

# A Survey on Public Awareness Towards Sugar Mills' Waste Water

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## ABSTRACT

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Not only India but also the world has been facing the shortage of ground water and the increasing pollutants into the ground water due to the rapid globalization and industrialization. Sugar mill is considered as one of the polluting industries that create ground water problems due to the untreated effluent/waste water when they release it into the nearby areas. The purpose of the present study is to investigate to know the existing awareness of public on the specific views and attitude towards the sugar industries that are located nearby their villages. The results reveal that age of respondents has a significant correlation with the awareness about sugar mill's waste water. Aged people (50+) are more conscious about the impacts of sugar mill's waste water / effluents on the lives of people. The level of education have significant correlation with the higher level of awareness. The people of all age group believe in environmental awareness helpful in waste water management and effective control system. It helps the dedicated researchers to conduct new studies over waste water and its treatment via physico-chemical analysis as well as use of natural adsorbents to remove heavy metals from waste water of sugar mills as treatment.

So, proper awareness among youths as well as old people along with policy makers can truly solve the problem of contamination existing into the ground water via developing the right perception towards the increasing demand of water in common public. If properly waste water/effluent treated by sugar mills can help the country in twice mode ie helpful in growth of the country and secondly in public health issues.

**Keywords :** Groundwater, Pollutants, Wastewater, Awareness, Treatment

## Introduction

Each element of environment has been polluted due to the increasing number of industries at the fast rate

without proper supervision and control over the effluents/waste water discharging from the industries.

Today's globalization-pattern leads the modern world on the super highway to fast industrialization and

causes a serious environmental problem via polluting the water through the uses of organic and inorganic chemicals. All stages of sugar production, the discharging waste water contains a high level of suspended solids, organic matter, oil, and chemical; therefore, it is supposed to be one of the most water polluting industries. Sugar industries are marked as the larger users of water. So, they cause the water pollution in plenty amount through its discharge of harmful effects from sugar industries usually around 5000 cubic metre per day by a single industry. So, it is considered as a burning issue and needs some other alternative and effective low cost of treatment methods.

Sugar industry occupies a unique and prominent place in the industrial map of India and is always considered as one of the pioneering food industries. Upon which other industries also rely on, the main product of sugar industry is white sugar, while alcohol, ethanol, liquid carbon dioxide and household textile are the by-products. Sugar industry, being one of the largest industries, now-a-days faces a plenty number of crucial problems and passing through its critical time due to the negative observation about its unhealthy and adverse impacts upon the natural quality of water, soil, air and above all a danger to animals and human health. The waste products of sugar industries have detrimental and hazardous impacts upon nearby areas of sugar industries. It is well known fact that a large number of chemicals are used in the processing of white sugar- production.

### **Need for and Importance of the Study**

The public awareness towards the environmental protection is a weapon to make the common public aware about the environmental changes that are taking place worldwide, it is considered a right approach to protect the quality of environment. Sola (2014) rightly stated that lack of environmental

knowledge is like an obstacle in achieving a sustainable future for human kind at global and local levels. In this line, Mukhtar et al (2016) reported that the public awareness gives a sense of responsibility to keep natural resources safe for future generations. They further reported that environmental problems such as waste water and waste water management are among the world's most serious problems. Therefore, public awareness about environmental protection and participation are essential for environmental protection. UNEP (2006) stated that public awareness and access to information are found to be critical to supporting government policies and laws. In 2006, Mohamed et al reported that environmental protection is one of the most important and fundamental goal of UNESCO- UNEP (1978) that is helpful for a person to be very active in solving environmental problems through awareness, methods, skills and participations etc. Minkova (2002) pinpointed that the necessary tools to generate public awareness towards environmental protection are- mass media, magazine, posters, public meetings and hearings, publicity merchandise, social events, role playing and community theatre and above all internet.

The present endeavor based on public awareness has been selected and carried out with a view to further strengthen the data base on the ground water quality nearby areas of sugar industries. So that, appropriate strategies with lowest cost might be adopted right from the planning level to control the contamination of the ground water.

### **Objectives**

1. To understand the concept of public awareness about environmental pollution
2. To study about the major polluting industries
3. To develop the questionnaire for public awareness about the waste water pollution due to sugar industry

4. To assess the existing awareness level of public about the ground water contamination due to sugar industries and its effect on health

#### The Concept of Public Awareness about Environmental Pollution

Public awareness towards waste water being released from the industries especially Sugar industry has a key importance factor to make our environment safe. Usually, untreated waste water or effluent is discharged from the sugar industry which make a crucial problem to the nearby area's residents. Day by day, the level of ground water contamination is increasing and its result into the health issues of common people. So, it has become the duty of each villager to have a look over the waste water being released by sugar industry. they should be fully aware about their right to healthy life and should have a direct or indirect approach to the higher authorities, to whom they can report about the waste water when released untreated on the basis of first sight observation.

#### The Major Polluting Industries

the Major Polluting Industries are Aluminium Smelter, Dyes and Dye Intermediates, Petrochemicals, Thermal Power Plant, Caustic Soda, Fertilizer, Drugs and Pharmaceuticals, Zinc Smelter, Cement, Integrated Iron and Steel, Pulp and Paper, Copper Smelter, Tanneries, Oil Refineries, Distilleries, Pesticides, and Sugar

Source- Central Pollution Control Board, 2019

#### Development of Questionnaire

The following questionnaire having 10 dimensions along with general information about the respondent was used to acquire the right level of public awareness about the water concerns. The 10 dimensions of this questionnaire was developed by

the researcher on the basis of pilot study conducted on the small group of concerned population. Finally, 10 items were selected for assessing the public awareness level, each item refers to one dimension of public awareness. Hindi version of tool was used due to Hindi speaking region / area nearby sugar mills. Respondents can easily understand the questionnaire due to language barrier free approach. They are as follows-

1. Awareness about sugar industry
2. Changes in ground water
3. Impact on ground water
4. Health issues
5. Concerns about contamination
6. Participation in awareness programme
7. Sugarmill responsibility
8. Reporting about ground water
9. Government Role
10. Willingness to Participate

#### Methodology

The primary intention of the study was to explore the awareness level towards ground water contamination among their villagers nearby the selected sugar mills. The adopted methodology and procedure of the present study are as follows-

Sample – On the basis of existing health issues usually reported in newspapers, we select two sugar industries situated in Meerut district of UP. Bajaj Hindustan Sugar Industries Ltd in Kinuani, Meerut and Daurala Sugar mill, Meerut were selected on the basis of convenience to visit on regular basis. Both sugar industries have prime importance in the production of sugar and other by-products. Even though, they are not considered good among people due to water borne diseases and its effects upon the health of nearby villagers and other complicated health issues as usually reported by common people. Now, this is a need to find out the reality of the villagers towards the awareness about the ground

water contamination, health issues and public policies along with participation in public awareness programmes.

### Participants

42 villagers were randomly chosen from Daurala Sugar Mill's nearby areas whereas 36 respondents were randomly chosen from Bajaj Hindustan Sugar Industries Ltd.'s nearby areas to conduct the study about the public awareness level of ground water contamination and its effects on the human physical health.

### Scoring

The questionnaire has 10 items and each one has two options YES/NO. the respondent is bound to respond only anyone of the two alternatives. It helps in the right level of public awareness towards the ground water contamination due to sugar mills' waste water release. The mean score on each item reflects the existing trend of the awareness level among the villagers.

### Results and Discussion

On the basis of the survey conducted by the researcher around Daurala Sugar Mill engages 42 villagers, revealing a high level of community awareness (92.9%) about the mill's presence. Concerns about changes in groundwater quality are expressed by 64.3% of respondents, with 33.3% strongly agreeing on the mill's impact. Health concerns are raised by 19%, highlighting potential risks associated with sugarmill's releasing effluents. The study emphasizes the need for enhanced community engagement initiatives, considering that only 42.9% of respondents participated in awareness programs. The willingness of 54.8% to participate in efforts addressing the mill's impact provides an opportunity for collaborative initiatives, emphasizing

the complexity of the burning issue and the necessity for a multifaceted approach.

Similarly, on the basis of the survey conducted around Bajaj Hindustan Sugar Industries Ltd engages 36 villagers, with 91.7% exhibiting awareness of the mill's presence. Changes in groundwater quality are acknowledged by 66.7% of respondents, with 12.5% expressing health concerns. Despite high awareness, 70.8% had not participated in awareness programs, revealing a gap in community engagement. Similar to Daurala Sugar Mill, 54.2% of respondents are willing to participate in efforts to address groundwater quality concerns. The diverse opinions within each community underscore the need for adapted strategies that consider specific dynamics, with collaborative initiatives involving community members, local authorities, and sugarmill management playing a pivotal role.

### Conclusion

On the basis of the obtained findings, it is concluded that older aged people are found more conscious about the environmental awareness, while higher level of education has a positive correlation with the level of public awareness about water pollution due to sugar mills' effluent/waste water.

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