

Yamuna
a dying river



Save Yamuna *Save Delhi*



यमुना हमारी सांस्कृतिक विरासत, आस्था का प्रतीक है और जीवन दायिनी है। हम उन सभी के प्रयासों का समर्थन करते हैं जो यमुना को प्रदूषण मुक्त बनाने में लगे हैं। सरकार के 3500 करोड़ रूपयों के बाद भी यमुना मैली रही। पिछला भूल कर आईए एकजुट हो यमुना को प्रदूषण रहित करें।

Atmaning

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यमुना बचाओ दिल्ली बचाओ



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7 राज्यों से होकर बहने वाली यमुना नदी का दिल्ली में सबसे कम 48 कि०मी० का हिस्सा है, पर उसको सबसे ज्यादा गन्दगी दिल्ली के 22 कि०मी० तिमारपुर से ओखला तक के हिस्से में मिलती है। 10 वर्षों तक यदि यही स्थिति रही तो यह मृतप्रायः हो जाएगी। इसकी कुल लम्बाई 1376 कि०मी० है और दिल्ली में करीब 2 प्रतिशत (48 कि०मी०) यमुना का हिस्सा है।

दिल्ली में करीब 18 नाले यमुना में गिर रहे हैं जिन्होंने यमुना को ही नाला बना दिया है। प्रदूषण नियंत्रण बोर्ड की रिपोर्ट के अनुसार जल बोर्ड के दिल्ली की 45 प्रतिशत आबादी का कचरा बिना ट्रीटमेंट के यमुना में पहुंचता है। इसमें सबसे ज्यादा हिस्सेदारी नजफगढ़ ड्रेन की आती है।

यमुना में किस नाले से कितना प्रतिशत गंदा पानी आता है :-

• नजफगढ़ नाले से	61 %
• शाहदरा नाले से	17 %
• दिल्ली गेट नाले से	6 %
• बारापूला नाले से	2.2 %
• तुगलकाबाद नाले से	2.2 %

यमुना सबसे ज्यादा प्रदूषित दिल्ली में होती है। 1993 में पहला यमुना एक्शन प्लान तैयार हुआ था। सरकार ने यमुना को प्रदूषण मुक्त बनाने के लिए कार्य शुरू किया था, उसके बाद भी 2004 से 2011 तक यमुना को प्रदूषण मुक्त बनाने की दिशा में पर्याप्त कार्य नहीं हुआ। यद्यपि 1254 करोड़ रुपये खर्च हुआ फिर भी यमुना को प्रदूषण से निजात नहीं मिली। यद्यपि सरकार दावा करती है कि उसके पास 2330 एमएलडी सीवरेज को ट्रीट करने की क्षमता है, परन्तु इन ट्रीटमेंट प्लांट्स में 1500 एमएलडी पानी ही ट्रीट हो रहा है।

दिल्ली में लगभग 668 एमजीडी सीवरेज जनरेट होता है और सरकारी दावों के अनुसार 554.72 एमजीडी ट्रीटमेंट कैपेसिटी है और 330 एमजीडी गंदा पानी इन ट्रीटमेंट प्लांट्स में पहुंचता है। इस तरह से आधा सीवरेज सीधा बिना ट्रीटमेंट के यमुना में पहुंचता है।

इसके अलावा जो सीवरेज ट्रीटमेंट प्लांट्स लगे हैं वे भी केवल दिखावे के लिए हैं। उनमें से ज्यादातर की क्षमता केवल पानी को साफ करके 30 बीओडी तक लाने की है। जबकि प्रदूषण नियंत्रण बोर्ड की सलाह के अनुसार ट्रीटमेंट प्लांट लगाए जाने चाहिए जिनकी क्षमता पानी को साफ करके उसमें प्रदूषण 10 बीओडी तक लाया जा सके।

यदि इच्छाशक्ति, कार्य कुशलता और ईमानदारी से कार्य किया गया होता तो काफी हद तक इतने सालों में दिल्ली में यमुना को प्रदूषण मुक्त करने में कुछ तो सफलता प्राप्त होती। गुजरात में साबरमती की स्थिति भी लगभग ऐसी ही थी और गुजरात सरकार ने इस पर काम किया और आज साबरमती नदी की काया पलट गई है और 9 सालों में केवल 1150 करोड़ रुपये के खर्च से यह लंदन की थेम्स नदी जैसी बन गई है।

यमुना हमारे लिए केवल एक जलवाहक नदी ही नहीं है, बल्कि हमारी सांस्कृतिक विरासत, आस्था का प्रतीक है और जीवनदायिनी है। हम उन सभी के प्रयासों का समर्थन करते हैं, जो यमुना को प्रदूषण मुक्त बनाने लगे हैं और उनके साथ खड़े हैं। हमारा यह संकल्प होगा कि धीरे-धीरे जो हमारी पार्टी की सरकार ने गुजरात में साबरमती नदी में किया, उसी तरीके से यमुना में भी किया जाए। इसके लिए हम कार्यबल गठित करेंगे। सभी स्टैक होल्डर्स को इस कार्य में शामिल करेंगे और विशेषज्ञों तथा पर्यावरणविदों की मदद से इस कार्य को पूरा करेंगे।

विजय

गोयल

9 मार्च, 2013
अध्यक्ष

यमुना : एक दृष्टिकोण

हम क्या चाहते हैं :-

- जो नदी बहती नहीं है, वह नदी नहीं कहलाती। इसमें बहाव लाना होगा।
- नदी के बहाव को बनाए रखने के लिए उसका कुल 50 प्रतिशत पानी ही निकालना चाहिए।
- क्योंकि इसका पानी पीने के लिए इस्तेमाल होता है। इसलिए इसमें सीधे गन्दे नाले नहीं डलने चाहिए।
- गन्दे पानी को ट्रीट करके कृषि व उद्योग क्षेत्र में काम में लाना चाहिए।
- नदी का जो विस्तृत रूप है, उसमें नदी का 'खादर' एक आन्तरिक हिस्सा है। इस फ्लड प्लेन की सुरक्षा होनी चाहिए व उसको कानून के द्वारा सुरक्षित करना चाहिए।
- नदी के साथ जो लोग जीवनयापन कर रहे हैं, उनकी आवश्यकताओं का ध्यान रखना चाहिए। इन भागीदारों जैसे – मछुआरे, किसान एवं गोताखोर का रोजगार बनाए रखना चाहिए। नहीं तो नदी का प्राकृतिक स्वरूप प्रभावित होता है।
- अनधिकृत कालोनियों और झुग्गी-झोंपड़ी क्षेत्रों खासतौर से नजफगढ़ से पंजाबी बाग तक जहां सीवर लाईन भी नहीं पड़ी हैं, वहां तुरन्त सीवर लाईन डलनी चाहिए। अभी केवल दिल्ली 8000 कि०मी० सीवर लाईन हैं, जिसे कम से कम 18000 कि०मी० होना चाहिए।
- अभी केवल 21 सीवर ट्रीटमेंट प्लांट हैं। अनधिकृत व जे०जे० कलस्टर को जोड़कर दोगुने होने चाहिए।
- अभी सीवेज ट्रीटमेंट प्लांट 37 प्रतिशत कम कैपिसिटी पर चल रहे हैं। जैसे – रिटाला, कुंडली का एसटीपी जो शाहदरा ड्रेन पर है।
- यमुना के दोनों तरफ 100 स्क्वेयर कि०मी० क्षेत्र है। उसका हम बरसाती पानी को संचित करने के लिए प्रयोग कर सकते हैं और रिजर्वोयर की तरह इस्तेमाल कर सकते हैं। 2 कि०मी० इसकी चौड़ाई है, बाकी लम्बाई है। इस बारे में सरकार ने कुछ नहीं किया। सरकार ने कहा था कि दिल्ली में रिजर्वोयर बनाना था, जो बना नहीं।
- यमुना के साइड में अगर आप पानी जमा करेंगे तो अंडर ग्राउंड स्तर बढ़ेगा।
- यदि हरियाणा 20 प्रतिशत अतिरिक्त पानी दिल्ली को दे दे तो हम उसे यमुना में छोड़ देंगे, जिससे प्रदूषण का स्तर भी कम होगा और यमुना का स्तर भी ऊपर उठेगा। यह कहना गलत होगा कि यह पानी बर्बाद हो रहा है। इसे हम ओखला बैराज तक ले जाकर वहां दोबारा पीने के पानी के लिए इस्तेमाल करेंगे।
- जैसे एनडीएमसी क्षेत्र में है, वैसे ही पीने के साफ पानी को जनता को और जो एसटीपी से पानी ठीक किया गया है, उसे पार्को, खेती, उद्योग में इस्तेमाल किया जाना चाहिए।
- यमुना के रिवर बेड में अब और कब्जे और निर्माण नहीं होने चाहिए और वहां जनता तो छोड़ो, सरकार को भी मलबा नहीं डालना चाहिए।
- जनता की भागीदारी को सुनिश्चित कर शामिल किया जाना चाहिए ताकि लोग यमुना के प्रति सजग हों और स्कूल, कॉलेजों में पर्यावरण के अन्तर्गत इस तरह की चीजें शामिल हों।

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Save Yamuna Save Delhi

...The River is dead. It just has not been officially cremated...

Yamuna: A sacred River

The Yamuna or Jumna is the largest tributary river of the Ganges (Ganga) in northern India. Originating from the Yamunotri Glacier at a height of 6,387 meters on the south western slopes of Banderpooch peaks in the Lower Himalayas in Uttarakhand, it travels a total length of 1,376 kilometers (855 mi) and has a drainage system of 366,223 square kilometers (141,399 sq mi), 40.2% of the entire Ganges Basin, before merging with the Ganges at Triveni Sangam, Allahabad, the site for the Kumbha Mela every twelve years.

It crosses several states, Uttarakhand, Haryana and Uttar Pradesh, passing by Himachal Pradesh and later Delhi, and meets several of its tributaries on the way, including Tons, its largest and longest tributary in Uttarakhand, Chambal, which has its own large basin, followed by Sindh, the Betwa, and Ken. Most importantly it creates the highly fertile alluvial, Yamuna-Ganges Doab region between itself and the Ganges in the Indo-Gangetic plain. Nearly 57 million people depend on the Yamuna waters. With an annual flow of about 10,000 cubic billion meters (cbm) and usage of 4,400 cbm (of which irrigation constitutes 96 per cent), the river accounts for more than 70 per cent of Delhi's water supplies.

Just like the Ganges, the Yamuna too is highly venerated in Hinduism and worshipped as goddess Yamuna, throughout its course. In Hindu mythology, she is the daughter of Sun God, Surya, and sister of Yama, the God of Death, hence also known as Yami and according to popular legends, bathing in its sacred waters frees one from the torments of death. Yamuna has a special place in Hinduism with various stories surrounding Lord Krishna and Mahabharata. Vassudeva took Lord Krishna, on night he was born in Jail, across Yamuna. The tale states that the river was very turbulent on night Lord Krishna was born, and the river sanctified only after it touched Lord Krishna feet. Yamunotri, the source of river Yamuna, is one of the four pilgrims of Char Dham. The river is considered twin of Ganga as it runs parallel to Ganga.

The water of Yamuna is of "reasonably good quality" through its length from Yamunotri in the Himalayas to Wazirabad in Delhi, about 375 km, where the discharge of waste water through 15 drains between Wazirabad barrage and Okhla barrage renders the river severely polluted after Wazirabad in Delhi. One official describes the river as a "sewage drain".

Yamuna River Water Uses

The river water can be used either in abstracted form or as non-abstractive or in-situ water uses.

Abstractive Uses

The river water is abstracted at different locations for varied uses. At two places i.e. Hathnikund / Tajewala and Okhla, the water abstraction is significant. The annual abstraction at various locations is given presented in table below

Location	River water abstraction (MLD)	Abstraction Usage
Hathnikund	20,000	Irrigation, Drinking water supply and others
Wazirabad	1,100	Drinking water Supply
Wazirabad to Okhla Stretch	5,000	Irrigation and others
Okhla to Etawah Stretch	400	Irrigation, Drinking water supply and others
Etawah to Allahabad Stretch	475	Irrigation, Drinking water supply and others

Domestic Water Supplies

Significant use of Yamuna water for domestic water supply is found in urban agglomerations like Delhi, Mathura, Agra and Allahabad.

Irrigation

Irrigation is an important use of Yamuna river water. It has been estimated that about 92% of Yamuna river water is used for irrigation. In the entire Yamuna basin the irrigated land is about 12.3 million hectares and approximately half of it (about 49%) is irrigated exclusively from surface water. At present there are four irrigation canals transporting the Yamuna river water to the command areas

Hydropower

The total potential for hydropower development in the entire Yamuna basin is about 1300 MW. The present utilization is only one third of total potential.

Fisheries

The Pisciculture is neither practiced on large scale nor undertaken in organized manner in the area. However, the entire river stretch and tributaries is being utilized for fishing in unorganized manner.

Growing aquatic plants

The most prevalent aquatic plant in River Yamuna is the water hyacinth, mostly found near barrages.

Navigation

River Yamuna and its tributaries are not suitable for Navigation. Low flow of river further restricts this activity. However, some potential exists to use the stretch between Agra and Allahabad for navigation.

River bathing and washing

River bathing and washing is one of the most prevalent uses of river water in the country. Much of this is attributable due to religious rituals.

Recreational uses

The Yamuna River is used very rarely for recreational purpose due to unsuitable conditions like rocky river bed, low water depth etc. However, at urban centers and at various barrages it has the potential for water sports like boating.

Cattle bathing and washing

It is estimated that about 70% of the total cattle population in the Yamuna basin uses flowing water of river and canals for bathing and watering purposes directly which impacts water quality substantially (CPCB, 2006-07).



Pollution of Yamuna

In 1909 the waters of the Yamuna were distinguishable as "clear blue", as compared to the silt-laden yellow of the Ganges. However, due to high density population growth and rapid industrialization today Yamuna is one of the most polluted rivers in the world, especially around New Delhi, the capital of India, which dumps about 58% of its waste into the river.

There are three main sources of pollution in the river, namely households and municipal disposal sites, soil erosion resulting from deforestation occurring to make way for agriculture along with resulting chemical wash-off from fertilizers, herbicides, and pesticides and run-off from commercial activity and industrial sites.

Contribution to Yamuna's pollutions

1. There is not one drop of Natural Fresh River Water in River Yamuna in Delhi & Beyond.
2. Almost 97% of Original River Waters are taken away from River Yamuna, only a few kilometers from its birthplace – Yamnotri.

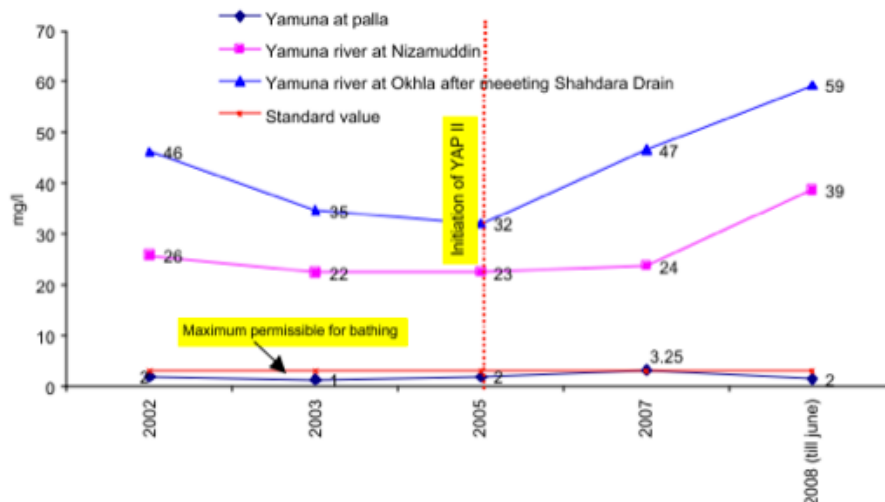
3. What flows in Mathura – Vrindavan is simply filthy and heavily polluted sewage from Shahdara Drain of Delhi, polluted Hindon and other smaller wastewater drains.
4. Despite of Supreme Courts approved High Powered Committee's directives, the minimum adequate flow of Natural Fresh Waters is not being allowed to flow in River Yamuna.

Contribution of drainages in Delhi in polluting Yamuna

Drainage	Percentage
Najafgarh drain	61.0%
Shahdara drain	17.0%
Delhi Gate drain	6.0%
Bara Pula drain	2.2%
Tughlaqabad drain	2.2%

Water Quality measurement metrics

River quality standards are DO values above 5.0 mg/l and BOD values less than 3.0 mg/l



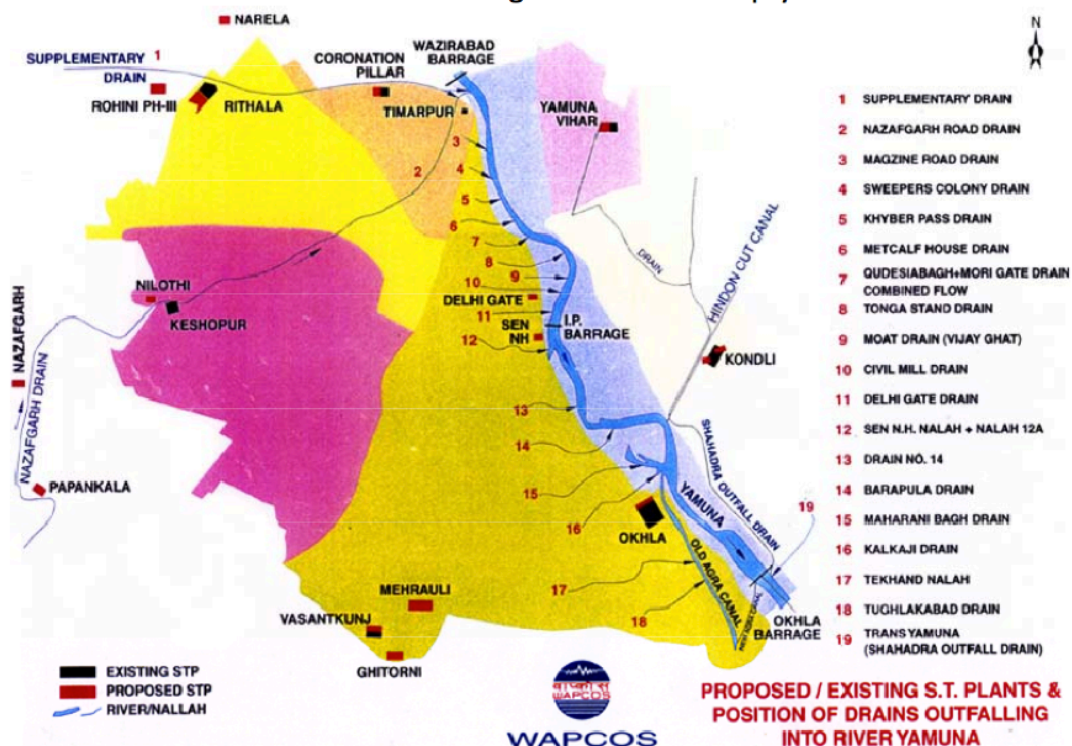
Delhi's grand contribution to Yamuna's pollutions

Yamuna River passing through 22 km in Delhi was once described as the lifeline of the city, but today it has become one of the dirtiest rivers in the country. Nearly Rs 12,000 crore has already been spent to clean up the river; the Yamuna continues to be polluted with garbage while most sewage treatment facilities are underfunded or malfunctioning. The 2% of stretch i.e. 22 km of Yamuna in Delhi is responsible for 80% of entire pollution. The reasons are:

1. Delhi generates about 3,684 million liters per day (mld) of sewage while the city's installed waste water treatment capacity is only 2,330 mld. More than 937 mld of waste is not treated. Out of Delhi's 2,330 mld treatment capacities, 37 per cent is under-utilized and 1,270 mld of sewage is untreated and allowed to enter the river every day.
2. The Yamuna's 22-km stretch in Delhi is barely 2 per cent of the length of the river, but contributes over 80 per cent of the pollution load.
3. Pollution levels in the Yamuna have risen. Biochemical oxygen demand (BOD) load has increased by 2.5 times between 1980 and 2005 - from 117 tonnes per day (TPD) in 1980 to 276 TPD in 2005.

4. The faecal coliform count, which indicates the presence of disease causing micro-organisms, is nearly 25,000 times more than the limit prescribed for bathing.
5. Delhi and Agra together account for 90 per cent of the pollution in the river.
6. There are 22 drains entering Yamuna in Delhi and almost 3,500 million liter of waste water enters Yamuna everyday without any treatment.
7. The Najafgarh drain contributes to 60% of the total wastewater and 45 per cent of the total BOD load being discharged from Delhi into the Yamuna.
8. The capacity for treatment -increased from 450 MLD in 1977 to 1,270 MLD in 1997.
9. A Central Pollution Control Board study on river water quality at the upstream of Wazirabad shows dissolved oxygen (DO) level at 7.5 mg/l and BOD level at 2.3 mg/l. At downstream Okhla, the DO level declined to 1.3 mg/l with the BOD at 16 mg/l, indicating considerable deterioration in water quality due to discharge of sewage and industrial effluents. The coliform count at Wazirabad is 8,506/100 ml whereas at Okhla, it increases to 3,29,312/100 ml

The Yamuna in Delhi – 22 sewage filled drains empty into the river



(Sources: White Paper by the Ministry of Environment and Forests, Centre for Science and Environment)

Yamuna: Now a Dead River

"The River is dead. It just has not been officially cremated."

Ironically, the river once pride of Indian civilization is now a dead river. Indian government's own websites claim that there is not a drop of natural river water after it flows through Delhi. The United Nations website has a report declaring the river a dead one.

As per a report of Center for Science and environment (CSE), Delhi stretch of the river is not only dead but had an overload of coliform contamination. Two years later, the pollution data shows no respite to the river.

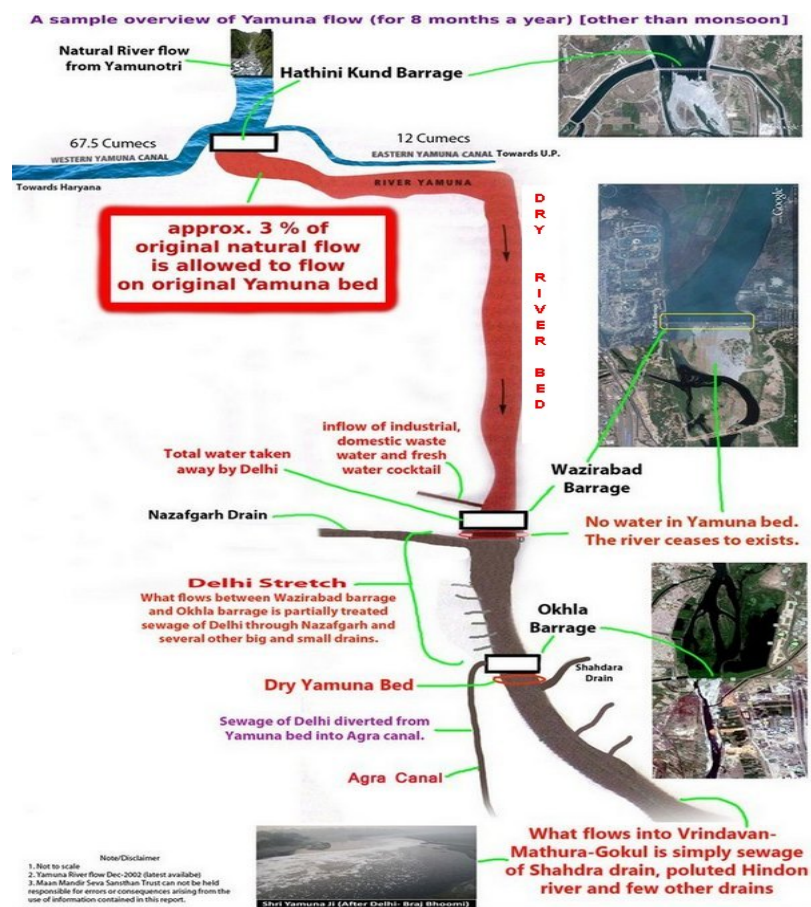
Why is Yamuna a dead river?

1. **Hathini Kund Stretch** - At Hathini Kund Barrage, all most, 97% of natural fresh waters are taken away after a few kilometers of its birth. This withdrawal which is made in the name of irrigation, industrial development and drinking water is grossly mismanaged and reckless with little or no accountability. In most places, the river is a sudy, listless morass of human, industrial and agricultural wastes, literally an open sewer. In some places, the Yamuna is now so heavily exploited that broad parts of riverbed lie naked and exposed to the sun for much of the year.
2. **New Delhi Stretch** - On its course, whatever little reaches New Delhi through various canals is soaked away by it down to the last drop. New Delhi marks the end of river. What flows beyond is simply partially treated sewage of Shahdra drain of Delhi and other smaller drains both domestic and industrial (not one drop of original fresh water from the river). The point where Shahdra drain meets River Yamuna, The Central Pollution Control Board of India in its January 2010 report gives an average BOD of 51.3 mg/ltr (Max permissible for Bathing is 3) for 10 months with a high of 103. There is however NO Dissolved Oxygen at any given time (minimum should be 6 mg/l). The total coli forms count at one point was 23,00,00,00,000 (max permissible is 5000).
The 22-km Delhi stretch of the Yamuna, which is barely 2 per cent of the length of the river basin, continues to contribute over 80 per cent of the pollution load in the entire stretch of the river. There is also no water in the river for virtually nine months. Delhi, impounds water at the barrage constructed at Wazirabad where the river enters Delhi. What flows in the river subsequently is only sewage and waste from Delhi's 22 drains. In other words, the river ceases to exist at Wazirabad.
3. **Delhi sewage contributes** 80 % of the pollution to River Yamuna while it only has 2% of the total length of 1376 km of the entire stretch of Yamuna (cpcb 1996). It is noteworthy that Delhi has 40 % of the total sewage treatment capacity of India with hardly 3 % of India's population when India has a capacity to treat only 18.6 % of its sewage (cpcb 2006). Even the best of its available sewage treatment technologies or the ones being installed in the future do not have the capacity to bring down BOD (Biological Oxygen Demand- chief parameter of water quality) to 15 Mg/Ltr while India's own standards have a benchmark of 3 Mg/Ltr.

4. **Lack of Dilution Capacity** - No amount of treatment can bring the qualities of Fresh natural water in a river. Even the much hyped & expensive interceptor sewerage project will not restore the river to class C—bathing quality (Biochemical oxygen demand (BOD)-3mg/l) waters as ordered by the Supreme Court of India. The project promises to reduce the BOD discharged by Najafgarh and Shahdara drains to about 12 mg/l that too under the condition that if and only if all planned interceptions take place. No projections for coli form counts are available. The report is also silent on the water quality parameters in the river Yamuna after the implementation of the project.

The river needs dilution capacity – minimum ecological flow at all costs. *Any river does.* Flows are needed for maintaining the river regime, making it possible for the river to purify itself, sustaining aquatic life and vegetation, recharging groundwater, Support livelihoods, facilitating navigation, preserving estuarine conditions, preventing the incursion of salinity, and enabling the river to play its role in the cultural and spiritual lives of people.” The latter appears to be a very important component in the Indian context.

This also means that there is just no water available to dilute the waste. The issue of a basic minimum flow in the river has been discussed time and again, but with water becoming more and more scare and contested, Delhi’s upstream neighbors are reluctant to release water. Delhi itself is water greedy and sucks up each drop that is released as its share. The river is then reduced to a drain for the filth and waste of the city’s inhabitants.



What has government done?

Government has wasted a lot of money and resources to achieve nothing till date

Yamuna Action Plan (YAP), I, II and III?

To supplement the efforts of State Governments in addressing the problem of pollution of river Yamuna, Government of India is implementing Yamuna Action Plan (YAP) with assistance from Japan International Cooperation Agency, Government of Japan in a phased manner since 1993 but with zero success.

Yamuna Action Plan (YAP -I): YAP-I, which commenced in April, 1993 was completed in February 2003 at a total cost of Rs. 682 crore covering various pollution abatement works, including creation of Sewage Treatment capacity of 753.25 million liters per day (mld).

Yamuna Action Plan (YAP -II): YAP-II was approved in 2003 at an estimated cost of Rs. 624 crores with a completion period of 5 years. The major items of work in YAP - II such as rehabilitation of sewerage network and Sewage Treatment Plants (STPs) and construction of new STPs.

Yamuna Action Plan (YAP -III): Further, under YAP-III project for Delhi with an estimated cost of Rs.1656 crores has been approved in 2011. The above information was given by the Minister of State (Independent Charge) for Environment and Forests Shrimati Jayanthi Natarajan in a written reply in the Rajya Sabha on 21-August, 2012.

The third phase of YAP initiated with an estimated cost of Rs. 1656 crore, works for rehabilitation of damaged trunk sewers, rehabilitation and modernization of sewage treatment plants and construction of new state of art plant is envisaged. The information was given by the Minister of State for Water Resources and Minority Affairs Shri Vincent H. Pala in a written reply to a question in Lok Sabha on 30-August, 2012.

But the Parliamentary Committee on Environment and Forests has found that the all mission to clean Ganga and Yamuna has failed. The committee sais that the pathetic condition of Yamuna which has virtually turned into a nala to carry sewage falling into it from various drains, is deplorable in the report tabled in both Houses of Parliament.

Delhi Jal Board's Interceptor Plan

In 2006-2007 Delhi Jal Board introduced its pet interceptor plan—to lay over 60 kilometers of sewers along Najafgarh, Supplementary and Shahdara drains. In the process of giving shape to the massive hardware programme nothing concrete was done to arrest pollution in the river. Today, as the data of the Central Pollution Control Board (CPCB) the pollution levels have only worsened. The CPCB monitors the river at upstream of the Wazirabad barrage, at Nizamuddin (midstream) and downstream of Okhla barrage (after meeting the Shahdara drain)

It is clear that the Delhi Jal Board has failed to meet the directives and deadlines of the Supreme Court order in the “and quiet flows mailee Yamuna” in WP[C]

725/1994. The Court ordered the DJB to restore the dissolved oxygen levels to 4 mg/l in the river so that it can be used atleast for bathing purposes.

PMO office has passed the buck to Delhi Jal Board

Instructions have also been given by the Prime Minister's Office that Delhi Jal Board should ensure that the performance of the 72 million gallons a day capacity sewage treatment plant (STP) at Keshavpur, renovated/commissioned recently, is stabilized so that it functions optimally and the effluent meets the norms. The Delhi government has been asked to ensure that the performance of STPs and common effluent treatment plants (CETPs) is optimized to meet effluent quality norms.

Government has accepted it's grand Failure

The government has admitted in Parliament that its multi-crore Yamuna Action Plan (YAP) has failed to achieve the 'desired improvement' in the water quality of Yamuna in Delhi and Uttar Pradesh. But minister of state for environment and forests, Namo Narain Meena, was also quick in passing the buck to growing population and other states for the failure of the project. In a reply to an unstarred question, the government said that Rs 686 crore spent till date under the YAP-I and YAP-II had not achieved the desired results because the population upstream was increasing and cities were diverting water from the river for drinking and other purposes, cleansing the Union ministry of any blame.

Ganga, Yamuna "no cleaner" now than 20 yrs ago, says Jairam Ramesh

In a frank admission, Government on Friday said in Lok Sabha that rivers Ganga and Yamuna were "no cleaner" now as they were two decades ago despite spending over Rs 1,700 crore. "I admit with full responsibility that Ganga and Yamuna are no cleaner than 20 years ago," said environment minister Jairam Ramesh while responding to a Calling Attention Motion on checking pollution in rivers and lakes in India. He said a "determined and renewed effort" was required to cleanse these major rivers.

Money Spent on Yamuna?

Rs 4,439 crore has literally gone down the drain called the Yamuna. Delhi and Uttar Pradesh have told the Supreme Court that they have spent Rs 4,124 crore on making the river's water potable, but the Central Pollution Control Board's latest report shows that Yamuna's water still resembles that of a drain. Anguished by the unfruitful attempts by the governments of Delhi, UP and Haryana in reducing pollution in Yamuna, the Supreme Court, which has been monitoring the 'cleaning up' of the river for the past 18 years, had on 11 October, 2012 directed the three governments to specify the exact amount spent on the river.

What Should be Done?

1. Put enough water from Hathini Kund Barrage: At Hathini Kund Barrage, all most, 97% of natural fresh waters are taken away after a few kilometers of its birth. This withdrawal which is made in the name of irrigation, industrial development and drinking water is grossly mismanaged and reckless with little or no accountability. Enough water should be put in river Yamuna's bed so that the ecology can be maintained.
2. The Supreme Courts approved High Powered Committee's directives to insure minimum adequate flow of 10 cumecs of Natural Fresh Waters to be allowed to flow in River Yamuna all around the year
3. Solve Sewage Problem of Delhi: Delhi has already got 22 sewage treatment plants, which together add up to 40 per cent of the total installed sewage treatment capacity in India. But the fact is that these plants remain grossly underutilized.

Because the city does not have drainage to convey all our excreta to the sewage treatment plants. It is expensive to build sewage drainage but even more expensive to maintain it. Today, the bulk of our city is not connected to underground drainage. It also finds that it can never repair enough. The end result is that where there is a sewage treatment plant, there is no waste to treat.

Delhi has 668 mgd sewage water and as per Government sources only 554.72 mgd gets treated. Thus, ~300mgd sewage water goes to Yamuna untreated. It may be noted that the existing plants are treating the water till 30 BOD instead of 10 BOD (which is recommended)

According to statement released by Central Pollution Control Board (CPCB) only 37% of the capacity of Sewage Treatment Plants and Common Treatment Plant gets utilized.

But that is only part of the story. Worse, we forget that the majority of Delhi lives unconnected to underground drainage in what we call unauthorized and illegal colonies. We forget that these areas will have sewage and that this will flow into open drains criss-crossing the city. But these are the same drains, flowing past colonies, in which the sewage treatment plant disposes of its treated effluent.

In this pollution scheme, the illegal unconnected waste of the majority is being mixed with the treated waste of the minority. The result is obvious: growing pollution in the river. We can never clean Yamuna until we can treat the sewage of all in the city.

Thus, these unauthorized and illegal colonies should be immediately connected to the Sewage Treatment Plant and should not be allowed to flow into the River Yamuna untreated. All unauthorized and illegal colonies should have an operational sewage system.

Moreover the existing sewage system should be ramped up from 8,000 km to 18,000 km in Delhi.

4. Efficient working of STP's (Sewage Treatment Plants) Ensuring that existing STPs work to their optimum capacity in quality and quantity of output through participatory and accountable governance, ensuring that new STP capacities are set up in a time- bound manner and are decentralized and use biological treatment methods that require less inputs of power, materials and land and make recycling of water easier at local level is required urgently
5. Rain Water Harvesting & Ground Water Conversation: The Monsoons is a great source of water for Delhi. Every year we see that Delhi seems flooded after the first rain of Monsoon. This water should not be wasted and the same should be utilized to conserve Ground Water. Baoli structures and stepwells are examples of rainwater harvesting and storage at a large scale, while cistern collection of roof water is a small-scale solution. India has been creating infrastructure to collect monsoon rainfall for centuries for use during the dry season. And yet, this collective memory of rainwater as a resource appears lost in current water management and development master planning. Rainwater harvesting appears as a marginal idea. Moreover the ground water should be used judiciously. A through awareness of ground water usage and conversation should be generated. The groundwater withdrawals are dangerously unmonitored, and significantly contribute to decreases in stream and river flows.
6. Keep waste out of waterways: Water quality and public health hinges on controlling waste and keeping wastewater out of waterways. The state of the Yamuna is ubiquitous with waste and sewerage south of the Wazirabad Barrage in New Delhi. Untreated or partially treated wastewater, dumping, and open defecation are main sources of pollution in urban areas. Additional sources of pollution include agricultural run-off of chemical and fertilizer applications, bathing of livestock, industrial effluents, and cultural and religious rites. Furthermore, the lack of sewerage infrastructure to convey and treat human and industrial wastewater has resulted in the direct outfall of raw sewage into the Yamuna River. During storm and flood events, the raw sewage in the river rises to cover large swaths of land, further contaminating agricultural fields and sources of food, and setting up a scenario for a public health disaster through the spread of waterborne disease.

The existing system is not capable of handling Industrial waste. Thus water from the Industries should not leave without being treated. The industries not complying with the same should be heavily fined considering the damage on river Yamuna far more. The Common Effluent Treatment Plants been setup should be monitored in accordance with all parameters prescribed by the Central Pollution Control Board. The analyses results should be made public. The management committee should be held liable for any violations of the prescribed standards.

Moreover, Inventory of the chemicals used by the member units should be mandatory for the member units to reveal the information regarding the types of raw materials, its quantity, by products, production process and the final product. Any industry using hazardous chemicals should be asked to minimize the use and take corrective measures to finally phase

out such chemicals. These should not be diluted in the larger volumes to aggravate the problem.

Emphasis on the cleaner production should be made. Even the industrial policy advocates end of the pipe solutions as intermediary steps and not the solution to the pollution. To start with, the Board and the individual units shall take steps to identify key toxic chemicals in their raw material and effluents, and commit to reducing the release of the same to any media (air, water, land) through process changes, and material and product substitution expeditiously (from one to five years depending upon individual units' economic capacity). The "National Cleaner Production Centre" (NCPC) in India, has been established as an initiative taken by the United Nations Industrial Development (UNIDO), United Nations Environment Programme (UNEP). This centre brings out many publications and has demonstration projects in sectors like paper and pulp, dyeing, electroplating etc., which could be replicated at other places rather than only looking into the end-of-pipe solutions.

Communities have right to know. Most of these CETP's discharge into the water bodies and land, which is a common property resource. There are many communities which are dependent on these resources for their livelihood, thus making it the fundamental right to know the contamination levels. And also the authorities shall make available to the communities the memorandum and articles of association of the CETP company and the proposed agreement between the CETP company and the member industries.

7. *Dual water supply distribution system:* A substantial reduction in human consumption of river water is achievable if treated wastewater is reclaimed for irrigation and agricultural use. A dual system has two separate water distribution systems: one supply freshwater for potable domestic use, the other supplies treated wastewater for agriculture and irrigation. This approach effectively repurposes wastewater into valuable fertilizer for improved crop yields; reduces fresh water withdrawal demands by establishing wastewater as a reliable supply; and prevents contaminants from entering freshwater resources and drinking supplies

Dual water supply systems exist in many cities and countries worldwide and are an increasingly common solution to water-strapped communities and vulnerable ecosystems, including the southern US, Israel, Australia, Singapore, and more recently in Canada, South Africa and China.

8. *Declare Yamuna Bank as Protected area:* The dumping on Yamuna bank should be banned and the bank should be declared "Protected area". No dumping should allowed in these areas
9. *Public Awareness and Participation:* An Alternative Action Plan for the Yamuna requires connecting with the people and cultures that surround its banks, and meaningfully including stakeholders in shaping solutions for the river. To engage the public there must be a legitimate platform for public involvement that establishes trust between citizens, professional experts and government agencies. Public dis-enfranchisement will continue without change to the current process of land use planning and

development. Moreover, without public interest, education, and behavior change, the future of Yamuna will remain bleak.

Public education and involvement need to be a strong component to Yamuna's future – one that includes women and children, the natural and primary teachers of society, and the next generation of citizens. Lack of educational opportunities for women, and inclusion in community meetings and decision-making processes, leaves half of the population uninformed: the half that is perhaps the largest consumer of water for cooking, cleaning, washing clothes, and collecting drinking water. The education and integration of women is essential to mobilize change and educate children, especially at a community and village scale

The role of government is to create an entry point for public involvement in improving local water bodies and the riverfront of the Yamuna. Momentum for public interest in the river must begin with a tangible place or public recreation area. The government's responsibility is to bridge this interest in the riverfront to the larger river system and local water bodies and the riverfront of the Yamuna. Momentum for public interest in the river must begin with a tangible place or public recreation area. The government's responsibility is to bridge this interest in the riverfront to the larger river system and basin. Solutions to restore the Yamuna require attention and action at both the local land basin-wide scale. While the government may lament there is not enough money for river clean-up, there remains a significant public asset to be tapped: population. There is a lot of people power to create change if the government is able to communicate that people's health, well-being, culture and life are connected to the river and is dependent on the public's 'action. The people, in turn, must trust the government to be a true partner for change, and capable of meaningful reform. The government needs take dramatic steps to keep pollution out of waterways, restore flow to the river, and protect the integrity of the river basin.

Indian Constitution (Fundamental duties)

- Article 51 A (g) *"It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wild life and to have compassion for living creatures"*

References:

The report is based upon data from various reports from the institutes (listed below), and various organizations working on the Yamuna issue: Central Pollution Control Board, Centre for Science & Environment, Ministry of Environment and Forests and Down to earth, Save Yamuna, Yamuna Water Keepers, etc