

Present scenario of Kali River along with Farrukhabad district

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Received: 24 Oct 2024 Accepted & Reviewed: 25 Nov 2024, Published : 30 November 2024

Abstract

Kali River is originated from Muzaffarnagar district and merges in Ganga River near Kannauj district. It passes through Meerut, Bulandsahar, Aligarh, Etah and Farrukhabad district. It is also known as Naagan River in Muzaffarnagar. The river receives sewage and Industrial effluents from cities like Muzaffarnagar, Modinagar, Bulandsahar, Hapur, Farrukhabad and Kannauj as well as waste water from slaughter houses in Meerut. It is the one other rivers targeted for cleaning up by the National Ganga river basin authority. The river toxicity is said to be causing cancer and death in villages along its banks.

Samples from the river have shown zero oxygen levels, making it unfit for drinking or irrigation but at near the Aligarh it is clean at some level due to merging of excessive clean water. In Farrukhabad district, the anthropological activity such as bathing of cattle's, throwing the dead bodies of cattle's, excessive use of chemical fertilizers and insecticides in crops near the bank of Kali river polluted this river.

Moreover, excessive numbers of drainage also fall in the Kali River, causing more polluted to Kali river in Farrukhabad district. Hence, there is urgent need to clean Kali river for drinking and irrigation purposes.

Keywords:- Kali river, pollution, anthropological activity, Farrukhabad, Naagan river

Introduction

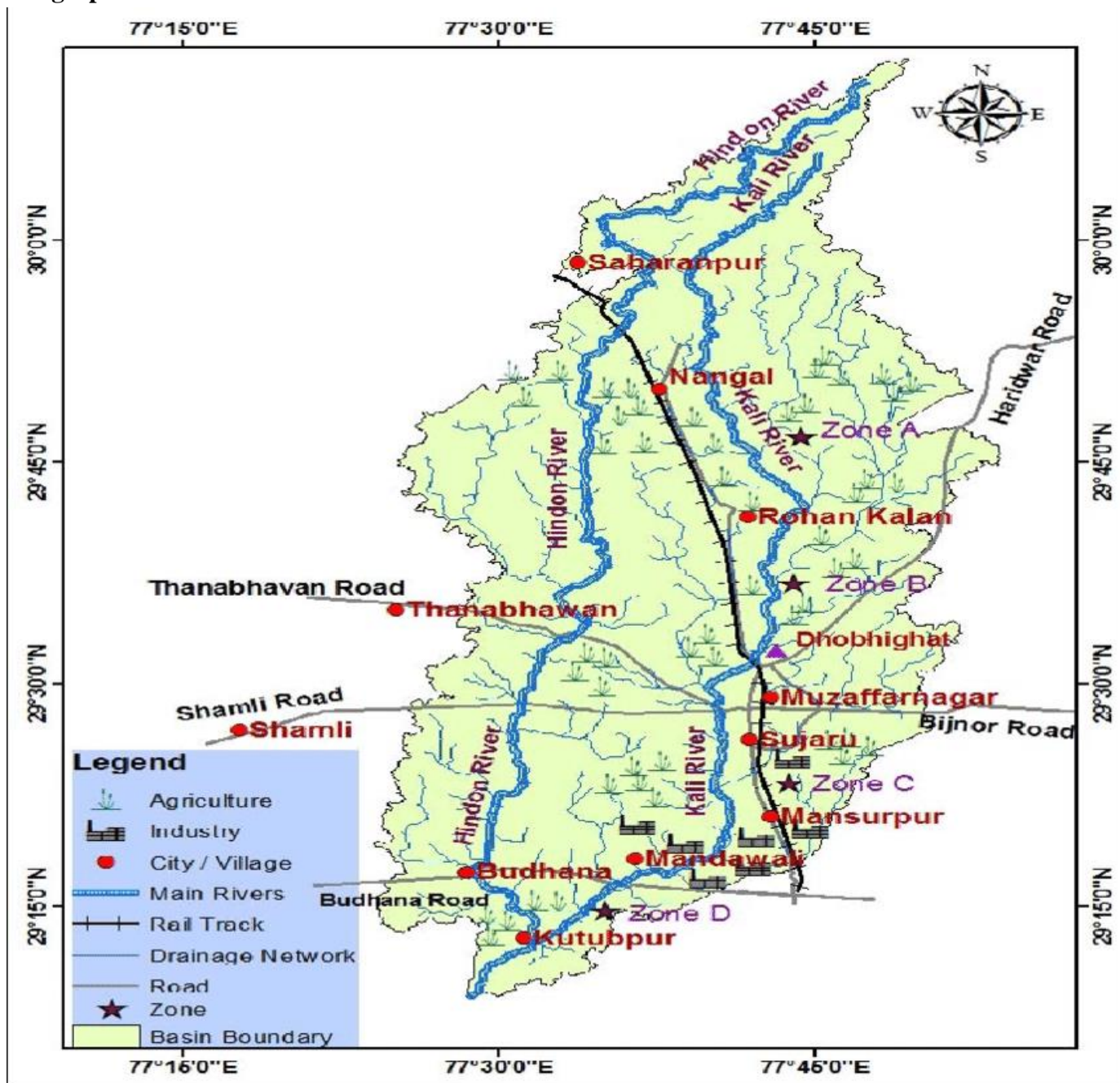
Pollution is one of the major threats of present era. Day by day our environment becomes fatal and toxic. The use of air conditioners, deforestation, industrialization and wars are the main pollutants, causing pollution. The nature is very unique, nobody known to it.

In the year 2024 a very much rain fall was in Dubai, causing flood in Dubai. However, the rain falls in Dubai is very low on last several years. On the other hand, in the month of September, 2024 Iran records highest temperature i.e. 85⁰ C. This is due to weapons wars against nearest countries. In the last summer, in India the temperature increased very much. It is due to the more and more use of Freons and Neons in air conditioners and cooling apparatus.

Out of environment pollution water is having an important place. We need water for daily activities. The cell is having about 70% water in the cytoplasm. Similarly, the body fluid also contains water. On our planet only 3% water is fresh water and 97% water is marine water.

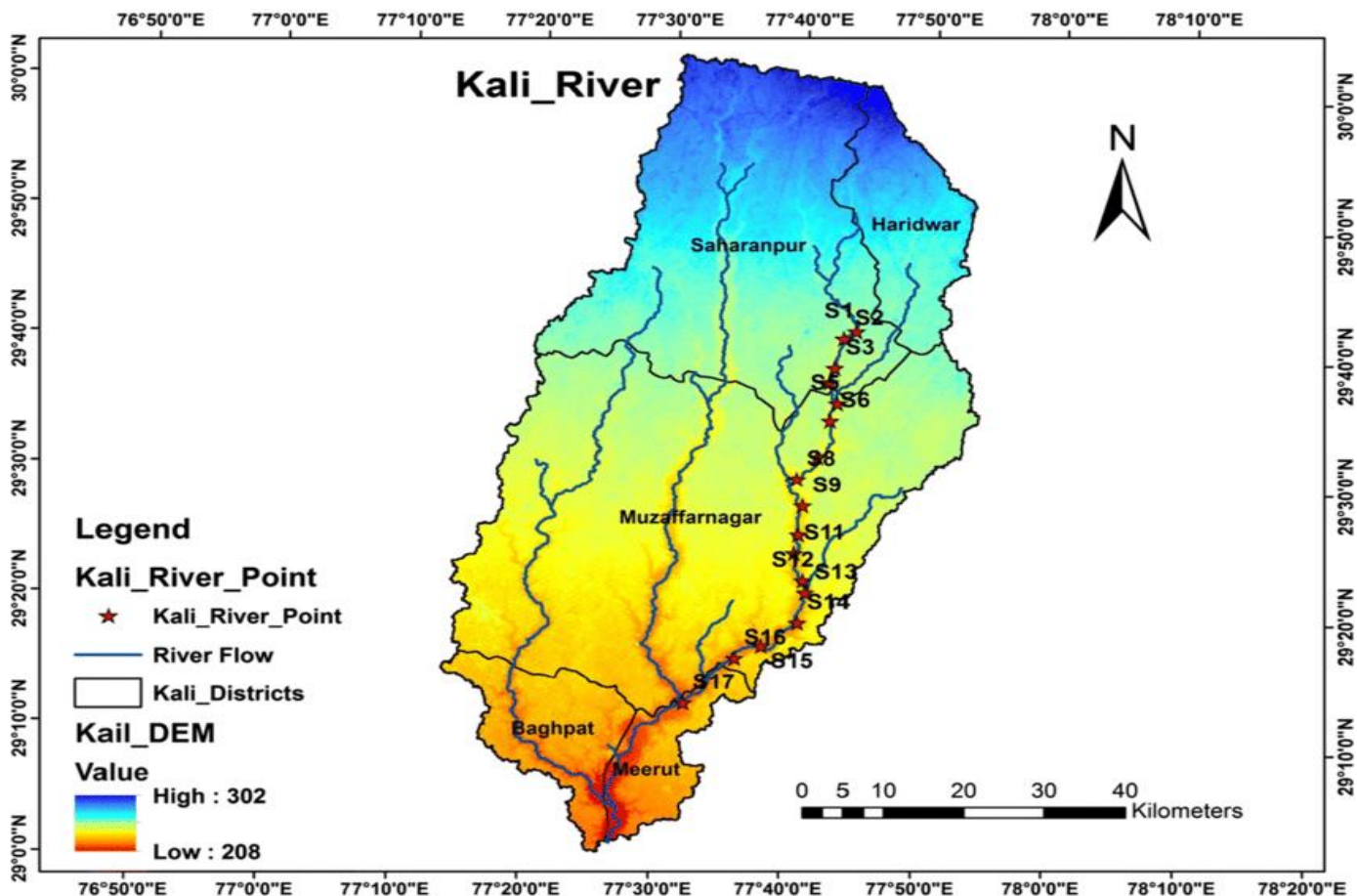
The industrial effluents, sewage waste, house hold garbage, agricultural insecticides and chemical fertilizers polluting the fresh water bodies. The recharging sources of land water are gradually decreased day by day so; land water becomes deepen and deepen. (Yaduvanshi *et al.*, 2024) Hence, Present condition of water pollution is very dangerous and nobody attained this side. If, this condition is continues, the next war will be for potable water. Considering, all these facts present manuscript explores the present condition of Kali river with respect to its origin and merging.

Geographical location



The Kali river originates from the forest region in Antwada village in Jaansad tehsil of Muzaffarnagar district in form of a small stream, flowing for about 3 km as clear waters. On the way to Khatauli – Mirapur road, black stenching waters of Khatauli sugar mill finds its way to the Kali. After 10 km of its journey with black waters, it enters Meerut district.

It passes Nagli aashram in Meerut district. The water here is quite dirty. It dries up on its way onwards. The dry river reaches another 10-15 km towards Daurala – Lavad road where the drain of Daurala sugar mill flows into the dry river giving it black stanching but water for life. Passing Panwadi, Dhanju and Dedva villages, the river moves ahead of Meerut – Mawana road, where the drains of half a dozen paper mills of Saini, Phitkari and Rafen villages flow into the river.



Moving ahead to Meerut city, the river passes through Jaibheem nagar colony where PAC drain carrying the city wastes meets the river. This sewage also consists of wastes of Daurala Chemical plant and colour factory. The river moves ahead carrying large quantity of wastage yet for 5 km, the animal carcasses and bloody wastage of butcher house of Meerut nagar nigam is also dropped into the river. The river passes through Aadh, Kudhla, Kaul, Bhadoli and Atrara villages and flows about for 20 km before entering Hapur district.

Then passing through Hapur- Garh road, after 30 km the river enters Bulandshar district. The sewage of Bulandshahar city is also dumped into it. After about 50 km, the river enters Aligarh district. The wastage of Aligarh distillery and butcher houses is dumped into the river.

As the river crosses Aligarh, the pollution level decreases. The first reason for it is the fresh river water which is added at the Harduaganj Bhudansi at Aligarh and second reason being no industrial waste being added between Aligarh and Kannauj where it meets Holy Ganga. From Aligarh, it flows towards Kasganj. There is a spectacular view of rivers at Kasganj. The Kali River flows from under another river on the bridge. This bridge was constructed in 18th century and is 200 meter long. From Kasganj, the river flows into Etah district, from there to Farukhabad and at the end to Kannauj district. At Kasganj, Etah, Farrukhabad and Kannauj districts, no industry dumps its wastes in to the Kali and neither the city sewage is dumped into it.

After Etah, the sewage of Gursaganj Township is dumped into Kali, but the river water becomes clearer onwards. But, a drain is being constructed by Uttar Pradesh government at Kannauj city, to carry and dump the sewage of the city into the river.

The distance travelled between Kasganj and Kannauj by the river is almost 150 km. This length of river is far cleaner than the same length between Muzafarnagar to Aligarh. When the Kali flows into Ganga at Kannauj, it becomes difficult to differentiate the Ganga and Kali waters (Vidyarthi *et al.*, 2020).

Pollution in Kali river

The Kali river in Uttar Pradesh is polluted by industrial and sewage discharges and is one of the most polluted rivers in north India. The river's pollution is due to a number of factors, including:

- Untreated effluents: The river receives untreated effluents from chemical plants, sugar mills, distilleries and slaughter houses.
- Domestic sewage: The river receives domestic sewage.
- Agricultural runoff: The river receives agricultural runoff.
- Polythene: The river receives indiscriminate use of polythene.
- Use of insecticides in the crops.
- Use of chemical fertilizers in the crops.
- Bathing of cattle in the river.
- Throwing of dead body of animals.
- Throwing of crop wastes in the river.



A study conducted in 2015-16 reveals that in Rampura, the groundwater recorded total dissolved solids of 1760 mg/litre, way above the permissible standard of a maximum of 500 mg/litre for drinking purposes. Soil stratum was harmed as iron and lead contamination spread from river water to aquifers (underground reservoirs that hold groundwater) that are recharged by it (Soni *et al.*, 2019).

Lead is recognised as highly toxic and damages the nervous system in humans while, iron is therapeutic in low doses but lethal when present in excessive quantities. This toxic water gets distributed and is used for drinking and irrigation purposes in rural areas. This has a severe health impact on us and our animals. The outfall of water from *nullahs* to the river must stop, says Satish Kumar, a farmer from Jalalpur village in Meerut district.

The water from hand pumps has shown iron concentration measuring up to 0.35 parts per million, which is enough to cause water to turn reddish brown in colour. Lead concentration too was high at 0.5 parts per million in Rampura. According to Indian standard drinking water [specification](#) 1991, the highest desirable limit of lead in drinking water is 0.05 parts per million. The possibility of geo-genic contamination i.e., naturally occurring contaminants in the water, too cannot be ruled out. The Central Ground Water Authority is studying these aspects, says Atulesh Yadav, regional officer, Uttar Pradesh State Pollution Control Board, Meerut (Said and Khan 2021).

Rampura is one of the several villages of the eight districts of western Uttar Pradesh where people's lives at one time depended on the river water for everything--from drinking to irrigation. The village that once boasted of lush green guava orchards has no original water left in its river. The prime villains in this regretful story are the ceaseless discharge of industrial wastewater and municipal sewage into the river.

The three main cities of Meerut, Hapur and Bulandshahr through which the East Kali passes have several sugar mills, allied alcohol manufacturing distilleries, paper industries, dairies, tanneries and textile mills that discharge their effluents into the river, says Raman Kant, director of Neer Foundation. The effluents from the sugar and paper mills are highly toxic and these two industries are enlisted among the 17 most toxic waste releasing industries by the [standards](#) provided under the Environment Protection Rules, 1986.

The pollution load in the river is unmanageable and it can barely assimilate the pollutants. Dilution with freshwater isn't a viable treatment option any longer. In most villages-right from Antawada in Muzaffarpur where the river originates, to Kannauj, its confluence with the Ganga-the water, laced with industrial toxins, is lifted from both the river and under the ground for irrigation (Kumar *et al.*, 2021).

Water flows from the underground caverns in the forest adjacent to our village forming a river that used to collect rainwater. Once a life-giving force, the river is dry at its origin and gets polluted by industrial effluents a few kilo-meters downstream, says Bilam Singh, a farmer from Antawada. The effect of this on our food is mostly unknown. It is possible that some of the most toxic chemicals like cancer-causing dioxins and organo-chlorines released by factories are present in the water that is irrigating the farms, says Raman Kant. In 2001, Neer Foundation tested the water quality in government accredited laboratories which showed the presence of persistent organic pollutants or PoPs in the two samples near Saini village, downstream of Nanglamal sugar factory. PoPs are known for their impacts on human health and the environment as they are resistant to environmental degradation. Farmers knew of the contamination but continued to irrigate from the river, adds Raman Kant. It is only on the river's downstream stretch as it crosses the city of Aligarh that its pollution level declines as freshwater are added to it from the upper Ganga canal. Besides this, industrial wastes are not added in the river's stretch between Aligarh and Kannauj, says Raman Kant (Kumar, 2022).

Present situation of Kali river

The Kali River is a 550 km long river that originates in Muzaffarnagar district and flows through Farrukhabad before merging into the Ganga near Kannauj.

The National Ganga River Basin Authority (NGRBA) has identified the Kali River as one of the rivers that needs to be cleaned up.

The high degree of toxicity in Hindon, Yamuna and Kali rivers is leading to cancer and deaths in the villages along these water bodies, said Rajya Sabha MP Vijay Pal Singh Tomar in press conference. The people residing in some of the worst affected areas told TOI that the situation is indeed grim. Around 100-150 deaths have been reported annually due to cancer in the surrounding villages.

Besides taking strict action against those polluting the river, the authorities must consider increasing the flow of water in these rivers to dilute the toxicity, president of Meerut district panchayat, Gaurav Chaudhary, told TOI. Anil Kumar, a resident of Chilora village, said, I lost my wife (35) and two uncles, aged 56 and 60, to cancer. Water from hand pumps and tube wells is contaminated, as untreated industrial and urban waste is directly released into the river and percolates into the ground.

Rampura, situated in Bulandshahr district in western Uttar Pradesh, is one of the 1,200 villages on the banks of the 300-km long East Kali, a tributary of the Ganges. The river is named after goddess Kali who, according to the Hindu mythology, is fierce and fights evil by ingesting it (Kumar *et al.*, 2020).

Till the 1980s, the river was a symbol of purity. Things have changed now with the river turning into a *nullah* brimming with industrial effluents. We used to drink its waters when young. Today, it's so toxic that forget drinking, I dread touching it, says Devendra Kumar Sharma, a resident of Panwadi, a village in Meerut district. The river's toxic water now symbolises death and not life (Kumar *et al.*, 2018).

Foul flows in streams

As per a study by Neer Foundation, a Meerut-based non-profit working on environmental issues, as the river is polluted, the ground water of the area which gets replenished by the river too has turned into a receptacle for toxic waste. Unsuspecting people, however, continued to draw water through the hand pumps till recent studies rang an alarm bell.

In Farrukhabad district, so many anthropological activities such as domestic sewage, agricultural runoff, indiscriminate use of polythene, use of insecticides in the crops, use of chemical fertilizers in the crops, bathing of cattle in the river, throwing of dead body of animals and throwing of crop wastes in the river create water pollution in Kali river. Hence, an urgent needs to clean it to become palatable for animals.

Conclusion-

In the past, Kali river is very neat and clean and used for irrigation and drinking purposes of animals. As soon as the development is going on, the pollution in Kali river is increasing day by day. The industries effluents, sewage, slaughter houses waste, house hold waste and anthropological activities, increase the pollutants load in the Kali river. When this water is leaching in ground water, the ground water is also polluted. In addition to this, this polluted water is used in agriculture lands and enter the food chain so, ultimately faunal physiology is disturbed. So, taken into mind, present study is an alarm to human being that next war will be for water. Hence, conserve our water resources being become polluted.

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