DISPOSAL OF WASTE INTO THE BEAS RIVER AND ITS IMPACT

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Abstract

The rivers are the important sources of any nation as they provide the base for survival of its economy as well as people's life. Rivers act as a medium of connecting the world's economy with every nation through various medium. The Punjab, developed state of India, has a great source of rivers. It has known as the land of rivers which helps in the economy of the state to grow but nowadays the conditions of rivers become miserable. The beas river which is the important source of Punjab, become threaten to its surrounding regions. This paper explains the impact of disposal into the Beas River and tries to provide alternate and solutions to this problem.

Keywords: Beas River, Disposal, Economy, Impact, Punjab, Waste

INTRODUCTION:

One of India's most prosperous and agriculturally productive states, Punjab, since the days of partition has been plagued with several problems, environmental and politically. Though the state has continued with its good economic growth, a different problem today poses significant threat to Punjab, a problem which has far reaching consequences for the state and its population. Rivers, Punjab's lifeline are in a direly polluted state today, affecting its population and threatening the state's economic backbone of agriculture.

Known as the land of five rivers, Sutlej, Beas, Ravi, Chenab and Jhelum flowed through Punjab, all of which are tributaries of river Indus. Part of Punjab went to Pakistan post partition and presently, Sutlej, Beas and the monsoon only river of Ghaggar flow through the state of Punjab in India, while the river Ravi flows partially through the state

The following table shows a summary of all the five rivers of Punjab:

Rivers	**Length in Kms**	**Place of origin**	**Terminates in**
Satluj	1500	Rakshastal lake in Tibet	Chenab river
Ravi	720	Kangra district of Himachal Pradesh	Chenab river
Beas	470	Beas Kund in Himalayas, Himachal Pradesh	Sutlej river at Harike in Tarn Taran district
Jhelum	725	Verinag spring in Kashmir	Chenab river
Chenab	960	Upper Himalayas in Lahaul and Spiti district of Himachal Pradesh	Merge with Sutlej and forms Panjnad river, which flows into Indus river

THE STUDY AREA

Beas is an important contributory river of the lndus System. It is 460 km long originates from two sources, Beas Kund (4060 m) on the South and, Beas Rishi on the right of Rohtang Pass within North-Western Himalaya. The two streams meet at Palchan village, 10 km north of Manali to form river Beas. After leaving Pong Dam in Himachal Pradesh, the river enters plains of Punjab at Talwara (District Hoshiarpur) where it is immediately subjected to further manipulation for Irrigation by carving a Shah Nehar Canal where in water in the range of 4170-8611 cusecs is diverted, depending upon the season. The river with depleted water resources takes a loop like course to reach Mirthal (District Gurdaspur). in district Gurdaspur, river Beas regains some water resources made available from river Ravi through another Ravi Beas Link Canal originating from Madhopur and a tributary Chakki coming from north side joining it around Mirthal. The river regains its resources fully at village Terrikein (District Hoshiarpur) through rendition of Shah Nehar Canal. Thereafter river flows unrestricted for approximately 100 km and in between it receives many small Nallas amongst which the important one is Holy Bein (Kali or West Bein) around its culmination point at Harike, to its culmination with River Sutlej near Village Lohian at Hari-Ke-Pattan.The length of River Beas in the area of jurisdiction of State of Punjab is about 165 Km.

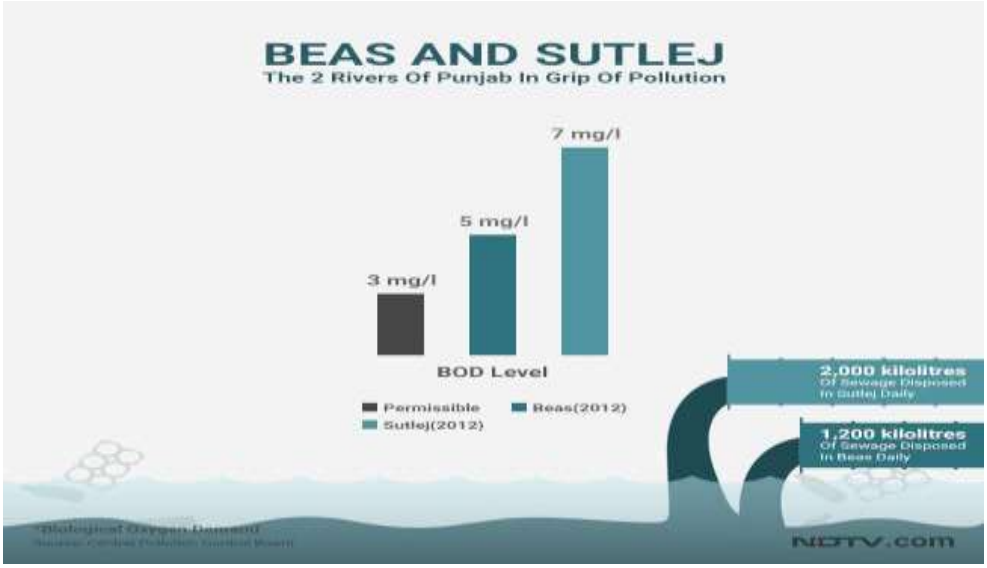
SOURCES OF DATA:

Data is the information collected through different methods. The source of this paper is secondary data. The use of newspapers, magazines, online etc. means area used for it.

CONDITION OF RIVER BEAS:

Beas River begins flowing from Kullu in Himachal Pradesh and enters Punjab via Kapurthala district. Once known for its clean and serene waters, Beas for the past several years has been at the receiving end of waste disposal from both Himachal Pradesh and Punjab. Kullu from where the river originates, has only 40 per cent of its houses with a sewerage connection to an STP, and the rest goes directly into the river. Much is not different for Beas in Punjab. The Doaba region, where the river flows for nearly 160 kilometers is one of the filthiest stretches. Kali Bein, a tributary of the Beas is known for its industrial filth, often visible on the banks. The stretch is known for its high level of hyacinth growth and in summers, when parts of the river dry up, instances of waste coming up on surface have also been reported.

Waste from hotels and households give industrial waste a tough competition in polluting the Beas and in 2016, a record 35 hotels were slapped with notices by the Kullu Municipal Corporation (KMC). In Punjab, voluntary organizations have attempted to clean up the 160 kilometer stretch in Doaba, though the cleanup efforts have yielded mixed success as industrial effluents such as zinc, magnesium, chromium and nickel from factories in nearby towns are continued to be disposed in the river. Beas is in a worse state than Sutlej because it already enters in a polluted condition from Himachal and encounters further pollution in Punjab. Nearly all nearby industries have been using the river as a dumpsite for years and now, the river's banks have become polluted as well. The long stretch of the river is a problem but at least at Amritsar, we are placing strict regulations to ensure that there is no waste disposal in the Beas. Violators will be fined by the municipal corporation, said Saurabh Arora, Joint Commissioner, Amritsar Municipal Corporation.



Indiscriminate disposal of untreated sewage in both Beas and Sutlej is paralyzing the twin rivers of Punjab

In newspaper the article related to it also published as follows:

Tribune News Service

Mandi, March 27

Environmentalists have raised concern over the rising pollution in the Beas in Kullu district because of dumping of waste material into the river.

Due to poor waste disposal management in the district, the Beas is turning into a place for dumping garbage and other waste material.

There have been reports that at many places sewerage water from hotels and households in Kullu, Bhunter, Manikaran and Manali was directly flowing into the Beas and the Parbati rivers. Krishan Sandhu, an environment lover, said the authorities concerned should take strict action to protect the water body as it had posed threat not only to the future of the river but also to the aquatic life.

Abhishek Rai, an environmentalist from the district, claimed that the four-laning work on the Kiratpur-Manali highway was going on and the National Highways Authority of India (NHAI) was dumping muck into the river.

“Despite National Green Tribunal orders to protect the river, the situation still remains grim. There is need to develop proper mechanism for the disposal of garbage in the district,” he demanded.

He said a fresh inspection should be carried out to detect those households and hotels in the district that were lacking sewerage facility. It would help in checking the direct flow of sewerage water in the Beas.

“The district administration should deal strictly with the NHAI, which was directly dumping muck in the river. Heavy penalty should be imposed on offenders,” he added.

Yunus Khan, Deputy Commissioner, Kullu, said: "The authorities are monitoring the situation to protect the river. Last year we had imposed penalty on offenders, who were found guilty."

EFFECTS OF POOR WASTE DISPOSAL.

Imagine we all throw garbage, junk and rubbish away anyhow. Imagine there was no authority to supervise waste management activities from all the sources mentioned earlier. Imagine we all just sent our rubbish to the landfill, or just dumped them in a nearby river.

Environmental Effects

Surface water contamination:

Waste that end up in water bodies negatively change the chemical composition of the water. Technically, this is called water pollution. This will affect all ecosystems existing in the water. It can also cause harm to animals that drink from such polluted water.

Soil contamination:

Hazardous chemicals that get into the soil (contaminants) can harm plants when they take up the contamination through their roots. If humans eat plants and animals that have been in contact with such polluted soils, there can be negative impact on their health.

Pollution:

Bad waste management practices can result in land and air pollution and can cause respiratory problems and other adverse health effects as contaminants are absorbed from the lungs into other parts of the body.

Leachate

Liquid that forms as water trickles through contaminated areas is called Leachate. It forms very harmful mixture of chemicals that may result in hazardous substances entering surface water, groundwater or soil.

Economic Effects

Municipal wellbeing:

Everyone wants to live and visit places that are clean, fresh and healthy. A city with poor sanitation, smelly and with waste matter all over the place do not attract good people, investors and tourists. Such cities tend to have poor living standards.

Recycling revenue:

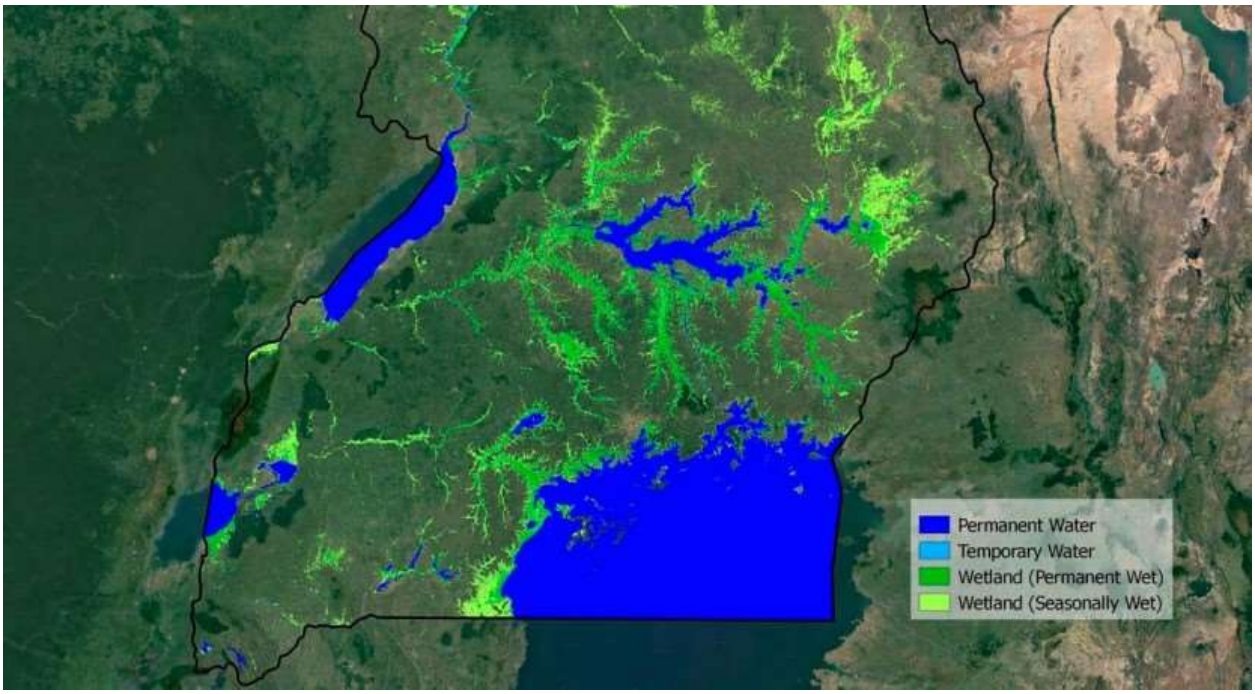
Cities that do not invest in recycling and proper waste control miss out on revenue from recycling. They also miss out on job opportunities that come from recycling, composting and businesses that work with them.

Disposal of Waste By Grossly Polluting Industries In Punjab Threaten The Widely Used Rivers Of The State

CONSERVATION METHODS TO PRESERVE THE RIVER BEAS

Though the government is trying best to presearve its nature kinds, nut it become the responsibility of humans akso to preserve the nature. The following methods can helps in controlling polluting the river:

1. The Beas Conservation Reserve is a 185-kilometre stretch of the Beas River located primarily in the north-west of the State of Punjab. The River meanders down from the Himalayan foothills to the Harike Headwork, where its course is diverted into a number of channels. The River is dotted with islands, sand bars and braided channels creating a complex environment supporting substantial biodiversity. More than 500 species of birds are documented along this stretch, along with more than 90 fish species. The Reserve also hosts the only known population in India of the endangered Indus river dolphin (*Platanista gangetica minor*). Further threatened species include the endangered masheer (*Tor putitora*) and hog deer (*Axis porcinus*) as well as the vulnerable smooth-coated otter (*Lutrogale perspicillata*). In 2017, a programme was initiated to re-introduce the critically endangered gharial (*Gavialis gangeticus*) with 47 individuals released into the River 30 years after their disappearance. Major threats include urban and domestic pollution as well as impacts of agriculture along most of the River's course. The Department of Forests and Wildlife Preservation, Punjab, conduct the scientific management of the wetland.



Satellite view of Ramsar conservation site

2. **Support river-related activities in community:** Apply for a grant or make donation to the National River Care Fund – Small Grant Programme, which is an initiative established by GEC to support local communities, community-based organisations and non-governmental organizations to pursue their own river conservation initiatives. There are also other activities such as the W.A.T.E.R Project, which is a collaborative effort between GAB Foundation and GEC

3. **Be a community river scientist**: Organize a trip out to your local river to assess its health via physical, chemical and biological monitoring. Upload your results to www.riverranger.my website. The information will be of great use to environmental conservation NGOs like GEC to protect rivers in Malaysia.
4. **Upcycle used cooking oil and trap grease** Turning your used cooking oil into soap or candles or even biodiesel will help to reduce water pollution as well as enhance the river aquatic biodiversity. Direct discharge of sullage water especially fat, oil and grease from houses and restaurants into the drain leads to blockage in the collection pipes and sewer lines, causing overflows on streets and properties. Overflows will contaminate ponds, streams and rivers. Installing a grease trap helps to remove fats and oils before the liquid enters the municipal waste system. Regular cleaning will ensure your grease trap works at the optimum level. Contact your local authority to find how you can contact waste oil collectors.
5. **Be your river's guardian:** Be alert about the changes around your river. Monitor and report problems or illegal activities happening at your river. Report incidents of illegal dumping and any other pollution to Public Complaints Bureau (PCB), OneJPS Facebook, OneJPS Twitter, 1MOCC, pro@water.gov.my and 15888 mysms
6. **keep our drains free from rubbish** Our drains are only meant to channel rainwater to rivers and reduce flood risk. Polluting and clogging our drains with rubbish will not only pollute our main source of drinking water

but will create a potential breeding ground for pests. Activities such as drain clean-ups, drain stenciling and pollution mapping can be organized to educate our community on the importance of having clean drains and instil care for our drains

7. **Adopting zero-waste lifestyle** Despite the existence of environmental laws to protect our rivers, garbage and other forms of waste are found in our waterways. For example According to DID, an estimated 50 to 60 tonnes of waste end up in the river system daily in Klang Valley alone. By adopting a zero-waste lifestyle that consists of "Rethink, Reduce, Reuse, Recycle, Compost and Close the Loop (4R2C)", we can limit our trash output and save tonnes of solid waste from ending up in landfills and rivers
8. **Save water** Ninety percent of our water supply comes from rivers. Using water more efficiently will mean more is left in the rivers. Malaysians use 47 litres more than the United Nations' recommended water usage of 165 litres per day. Adopting water-saving practices in your daily lifestyle will have a positive impact on our raw water availability in the long run. See graphic.

CONCLUSION:

The present article shows that the ranges of DO, COD, BOD and total coliform in the river water are above the permissible limits of BIS for drinking water. The WQI of River Beas is rated as good. BOD (0.87 mg/l) of the upper stretch of river Beas (HP) is less than that of the lower stretch (3.75 mg/l; Punjab). Necessary prevention steps should be taken in order to treat the industrial and domestic wastewater, before it is discharged into the river. This will help in protecting the aquatic biodiversity of the river.

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