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Current Scenario of Pollution and Various Affecting Factors in Kali Nadi

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ABSTRACT: The Kali River, commonly known as Kali Nadi,[1][2] originates in the Upper Sivaliks and passes through Saharanpur, Muzaffarnagar and Baghpat districts, before merging with Hindon River (at Barnava, Baghpat), which goes on to merge with the Yamuna River (near Delhi), which itself goes to merge with the Ganga River, which finally merges with the Bay of Bengal. The total length of the river from its origin up to its confluence with the Hindon river is 150 km. The river is named Kali, because of the Hindu Goddess Kali.[3] The Kali River is polluted from both raw sewage and industrial discharges.[4][5] It is one of the rivers that is targeted for clean-up under the National Ganga River Basin Authority (NGRBA)

KEYWORDS-Kali, Nadi, Uttar-Pradesh,Polluted,Sewage,Industrial-Discharges,NGRBA

I. INTRODUCTION

Human civilization developed on the banks of rivers, lakes and other sources of water. From there enough water was available for cooking food, bathing, animals, irrigation and waste and sewerage were also discharged into it. Several civilizations developed on the banks of rivers reached their peak and later went into oblivion. Newer civilizations took their place and with time they also perished. This has been happening for past thousands of years. River water has the inherent capacity to purify itself but now days so much waste, sewerage and dead bodies are disposed into them that their water turns unsafe for drinking. In northern India civilization developed on the banks of big rivers like Ganga and Yamuna. Indian traditions and religious rituals have a deep-rooted relation with rivers.

The Kali River East, a tributary of the Ganges flows through eight Districts of Uttar Pradesh before its confluence with Ganga River near Kannauj. The river has over 1,200 villages situated on its bank and the highly populated and predominantly rural catchment is entirely dependent on the Kali River as a water resource for domestic, agricultural and industrial use while the untreated groundwater is the primary source of drinking water.[1,2,3]

Kali River (East) originates from the Anthawada village situated in the north of Daurala block of Jansath tehsil of Muzaffarnagar district. However few people believe river originates from Chittoda village situated above in the north of Anthawada village at a distance of 1 km in the form of a lean stream but water has never flown into it. At the time of study also this stream was dry. Henceforth, the majority of local people regard Anthawada village as source and birthplace of the river. This river travels a distance of nearly three hundred km from its origin and passes through Muzaffarnagar, Meerut, Ghaziabad, Bulandsahar, Aligarh, Eta, Farukhabbad and Kannauj before resting into river Ganga near Kannuaj. On the banks of Kali river, there are nearly 1200 villages and several big cities and towns whose majority of the population uses river water mainly for agriculture and animal rearing. This river never flows straight and flows in a zigzag manner hence, also called Nagin and in the area near Kannauj, it is known as Kalindi.

Since last two decades, the river is being used as a dumping ground with substantial quantities of contaminants and untreated effluents from numerous sources disposed into it along its course. The major factors are industrial untreated effluents, domestic sewage, agricultural runoff, indiscriminate use of polythene etc.

Industrial usage is the main cause of pollution of the Kali River (East). Key industries including sugar processing unit and their associated alcohol manufacture distilleries, paper mills, dairies, tanneries are situated adjacent to the river. The sugar mills and paper mills are enlisted in the 17 most toxic waste releasing industries. These industries not only abstract large volumes of water during their manufacturing processes reducing dilution of pollutants present in the surface water bodies but also contaminate the river adversely by draining their effluent wastes into it.

Secondly, Kali Nadi receives a large volume of untreated raw human excreta from thousands of major and minor habitations. In other words, it serves as a trunk sewer of major cities and urban towns. It also includes domestic wastes such as soda, DDT, BHC, petroleum products, etc. which indicates that it contains a wider range of heavy metal parameters.

Thirdly, Western U.P being an intensely agricultural region, a considerable volume of chemical fertilizers, pesticides, rodenticides, etc. are used. These chemicals and heavy metals flow into the river through the process of erosion and through the soil to the underlying aquifers causing contamination of this important water resource.

Besides sewage flow, domestic waste flow and dead animals are also dumped in the river water. The dead bodies of people suffering from certain infectious diseases are also dumped in the river which spreads pollution and may lead to epidemics. The polluted river carries waterborne viruses and bacteria and is responsible for the ill health of the people.

Due to this mismanagement of a vital water resource, its physio-chemical qualities have deteriorated to such an extent that it has affected the groundwater too. The foul taste and odor manifest that the water of the Kali River is non-potable. However, the marginalized community residing within the catchment area is bound to consume the highly polluted water. The residents are left with no option other than either to fend themselves or die of neglect.[5,7,8]

II. DISCUSSION

The Kali originates from the forest region in Antwada village in Jaansad tehsil of Muzafarnnagar district in form of a small stream, flowing for about 3 kms 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 kms 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 kms 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 color factory.

The river moves ahead carrying large quanity of wastage yet for 5 kms, the animal carscasses 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 kms before entering Hapur district.

Then passing through Hapur- Garh road, after 30 kms the river enters Bulandshar district. The sewage of bulandshahar city is also dumped into it. After about 50 kms, 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 Kaasganj. There is a spectacular view of rivers at Kaasganj.

The Kali River flows from under another river on the bridge. This bridge was constructed in 18th century and is 200 mts long. From Kaasganj, the river flows into Eta district, from there to Farukkhabad and at the end to Kannauj district. At Kaasganj, Eta, Farrukhabad and Kannauj districts, no industry dumps its wastes in to the Kali and neither the city sewage is dumped into it.

After Eta, the sewage of Gursaiganj township is dumped into Kali, but the the river water becomes clearer onwards. But, a drain is being constructed by Uttar Pradesh govt at Kannauj city, to carry and dump the sewage of the city into the river.[9,10,11]

The distance travelled between Kaasganj and Kannauj by the river is almost 150 kms. This length of river is far cleaner than the same length between Muzafarnnagar to Aligarh. When the Kali flows into Ganga at Kannauj, it becomes difficult to differentiate the Ganga and Kali waters.

III. RESULTS

Forty years back, what was a blessing for people across 1200 villages, has now turned into a curse. 'Kali Nadi' (black river), which starts from the Antwara, a district in Muzaffarnagar and ends at Kannauj, is now known as a cause of cancer, skin disease, heart failure, infertility and many such more deadly medical conditions.

Sometime in the year 1960, a tributary of the Ganga was the only sources for day-to-day work. The 498 km long 'Kali Nadi' which passes through Muzaffarnagar, Meerut, Hapur, Khurja, Bulandshahr, Aligarh, Farrukhabad, Kasganj, till Kannauj, was the main source of water and used to cater to more than 1200 villages on both sides of the river.

But today, Kali Nadi is supposed to be one the most highly-polluted rivers of North India, of the NGO Neer Foundation that works exclusively to save the Kali Nadi. The first layer of the water bed is severely-affected, especially in and around a one kilometre radius of the river bed. Clean, pure water no longer remains; only sewage, industrial, chemical and slaughter house waste can be found in the river.

"The sad part is the water of Kali Nadi is not only taking lives in the form of cancer and other deadly diseases, but it is also finishing the future generations too. In our village 80% of the household is affected as the biggest problem is infertility," says Munnavar, Pithlokar village head, Meerut. Dr. Sunil Jindal, senior infertility specialist, says, "Sperm count has gone down over a decade. There is DNA fragmentation of sperm and functionality is getting damaged.

Because of pollution and toxicity there is killing of gametes thus leading to infertility. If the speed remains the same than by 2050 more than half of the population will be infertile."

Adding to this, Dr Umang Mithal, a senior surgical oncologist says that the number of patients from areas in and around the Kali Nadi is almost double as compared to other areas. "Usually, patients of these areas suffer from bladder and oral cancer.

This includes patients having urinary, throat and mouth cancer. The main reason is polluted water. Boiling or using of any reverse osmosis (RO) systems cannot purify the water," he says.

Even animals are not spared. "We have lost a sizeable number of cattle. These includes buffaloes, cow, bulls and goats, etc. In last eight to ten years, the death toll has reached 700," says Munnavar.[12,13,15]

Efforts for rejuvenation, though undertaken by the government, hasn't improved the situation yet. Raman Tyagi says, "After running from post to pillar for our drive to save the Kali Nadi, it has been adopted by the Central Government under its Namami Ganga programme (It has an objective of effective abatement of pollution, conservation and rejuvenation of the Ganga).

Ifkat, a resident of Nangla village, says "It (Kali Nadi) has made every one sick. The water is not worth drinking. All crops and farms have finished.

If still, we choose to use the water of Kali Nadi, the entire lot of crops gets burnt out. Every year the production is only 35% to 40%, the rest is useless." He adds, "We have lost all hope. All we need is remedy and solutions in times to come."

Munnavar, the village head adds, "In our village, there are more than 1,000 houses with a population of around 18,000 to 20,000.

There is no house where skin disease, asthma, cancer, the heart condition is not prevalent. Even a foreign delegation who visited our village between March 23 to 25, 2018, last, has also certified that infertility is there due usage of water of Kali Nadi".

A US-based NGO, the Water Collective, had visited villages along the Kali Nadi. In their visit across eight villages, they found various instances of discoloured, impurities-filled water, and villagers suffering from chronic and fatal diseases.

IV. CONCLUSIONS

In 2016, the Modi government gave the approval of adopting Kali Nadi. 200 bigha of land, approximately 50 acres, has been provided by the government in Antwara for developing a lagoon, along with including a water table and rainwater collection point.

But the reality is only official adoption is there but no work has started yet. There is complete silence in this regard."

Along with human and animal life being affected by the Kali Nadi, occupations like farming are facing a severe crisis as well.[15]

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