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A water quality analysis of the Ong River, Padampur, Bargarh, Odisha

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Abstract
Water is among the most vital sources for all living things. Clean water scarcity, although being a renewable resource, is a significant issue in many parts of the world. Water is necessary for us to produce food, maintain personal cleanliness, generate electricity, control fires, and most importantly, survive. In order to manage the water quality for health and hygienic purposes, the present investigation of water quality in the Ong River, Padampur area was carried out in 2022. According to the current analysis, some parameter values do fall inside the permitted range, but not all of them. The results show that even if the river is filthy, water can still be used for drinking and cultivation after enough filtration.

Keywords: Ong River, clean water scarcity, living things

Introduction

For all living things, water is one of the most important sources. Despite being a renewable resource, clean water scarcity is a major problem in many regions of the world. We require water for a variety of things, including food production, personal hygiene, electrical generation, fire control, and most importantly, survival.

Another significant tributary of the Mahanadi River is called Ong. It is located to the right of the Jonk River and rises at an elevation of 457 meters on a hill in the northern foothills of the south-to-north running Gandhamardan mountain range. Chira nalla, Surangi, Utalioe, and Khira are the river's main tributaries. The sub-basin is located between the latitudes of 20°41' and 21°29' in the north and 82°33' and 83°50' in the east. The Ong River travels 204 km in total, turning right to join the Mahanadi 11 km above Sonepur. 5,128 km2 of the interior of the main basin make up the Ong River's drainage area. The Ong basin has a predominantly dry sub-humid climate.

Numerous researchers have examined the physico-chemical characteristics of river water and their effects, including Rosli *et al*. (2012) [1], Ravindra *et al*. 2003 [2], Namrata, 2010 [3], Jindal *et al*. 2011 [4], Otokunefor *et al*. 2005 [5], and Weldemariam (2013) [6].

The current investigation of water quality in the Ong River, Padampur area was conducted in 2022 with a view to managing it for health and hygiene reasons.

Material & Methods

At various locations along the Ong River, four sampling stations were selected. The purpose of sampling is to gather a small amount of water from the water source for water analysis and to examine the Physico-chemical elements that are present in the water. The NEERI-recommended water analysis techniques were used (1986) [7].

Results

Table no. 1 lists the physico-chemical characteristics of Ong river water.

Table 1: Physico-Chemical Analysis of Ong River Water. Date of Sample Collection: 28.8.2022

Sl. No	Parameter	Unit	Site-1	Site-2	Site-3	Site-4
1	pH	-	7.2	7.3	7.2	7.1
2	EC	µmhos/cm	741.2	688.2	710.3	741.4
3	TURBIDITY	N.T.U	16.4	15.1	16.6	15.1
4	TDS	mg/L	189	168	181	177
5	BOD	mg/L	6.4	7.1	7.4	7.6
6	COD	mg/L	48.5	54.1	68.3	70.2
7	DO	mg/L	1.6	1.5	1.8	1.4
8	NITRATE	mg/L	8.6	9.2	8.9	9.3
9	PHOSPHATE	mg/L	0.86	0.87	0.95	0.92
10	CHLORIDE	mg/L	111	121	101	107
11	FLUORIDE	mg/L	0.96	0.91	0.85	0.81

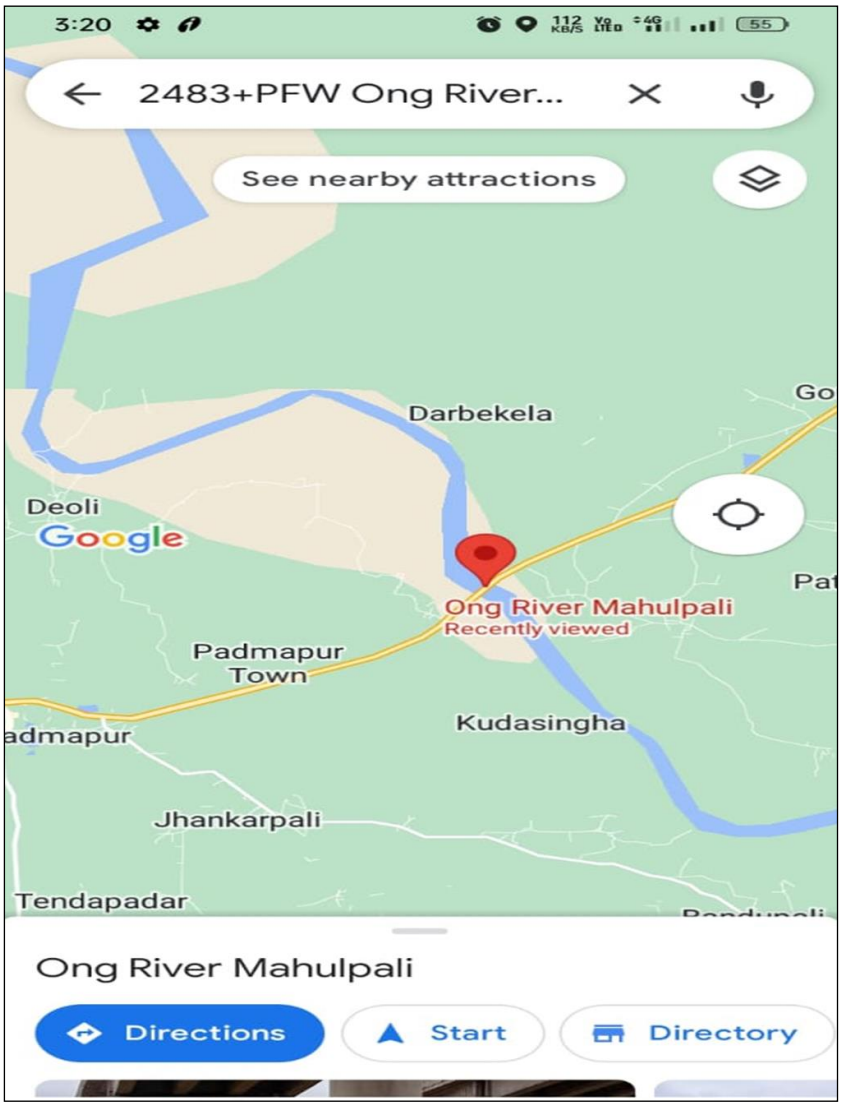
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Fig 1


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Fig 2

Conclusion

The analysis of numerous physico-chemical parameters reveals that anthropogenic activities have an impact on the Ong River's water. The current analysis demonstrates that while some parameter values fall within the acceptable range, others do not. The findings indicate that although the river is polluted, water can still be utilized for agriculture and, after sufficient filtration, for drinking.

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