

**Education and Society**  
(शिक्षण आणि समाज)

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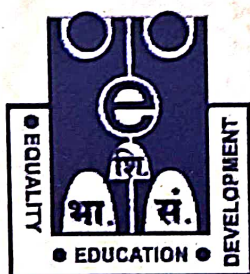
# **Education and Society**

Since 1977

**The Quarterly dedicated to Education through Social Development and  
Social Development through Education**

**February 2023**

**(Special Issue-1/ Volume-III)**



**INDIAN INSTITUTE OF EDUCATION**

**128/2, J. P. Naik Path, Kothrud, Pune - 411 038**



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## Education and Society

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# Present Geo-Environmental Status of Rankala Lake in Kolhapur City

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## Introduction:

In recent years with unprecedented population growth and intensive agricultural practices, ground & surface water is been on increasing scales. All over the country there are many water bodies which support human settlements in every walk of his life, water bodies such as springs, streams, rivers, lakes, ponds, bog etc. are playing prime role to supply the water for drinking, washing irrigation, industrial purpose, generating electricity etc. Every water body has its importance in using its water. Lakes has a special role to play in life of humankind. Lakes have supported mankind since historical period. However, the use of lake water is for drinking and agricultural purpose, but not all lakes are supporting for the same use. Because by virtue of some particular property and value every lake every lake performs, function. The function depends upon location, size, and various ecosystem characteristics of lake & of course the degree of human interference in the matter of water pollution. Kolhapur district having advanced network to drainage system with Bhogavati and Panchaganga River. The demand of water by the fast growing and Kolhapur city is tremendous. The major part of this requirement by the city partly fulfills by pachamanca river water system. Particularly for industries, irrigation, and community supply. The Rankalalake in Kolhapur city have a special purpose and ecological effect over the city environment.

## Aims and Objectives:

1. The purpose of the study is to find out present Geo- environment status of the Rankala tanks of the Kolhapur city.
2. To portray the present eco- environment impression of the Rankala tanks over the surrounding area.

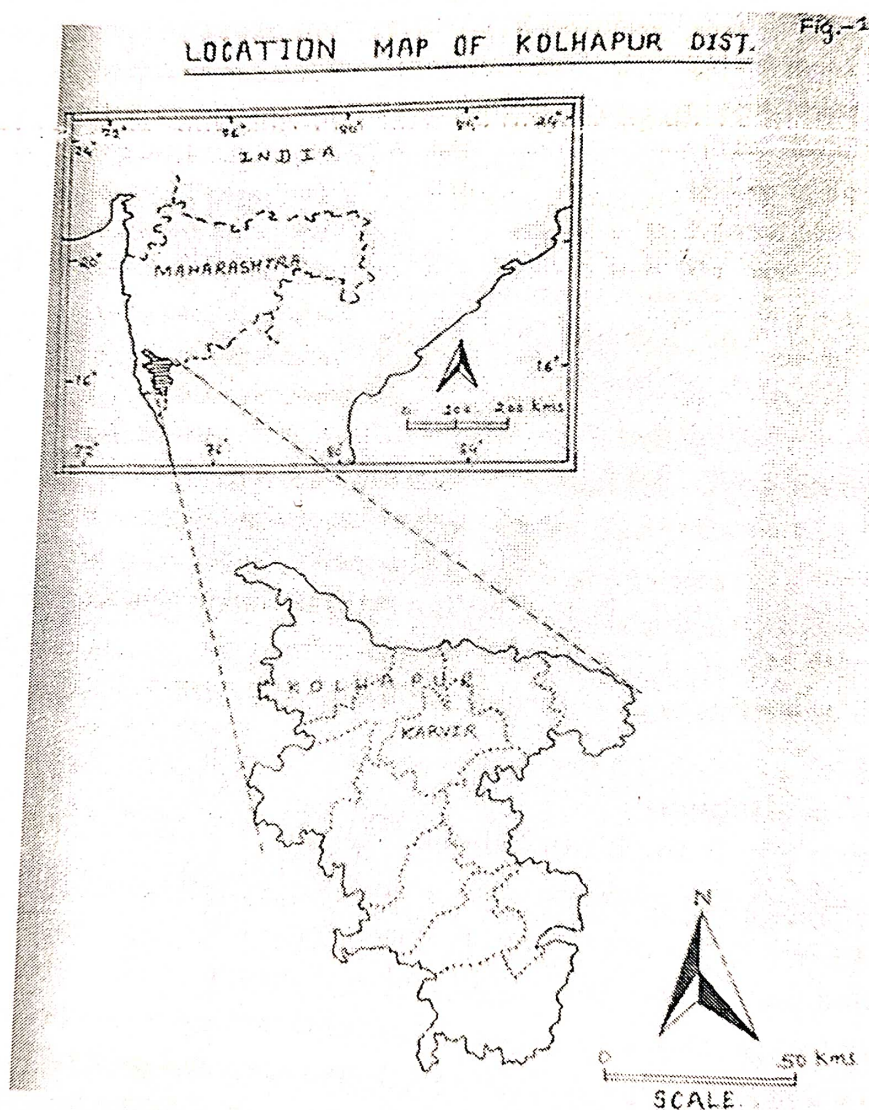
## Selection of the Study Region:

The Kolhapur city is the historical one. The city is well acclaimed as of Dakshin Kashibecause of Goddess Mahalaxmi or ambabai is the city of Kolhapur. There is need to owing several lakes and tanks in the city. Kolhapur was also well recognized as 'City of Lakes'. It is said that there were '108' small and big tanks in the historical period. During the intensive fieldwork, we came to know that several tanks were reclaimed, demolished, abandoned and finally extinct due to dearth of proper care and maintenance. The today's situation of the lakes and tanks, which still exist, is horrible. Some historical tanks could not be identified even after extensive study from toposheet. These lakes or tanks are now bogs or very small patches of filthy wet land feeded by local sewage water. Once these lakes/ tanks were the booty of city now turned into the cesspool emanating cholera dicentry like diseases.

## Data Base and Methodology:



The data for foregoing study is made available from the empirical, field survey and documents source the intensive study from to toposheet has also been done accordingly. The empirical sources include physico-chemical analysis of water quality such as Ph, DO, TDS, electroconductivity with other physical characteristics like odor, color, turbidity, transparency etc. The extensive field survey consisting thorough observation of each water body and its surrounding environment has also been done. We collected some important information about each tank e.g., historical background, source of water like feeder channels, wells, source of pollution, vegetation species, birds etc. some intensive experiments particularly to find out water depth of lakes/ tanks also accomplished by navigation in to the water. Documenting sources comprising reading of reports, surveys, research papers, official published data, and newspaper also have been brought under use.



### Physico-Chemical Properties of Water:

While discussing the physico-chemical properties of the water the attempt has been made to study the quality of lake water to evaluate their suitability for drinking and irrigation purpose. The attempt is also made to find out ecological status of the lake.

### Rankala Tank:

Rankala Lake is situated in south west of the city developed during 1877-1883.







The physio- chemical properties of the lake also suggest the severity of water pollution COD Phys-ico chemical characteristics of lakes and Tanks water in Kolhapur city (2022)

Sr. No.	Parameter of water	Rankala Tank
1	Ph (6 to 8.5)	7.17
2	Conductivity(mhos)	0.0125
3	DO (4 to 6ppm)	8.4
4	COD (4ppm)	160
5	TSS (5 ppm)	Nil
6	TDS (500ppm)	200

The parameters of water given above are for drinking water Kolhapur city (2022)

The Foregoing study of the chemical properties of some lakes and tanks in Kolhapur city reveals that the level of water pollution is continuously increasing. The intensity of water pollution has very deteriorated in Rankala. The pollution of the lake water is mainly due to several terminals of sewage, cattle washing, mass bathing, cloth washing, & human waste.

Therefore, it is necessary to take some preventive measures to reduce the water pollution of the lake and tanks. Preventive measures like,

1. Diversion of sewage
2. Total prohibition for washing of cattle, cloths
3. Total eradication of hyacinth and other aquatic plants.
4. Construction of wall wherever necessary.

Therefore, it has concluded that there is close relation between area of Lake Water storage & level of water pollution. It is studied that there is inverse proportion between quantity of water & pollution. In case of Rankala, though the sources of pollutant are more but level of water pollution is moderate because of vast water storage such is in case of other lakes.

#### Geo-Environmental Status:

Presently the surrounding of the tank supports aquatic flora and fauna. It also attracts many wildlife especially very rare bird species nearly 500 birds, 200 different aquatic and several vegetative species are found in an around the tank. The use of tank water is mainly for irrigation, about 80 hectares of lands in and around the city is sustainable over the use of tank water.

Some salient features of the lakes/tanks in Kolhapur city

Sr No.	Name of the lake /tank	Area about	Water source	Depth source	Lined or unlined	Present status/ remarks
1	Rankala tank	107 hec.	Water stream, Canal feeding	30	Well-lined and constructed	Well maintained Still need some attention

Rankala Lake is still in its stereotype health. Nevertheless, if disregarded will turn into the wetland. Water capacity of the lake is tremendous owing to a very extensive area



under the water reservoir, it is still in its good position. The Geo-diversity is very rich in the surrounding of the lake Rankala. Southwestern part of the lake has developed some wet land ecosystem. Thousands of botanical species are existing in this area with many kinds of birds. Some rare fishes are also occurred in this lake.

#### **Conclusion:**

From the foregoing brief but intensive study of the lakes and tanks in Kolhapur city conducted with keeping save geographical and environmental aspects prevailed some shocking questions with some stark reality that the lakes and tanks which have save historical value still disregarded carelessly and heavily exploiting in the bygone period there where several natural lakes and pond existed in the city owing to that the city was recognized as a city of lakes but in time several such water bodies are shrunk even some are disappeared totally extinct. There are several regions behind such predicament and several aspects are responsible for extinction at these lakes and tanks the part of anthropogenic activities are much responsible than natural one rapid growth of urbanization so called town planning greed to take maximum benefit from land are prime causes. It is because some lakes and tanks are virtually reclaimed by the municipal corporation and so-called Builders. Now days there are so far six lakes and tanks are existed in the city among these Rankala is major one still in its good lakastine Health owing to the vast area under the water cover it has considerably affected surrounding area. The climate and ecosystem are under its impression. It commands the micro changes in climate and even in air Temperature of the surrounding Rankala Lake has its own pond ecosystem with in rich biodiversity. There are several rare species of flora and fauna are occurred. We should very meticulously preserve this natural booty by conservation practice

#### **Suggestions:**

After the intensive study conducted in short period, I could not reveal some other effects of the issue it regards some profound analysis and study of the issue at least like this which have wide scope of the study However, we have come to suggest some steps, which should be taken, and some prevention, which should be avoided, or bar All these together will certainly help to about the beauty of lakes, tanks and their surrounding

1. Tap the small channels, which are adding sewage into lake/tanks
2. Total, restriction over homely use such as cloth washing, bathing, Cattle washing.
3. There should be a sentry or security guard keeping eye untoward activities like above cited.
4. Controlling growth of hyacinth and hydrilla
5. Disposal of waste material such as food waste, solid waste, food bags, boxes, papers etc. should be banned and heavily fined if found.
6. Construction and repairing, if necessary, should be done in time
7. Protection of plantation, full grown trees etc. Need to protect the aquatic life i.e. some rare fishes. Public awareness is must to control pollution.

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