chhoti Masjid, Shiv Mandir and Surya Mandir(Source:RMC).

Materials and Methods:

A cross sectional study was carried out on the people living nearby at Bada Talab situated in Ranchi city. In this the data was collected through survey method and self made questionnaire which was done in 100 local residents. These questions were related to the sources of water pollution.

A sample is a small proportion of a population selected for observation and analysis. Self-made questionnaire on water pollution was used by investigator. In the present study, the survey method was applied to collect the data. For the purpose of data analysis, the raw scores obtained or the water pollution questionnaire was tabulated.

According to this survey, it was reported that the biggest polluting factor was the growth of water Hyacinth on water bodies.

Questionnaire: During the survey method, following questions were asked:

Q1. Does aquaculture cause water pollution?

Ans. Yes.

Q2. In which form detergents pollute water?

Ans. Through washing of clothes, bathing of animals as well as people and vehicles.

Q3. Is water favourable for animals to drink?

Ans. No.

Q4. Which aquatic weed is mostly responsible for water pollution in pond?

Ans. Water Hyacinth.

Q5. Are sewages dumped in the pond?

Ans. Yes.

Q6. What is the rate of fish production in pond?

Ans. 30 kg/day approx..

Q7. How many times cleaning of pond is done?

Ans. Once or twice a month by Ranchi Municipal Corporation by bleaching powder.

Q8. Is there tree plantation along the side of the pond?

Ans. Yes.

Q9. How often the fishes are killed?

Ans. Fishing is done every day by the people.

Q10. Is the water used for drinking supply and household purpose?

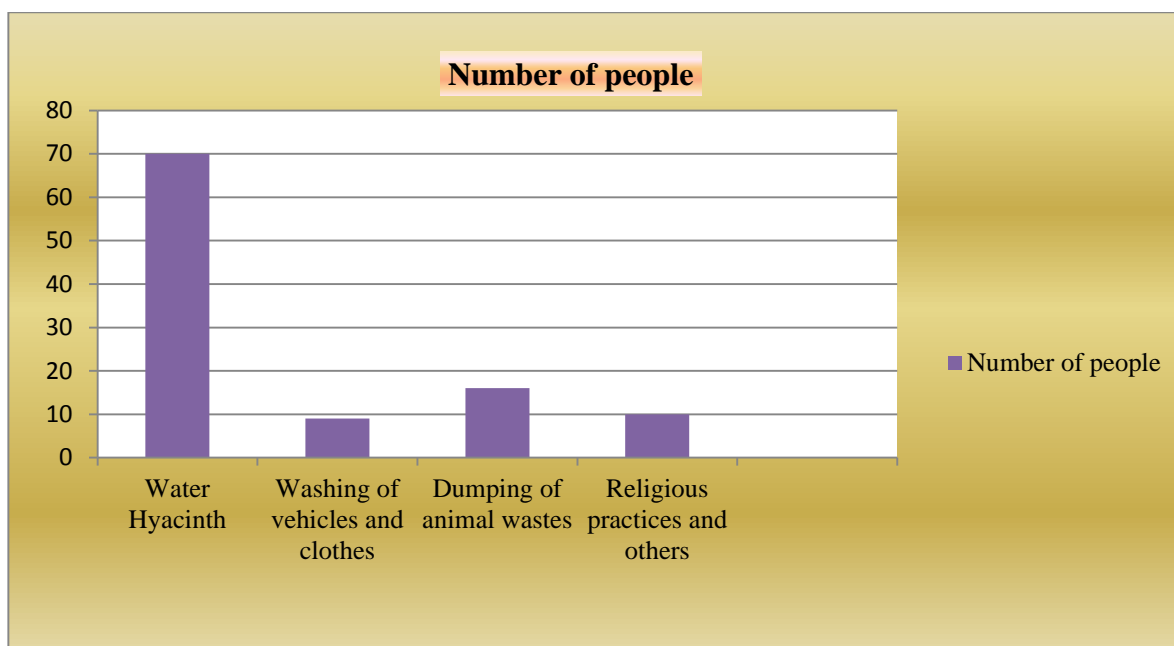
Ans. No.

Statistical data analysis:

The study was conducted at Bada Talab of Ranchi district of 100 local residents living in that area nearby.

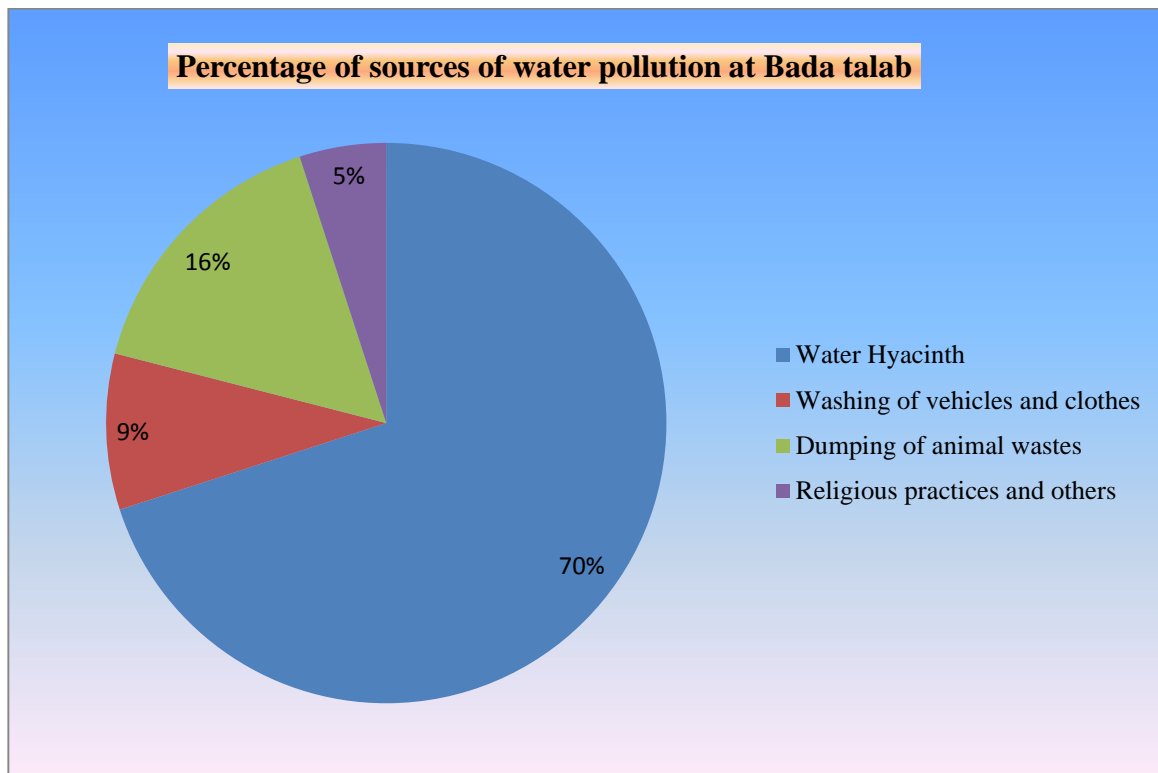
People Wise Distribution:

Out of 100 people asked, 70 people told that water Hyacinth is most responsible for pollution of water of that lake, 9 people told that they wash vehicles and clothes in that water, 16 people dump animal wastes in that water and 10 people use that water during festivals and other activities.



Percentage Wise Distribution:

Through this survey it was found that 70% of water is being polluted by Water Hyacinth followed by washing of clothes, dumping of animal wastes, religious practices and others being 9%, 16% and 5% respectively.



Result and discussion:

We have done the study at Bada Talab of Ranchi district, Jharkhand. The data was collected from about 100 people living in that area nearby. The survey was done through face to face interview and questionnaire method. In this survey, it was found that 70% of water pollution was due to the growing of Water hyacinth, 9% was due to dumping of animal wastes, 16% was due to washing of clothes and vehicles and the remaining 5% was due to religious practices and other human activities.

Through this cross sectional study, it was found that water of Bada Talab is highly polluted.

Sources of water pollution	Number of people	Percentage
Water Hyacinth	70	70%
Washing of vehicles and clothes	9	9%
Dumping of animal wastes	16	16%

Religious practices and others	10	5%
TOTAL	100	

Conclusion:

Water Pollution is a topic which is very concerning. The polluted water of Ranchi Bada Talab is a cause of death of fishes and other diseases. Polluted water not only harm humans but also corrodes nature. Water of Ranchi Bada Talab is highly polluted and the main source is Water hyacinth and dumping of household wastes. Due to high pollution, the colour of water is turned dark green and there is high growth of Water Hyacinth. To combat this problem and check the water pollution at regular basis, Ranchi Municipal Corporation is taking a number of steps to clean the pond regularly. But we should also spread awareness in people to decrease water pollution of Bada Talab .

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