# Sustainability Of Water Bodies In And Around Sangli-Miraj-Kupwad Industrial Area – A Review.

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***Abstract:*** Present case study was emphasized on the availability of the water bodies in the study area. The initial sampling of water bodies shows that 86% of samples have excessive turbidity and 48% have excessive totaldissolved solids (TDS).The accumulated aquatic weeds, depleted oxygen in water bodies and day by day decreasing quantity of fishes in aquatic ecosystems of study area clearly indicates that water has been polluted. The initial survey was carried out to assess the impact of drinking water quality. It was observed that people complained about hair fall, premature graying of hairs, yellowish teeth, typhoid, joint pain, diarrhea and constipation, which were major diseases prevailing in the study area. Further detail study is required to find out exact cause, effect and remedy on disturbed aquatic ecosystem.
**Key words:** Sustainable water bodies, Sangli-Miraj-Kupwad industrial area, human health.

## I. INTRODUCTION

The improper disposal of industrial effluents is a major problem even when these are technologically handled for particular standards. These effluents are not always passed with pretreatmentand with applicable toxic-pollutant-effluent limitations or prohibitions. The consequence of these improperly treated effluents is a high degree of environmental pollution, leading to serious health hazards (Okereke et al., 2016).

Natural water sources are exposed to contamination with faecally-contaminated items. Water from these sources are not usually treated at all or treated insufficiently to ensure acceptability according to international guidelines (WHO, 1983). Natural waters are therefore never pure; and as water being a universal solvent it dissolves many chemical substances and carries many impurities in suspension.(WHO, 1998). A large proportion of the rural population in the developing world takes water from natural sources directly for drinking (Okereke &Nnoli, 2010).

This paper is aimed at reviewing the environmental impacts of untreated or inadequately treated industrial wastewater effluents in Miraj MIDC area.

Concentration of water samples of wells (bore well and dug well) from Kupwad MIDC region and Miraj MIDC region are exceeding BIS Standard limits for EC TDS, chloride, sulphate, BOD, COD, Copper, Mercury, Lead, Arsenic. Surface industrial drain shows high TDS, Sulphates, BOD, COD, Ferrous, Lead, Total hardness values. The contaminants from industrial effluent further on percolation in soil may mix with the ground water aquifer causing contamination of ground water **(**Pawar P.R.et al., 2015). Ground water quality of Sangli-Miraj-Kupwad industrial area shows exceeding concentration of Sodium, Chloride, Nitrate, DS and heavy metals (like mercury, lead, cadmium and Arsenic) than the standard limits. The correlation analysis results shows that EC and TDS are highly correlate with DS, magnesium and chloride. The regression method for analysis of ground water quality for Sangli Miraj Kupwad Industrial area is shows in the form of mathematical equation between EC and TDS, TDS and Chloride in and Ferrous and Mercury. (Sadamate et al. 2015). Comparison of Physico-chemical parameters of groundwater under study with pH, conductivity, TDS, total alkalinity, total hardness, Calcium hardness, Chloride, Nitrate, Sulphate, Phosphate, DO, free CO for march 2012 and March 2017 reveals that the groundwater quality of Savali village nearby Kupwad MIDC is slowly declining, mainly due to industrial effluent, which is percolated through ground and proper waste water management by the industries is the only solution to avoid future water pollution disaster(Kupwade R.2017).

Collected water samples from specified location of Krishna river like Sangli city, Miraj city, Bhilwadi, Walwa, Bahe and analyzed for various physicochemical properties. It has been observed that water in River Krishna is highly polluted and it is unfit for drinking purposes (Patil M. V.et al.,2015). Groundwater samples from Sangli-Miraj Kupwad Industrial Area MIDC, Maharashtra, India were collected from 17 different borewells and analyzed for various parameters. It was observed that mercury content was exceeding limit at some sampling points and Dissolved Solids (DS) exceeding limit at all sampling points (Jadhav V.B.et al., 2017). There is mixing of domestic and industrial effluent in Miraj MIDC area, which results into dilution of industrial effluent to extent and hence proper treatment of industrial effluent does not take place (MITRA 2014).

**Current status of Krishna river pollution:**

Discharge of untreated 5 Crore 65 liters of sewage and one Crore litres of effluent everyday from Sangli-Kupwad city and nearby villages into river Krishna which depletes the dissloved gases from water body resulting into death of fishes. Hazardous chemical containing effluent enters into water body and kills useful bacteria from water (Feb 2018 Loksatta)

## II. STUDY AREA:

The area selected for study was Miraj industrial area of Miraj (16° 52' 0" North, 74° 34' 0" East) in Sangli District (M/S, India). This industrial area is with 2 CC units (consent committee units) with RED category of (25 to75Cr Investment) with total Working Units of 256 industries like Auto Component, Animal Feed plants, Cement articles, Cutting Tools, Chemical, Pharmaceutical, Educational,Electrical, Electronics, Heating, Material Handling, Pollution Control & Gym Equipments, Dairy, Foundry, Food, Plastic & Rubber Products, Fabrication, Furniture, Machine Shop, Printing, Packaging units, Powder Coating & Electroplating, Special Purpose Machine, Sugar Machinery & Spares, Stationary, Surgical Instruments, Turmeric, Testing Machines, Textile units upto 31.3.2016. (Sangli-Miraj MIDC manufacturer Association, SMMMA)

## III.MATERIALS AND METHODS:

- The initial survey was carried out to assess the impact of drinking water quality with questions related to current usage of water bodies, sources of contamination, effect of polluted water body on human health.
- Initial sampling of wells was done and collected water samples analyzed for turbidity and total dissolved solids (TDS).
- Turbidity measured using turbidity meter and Total solids measured as residue left after evaporation of filtered sample.

## III.RESULTS:

**a. Current status of water bodies in study area:**

The initial survey of water bodies was carried in study area. It was observed that untreated sewage water and industrial effluents are directly discharged into natural water bodies. It resulted into Eutrophication (Pictue-2).

**b. Water quality Assessment:**

The initial sampling of water bodies shows that 86% of samples have excessive turbidity and 48% have excessive total dissolved solids (TDS).

**c. Survey:**

It was observed that people complained about hair fall, premature graying of hairs, yellowish teeth, typhoid, joint pain, diarrhea and constipation, which were major diseases prevailing in the study area (Pictue-1). Further detail study is required to find out exact cause, effect and remedy on disturbed aquatic ecosystem.

**Picture-1**: Discussion with local people during initial survey.

**Picture-2:** Current status of water bodies in study area.

## V. CONCLUSION:

Discharge of untreated sewage and industrial effluents in water bodies resulted in complication in health and hazards of local people and aquatic flora and fauna. Further detail study is required to find out exact cause, effect and remedy on disturbed aquatic ecosystem.

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