Hindon 2030: Vision to Action Plan

This document is subject to discussion and updates can be made as and when required.

Submitted to Divisional Commissioner Meerut during Hindon Committee meeting on 8th December 2016.

Contents

1. Introduction

The Hindon River, which is a tributary of the Yamuna River, originates in the Saharanpur district and flows across the industrial belt of Western Uttar Pradesh before discharging into the Yamuna River in Noida. Due to urban, agricultural, and industrial waste which is being released without sufficient treatment into its waters, the Hindon is now one of the most polluted stretches in the Ganga basin.

In May 2015 the 2030 Water Resources Group (2030 WRG) was requested by Mr. Rajendra Singh to support a participatory process to rejuvenate the Hindon. Since then 2030 WRG, India Water Partnership (IWP) and Jan Jal Jodo Abhiyan (JJJA) have held several field missions and meetings with stakeholders from government, civil society, industry and academia. In 2016, 2030 WRG was tasked by the Chief Secretary, Government of Uttar Pradesh to develop roadmap for the rejuvenation of the Hindon river. As a starting point, 2030 WRG and IWP have documented 20 good practices of work being done by local authorities, NGOs, communities, industries, research institutes and others to clean the river. This was the genesis of a multi-stakeholder platform - the Hindon Yatra Exhibition & Symposium series in which good practice examples and knowledge was shared across the basin with the aim to demonstrate the power of multi-stakeholder action.

Participatory approach

A multi-stakeholder tributary approach to river rejuvenation is gaining momentum across the country. Recent examples include the water quality monitoring stations of National Mission for Clean Ganga, World Wildlife Fund's cleanup of the Ramganga in Uttar Pradesh and the Noyyal River Restoration Federation in Tamil Nadu.

In the Hindon River Basin there is a dynamic and growing **civil society movement** for rejuvenation of surface water bodies and groundwater. Several NGOs and individuals have been active for the past 15-20 years. They have documented the state of the river basin through reports, scientific research, videos etc. They also initiated awareness campaigns and environmental education programs for children and youth in schools on the need for water conservation and pollution abatement.

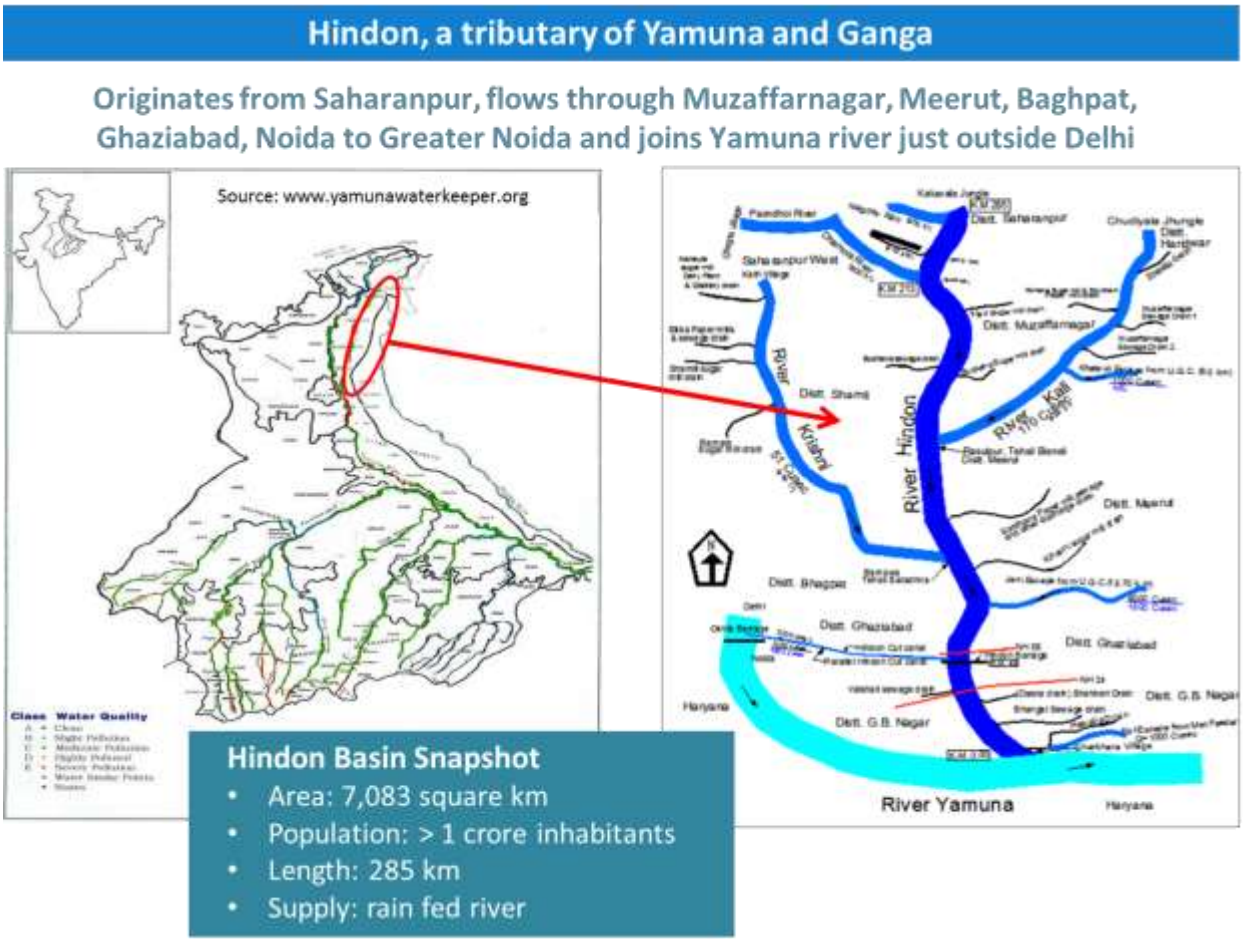
The **State Government** has demonstrated increased interest and commitment to rejuvenate the Hindon River in an integrated and participatory manner. Proposals have been made by officers of the Irrigation Department for additional water recharge structures, rubber dams and other structural measures to be put in place to increase water availability and environmental flow in the basin. On the water quality side, a rapid assessment study is planned and the State Pollution Control Board is considering a comprehensive monitoring and information system, which will support evidence-based decision making on cost-effective measures and track progress made to rejuvenate the river in the long term.

Also **local industry players**, particularly paper & pulp mills, have invested in installing water treatment plants as a result of government Charters and Guidelines. An online monitoring system has been put in place which automatically sends data regularly to the State Pollution Control Board. Paper mill owners have taken the lead in taking responsibility for pollution abatement in the Hindon basin and they are keen to show the results of their investments on the reduced water intake (recycling) and improved water quality outflow of their plants.

Purpose of this document

As a result of technical workshops conducted in major towns across the basin, the Hindon Vision to Action Plan was drawn up. A governance structure was agreed with local stakeholders and key (knowledge) partners at (inter)national level to take the process forward into a long term engagement to rejuvenate the water resources of the Hindon basin. This document is meant as a milestone in the participatory process. It will guide the way forward from awareness raising, mobilization, project ideation to implementation with impact on the ground.

2. Situation & problem identification



There are many sources of the pollution discharged into the Hindon River and its tributaries Kali (west) & Krishni which form an entirely rain-fed water resources system. The river system is receiving industrial and municipal untreated waste water which is being discharged directly or via drains into the river. Apart from the urban and industrial point source pollution, agri-chemical run-off from the fields is contributing to the water quality problems as non-point source pollution. As per CPCB assessment (2013), “the (surface) water quality of Hindon is not meeting the criteria with reference to dissolved oxygen, conductivity, BOD, total coliform and fecal coliform”.

The problems do not end with the surface water degradation. In parts of the basin the ground water quality is not fit for dinking purpose as per specifications proceeded by Bureau of Indian Standards (BIS,

2012). A wide range of highly toxic organo-chlorine pesticides and heavy metals have been identified in the ground and surface water throughout the catchment, at levels that exceed national and international standards for safe bathing and drinking water by several orders of magnitude. River Kali itself contribute more than 50% of total metallic load to river Hindon before it reaches Ghaziabad, which is also highly industrial and urbanised. Furthermore, wxcessive use of fertilizers and pesticides in agriculture across the basin has also increased nitrate in the sub-soil (phreatic) zone.

Apart from water quality issues, availability of water is also problematic in the Hindon basin. As per CGWB data of National Hydrograph station all the concerned districts from which Hindon passes exhibit decline trend of water level resulting in drying of a number of dug wells & shallow ground water structures (particularly in non-canal command areas). As groundwater aquifers and surface water are naturally interconnected, inefficient water usage patterns in domestic, industrial and agricultural sectors are contributing to the water quality problems in the Hindon River. Over-abstraction of groundwater in recent decades by farmers and other water users has caused a negative trend of declining ground water levels in the region. This resulted in a prolonged period of about 6 months in which the river is almost devoid of water. Being a non-perennial river, it is sluggish throughout the year except during high flow periods in the monsoon season. This seasonal variation reflects that river water composition is influenced by annual cycles. Biological and geological breakdown in the summer season leads to the accumulation of chemicals during the dry session, followed by dilution of those chemicals by monsoonal rainfall.

Above mentioned problems can be solved only through an integrated approach with a package of water quality and water quantity related measures across sectors and at a river basin scale – from ridge to valley. The human factor plays an important role when addressing the causes of pollution. Positive social, cultural and spiritual attitudes towards the precious water resources are required to tackle the existing issues.

Hindon Rejuvenation: a call for collective action

As rejuvenating the Hindon river is a collective responsibility, a participatory water resources management approach is required, involving all stakeholders

Challenges

Heavily deteriorated water quality in the Hindon River causes a health threat to people, flora and fauna and constraints to socio-economic development in the region

Urban pollution:

- Untreated domestic sewage is released into the river in urban areas

Industrial pollution, for example by:

- Paper mills
- Sugar mills
- Distilleries
- Slaughter houses

Agricultural contamination:

- Non-point source pollution by agricultural run-off (chemicals, pesticides etc.)

Solutions directions & opportunities

1. **CONTINUOUS FLOW**: Augmentation of water by storing rainwater → Raising ground water tables and surface flow

2. **UNPOLLUTED FLOW:**
   - Implementation and enforcement of proper treatment of industrial effluent
   - Separation of river and urban sewage by interception & diversion of drains to treat waste water in STP's
   - Reuse of treated water for agriculture

3. **HUMAN FACTOR:**
   - Social and cultural behavior change (for example solid waste, sanitation, spiritual practices, encroachment of riverine in urban areas etc.)

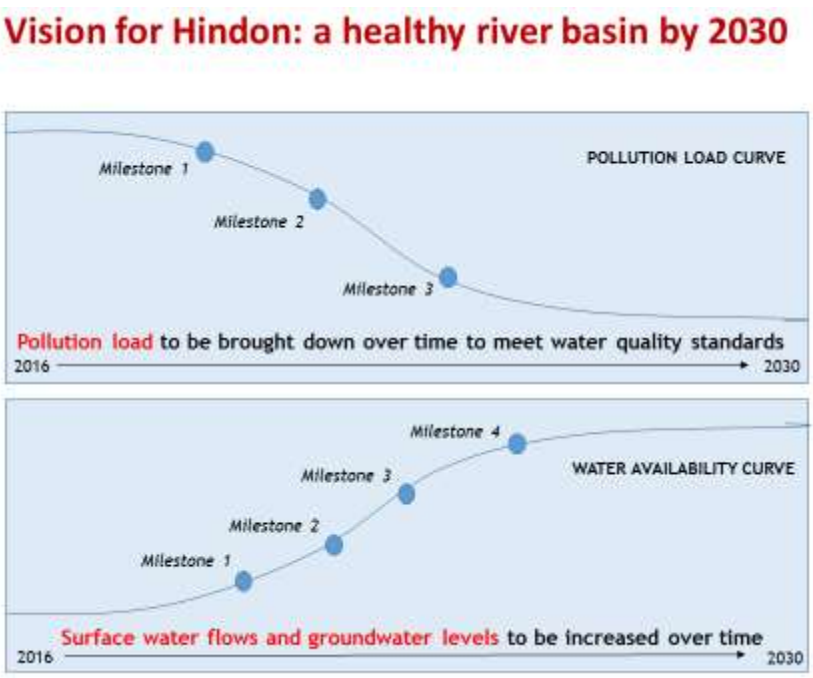
3. Vision statement 2030

The vision for Hindon[1] was prepared in consultation with local stakeholders across the basin and technical experts. It aims at reducing industrial, urban and agricultural pollution loads into the river and increase (ground) water levels by 2030. It was endorsed by participants in the Hindon Yatra events between June and December 2016.

Vision

The vision for 2030 is **a naturally balanced eco-system consisting of both ground- and surface water, which supports life for flora, fauna and people in the region**. The same principles as for the Ganga basin are valid for the Hindon basin as well, with small variations:

- *Nirmal Dhara (unpolluted flow)*: Pollution load discharged into surface and groundwater should be (close to) zero by 2030.
- *Aviral Dhara (continuous flow)*: Since the Hindon and its tributaries are non-perennial rivers (apart from the Paondhoi River), it has to be understood that the river beds will fall dry for a portion of the year.



Goal

A healthy river is a healthy region: the overall goal is **to secure sufficient and safe water to support long term sustainable economic and social growth in the Hindon region** and safeguard water needs of all water users, including the eco-system. In other words, there should be **enough clean water for each sector (domestic, ecology, agriculture, and industrial)** to satisfy current and future requirements.

[1] In this document "Hindon" means the hydrological drainage area from its source(s) near Saharanpur to its confluence with the River Yamuna in Greater Noida.

Targets / milestones

Nirmal Dhara: with no pollution flowing into Hindon water bodies in the future, water quality is expected to improve over time. With targeted interventions, the current highly polluted status of Hindon will transform towards surface water quality in compliance with bathing water standards.[2]

Anticipated timelines:

- In 5 years: surface water suitable for industrial and irrigation purposes (class E)
- In 10 years: surface water sustaining wildlife & fisheries (class D)
- In 15 years: surface water suitable for bathing (class C and B)

Aviral Dhara: with judicious water use and water conservation, groundwater aquifers to be recharged sufficiently and ultimately reach sustainable levels. Surface water flow may, during a portion of the year actually reduce to near zero level due to zero discharge from industries and domestic sector. The duration of the period in which there will be hardly any flow (or none at all) in the Hindon river will depend on the groundwater aquifer levels and implementation of zero-liquid discharge policy.

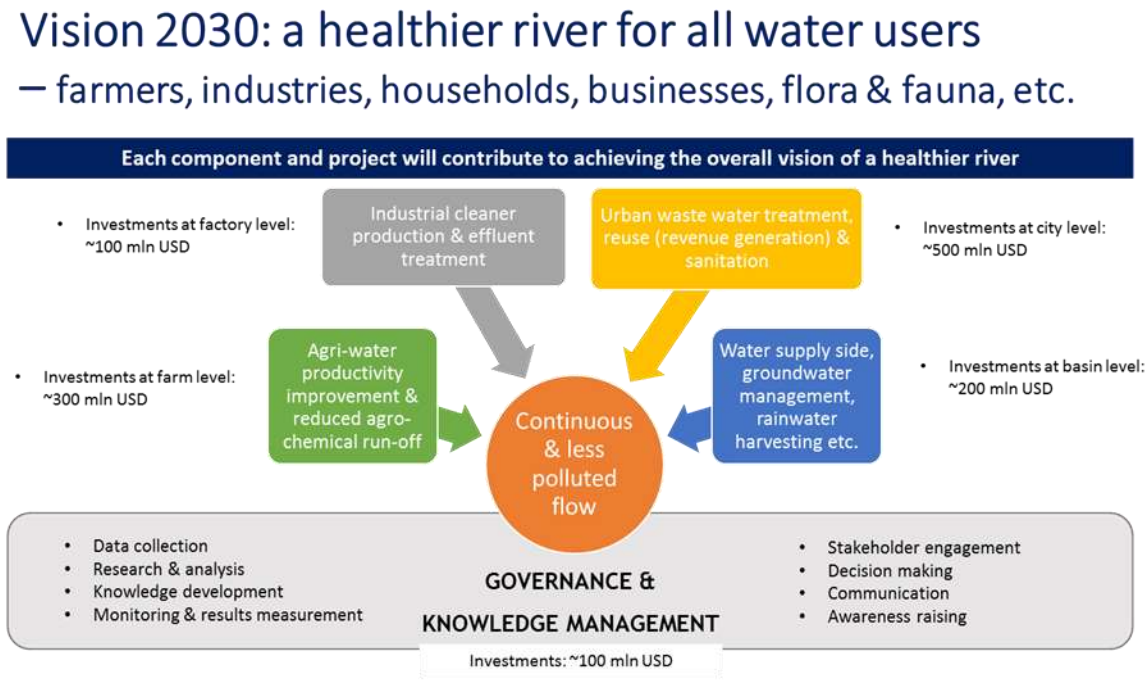
4. High-level roadmap & packages of measures

Package of measures to achieve vision by 2030

A total package of measures with investments from public and private sources of about 1.2 billion USD (8000 crores INR) is expected to be required to achieve the vision of a healthy river. Areas of intervention include agri-water productivity improvement, industrial cleaner production, domestic waste water treatment & reuse and groundwater recharge, increasing environmental flows in the river and conserving and reviving the river basin's biodiversity. The estimate is based on a rough calculation of measures in each area of engagement:

- Urban/domestic — 500 million USD (3,300 crores INR)
- Industry — 100 million USD (665 crore INR)
- Agriculture — 300 million USD (2,000 crores INR)
- Infrastructure and environment — 200 million USD (1,330 crore INR)
- Program facilitation & monitoring — 100 million USD (665 crore INR)

[2] See water quality standards set by Central Pollution Control Board. Designated best use of fresh water in the river is not expected to be potable (class A).



Background calculations

Details with indicative background calculations for each package of measures can be found in annex 1.

Phase wise approach

Following a phase-wise approach to revive the Hindon River by 2030, investments to be leveraged in the first phase of 4 years (2017-2020) would be around 300 mln USD, in phase 2 (2021-2025) around 600 mln USD and phase 3 (2026-2030) around 300 mln USD. Sources of funds would be government (local, State and national), private (CSR) funds, bi- and multi-lateral donor organisations and local stakeholders.

5. Hindon Yatra: from vision to immediate action

Rationale behind Hindon Yatra Exhibition & Workshops

While there are multiple challenges in the Hindon basin, there are also many good initiatives on the ground. The 2030 WRG and its partners documented 20 good practice examples from the Hindon basin itself and across different stakeholder groups with the aim **to demonstrate the power of collective action and multi-stakeholder collaboration**.

The Hindon Yatra Exhibition & Symposium traveled throughout the basin aiming at mobilisation of stakeholders and triggering positive action. The main objective was to change the mindset of stakeholders from pointing fingers at each other to identify the "main culprit of pollution" to the realization that everyone can make a contribution towards a better tomorrow. The process has led to widespread awareness and greater collaboration among different stakeholders as well as the generation of several new project ideas and proposals to implement the vision.

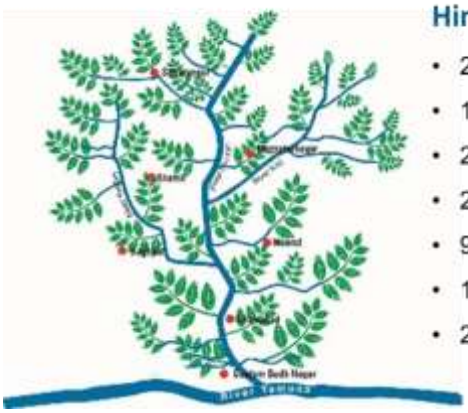
UP Chief Minister launches Hindon Yatra Exhibition

The Hindon Yatra symposium and exhibition was inaugurated by the Chief Minister of Uttar Pradesh in Lucknow on June 27th. About sixty participants from industries, NGOs, communities, local government from across the Hindon Basin traveled to Lucknow to share their efforts to rejuvenate the Hindon river, heavily polluted by industrial and urban waste. 2030 WRG in partnership with India Water Partnership, Jal Jan Jodo Abhiyan, FICCI and the UP Government launched a report titled "Hindon Yatra – a multi-stakeholder journey towards river rejuvenation" documenting case studies of multiple local efforts to rejuvenate the river.

The Chief Minister, Akhilesh Yadav inaugurated the exhibition showcasing all these works and applauded the local stakeholders from Hindon with a pledge of financial resources to scale up their work. He said "Hindon would become an integral part of his party's Green Manifesto". The Launch was preceded by a symposium which focused on demonstrating how every dimension of the complex processes involved in rejuvenating a river are already in motion in the Hindon.

Traveling exhibition & symposium series throughout the Hindon basin

Following the course of the river, the Hindon Yatra Exhibition & Symposium traveled from Saharanpur to Shamli, Muzaffarnagar, Baghpat and Ghaziabad between June and November 2016. Local events were organized with involvement of NGOs, local industries, research institutes and administration. The culmination of the Hindon Yatra took place in a one day event in Delhi with the aim to demonstrate the power of partnership and promote a participatory and integrated approach to rejuvenation of the Hindon River and its tributaries as part of the larger Ganga basin. Impressions of these events can be found in annex 2.



Hindon Yatra events

- 27 June – Lucknow inauguration
- 13 July – Saharanpur
- 26 August – Shamli
- 27 August – Muzaffarnagar
- 9 September – Baghpat
- 16 November – Ghaziabad
- 23 November – Delhi

6. Suggested projects and activities for next 1-2 years

The Hindon Yatra Exhibition & Case Study Book demonstrated several existing good practice examples and facilitated knowledge exchange across administrative boundaries in the entire Hindon river basin. Different areas of engagement are envisaged in which existing good practices will have to be multiplied, replicated and scaled up to work towards a healthier river system. Possibly 100 (or more) projects need to be implemented in the next 10-15 years to achieve the vision of a naturally balanced eco-system supporting life for flora, fauna and people by 2030.

Annex 3 provides an overview of indicative projects and activities which have been suggested by local stakeholders during the technical workshops held across the basin between June and November 2016. Below is an indicative summary from Saharanpur. Projects are still being submitted by initiators and may need to go through a quality improvement process to be eligible for funding from identified sources.

This is work in progress.

WORK IN PROGRESS

No.	Saharanpur project suggestions made by local stakeholders	Initiator
1	Water Quality Database	IIT Roorkee
2	Ponds clean up through innovative technology & management for weeds recycling	IIT Roorkee
3	Ponds maintenance and pollution prevention through innovative wetlands systems	IIT Roorkee
4	Forestation along the bank of Hindon with the aim of recharging springs	Paondhoi Bachao Samiti
5	Urban Solid Waste Management	Muskan Jyoti Samiti
6	Pilot plant for sewage treatment through constructed wetland system in Dhamola	Nagar Nigam
7	Treatment and reuse of wastewater by Star Paper Mill in addition to existing situation	Star Paper Mill
8	Alternate practices to control and check biomass and crop residue burning in open field	Muskan Jyoti Samiti

7. Governance for Hindon Rejuvenation Partnership (HRP)

On 23 November 2016 in Delhi, participants of the concluding Hindon Yatra Exhibition symposium signed up symbolically to commit themselves to the next implementation phase of the Hindon rejuvenation endeavor. To support implementation of the vision for the years to come a comprehensive governance structure for a Hindon Rejuvenation Partnership (HRP) is being designed.

A concept note for a proposed HRP was discussed with key partners such as FICCI, WWF, GIZ and representatives of local stakeholders at a brainstorming session on Wednesday 9th of November in IFC office in Delhi. Chairman of India Water Partnership and MD of WAPCOS proposed to house a Hindon Basin Council and Secretariat for the HRP in IWP/WAPCOS for the next two years.

Following the Hindon Yatra symposium on 23 November 2016 in Delhi a group of key partners met to discuss the need for a Ganga Tributary Advisory Group to scale up the work being done within the tributaries of the Hindon, Ramganga and Yamuna to other parts of the country.

Hindon Basin Committee: The Government of UP has established a Hindon Basin Committee chaired by the Divisional Commissioners of Meerut and Saharanpur. The Committee comprises largely of different government departments engaged in the Hindon such as UP Pollution Control Board, Irrigation Department, 2030 WRG, India Water Partnership, Jal Jan Jodo Abhiyan and local NGOs. The UP Government tasked 2030 WRG to develop a vision and action plan. The Committee Chair requested 2030 WRG and IWP to work with responsible government departments and community organisations to develop concrete projects. 2030 WRG documented community development activities in the Basin and helped establish a coordinating mechanism that could complement the work being done by the different government bodies across the Hindon. During the Hindon Yatra workshops more than 30 project ideas were generated. Proposals are being worked out to be included in the Action Plan, which will be presented to the Hindon Basin Committee in December.

Hindon River Basin Council: During a recent consultative meeting (Oct. 20, 2016) with about 25 key stakeholders, it was decided that the basin-wide stakeholder engagement process initiated in 2016 through the Hindon Yatra Exhibition & Symposium series would be worth structuring on a more systematic basis. This would allow to reap the benefits of improved participation and collaboration and ensure stakeholder support going forward. It was agreed that this process could be anchored by the India Water Partnership as a secretariat facilitating a so-called 'River Basin Council' consisting of key stakeholders from within the Hindon basin.

Purpose of the Council would be:

a) To continue basin-wide information sharing, coordination, knowledge exchange and collaboration across stakeholder groups and administrative borders;
b) To develop a pipe-line of tangible project proposals and sectoral initiatives and ensure implementation of projects for the Hindon Vision and Action Plan on the ground;
c) To provide a feedback loop with inputs into the formal government process through stakeholder representation in the Hindon Committee, chaired by Divisional Commissioner Meerut.

Through the establishment of district level committees, consisting of local actors from different stakeholder groups, basin-wide representation in the River Basin Council can be assured. The local committees will need to appoint a local coordinator who calls for monthly meetings in presence of IWP

as secretariat. Quarterly meetings of the River Basin Council will be hosted on a rotating basis by the different local committees across the Hindon districts. The local coordinator will host and chair that particular Council meeting. Permanent co-chair will be IWP, who will also prepare minutes and report back to the secretariat and formal government committee on Hindon.

Secretariat: The secretariat will initially focus on the Hindon basin and therefore provide services to the Hindon Rejuvenation Partnership" (HRP). It will operate across the Hindon River Basin from its source in Shevalik hills to its confluence point with Yamuna in Gautam Budh Nagar. Scope of work will include areas of operation such as domestic and industrial waste water treatment, solid waste management, agri-water use efficiency, water literacy, community mobilization and environmental conservation.

The HRP secretariat will facilitate implementation of work being done by various stakeholders across the Hindon basin towards achieving the vision of a healthy river basin. The secretariat will serve as a catalyst to incubate new projects, mobilize public and private funding and provide handholding and monitoring support to project owners as required. It may also work towards improved water resource management policies and build capacity on governance processes relevant for river rejuvenation in the project area.

The secretariat will facilitate data collection and analysis, and make efforts to communicate and disseminate the good work going on in the basin. It will lay the foundations for building a multi-stakeholder approach to river basin management supported by local stakeholders and global principles of IWRM based on the guidelines developed by GWP and the EU Water Directive Framework. The secretariat will be supported with technical support from (global) water experts and particularly technology partners from The Netherlands and other knowledge partners with extensive experience in the management of water resources.

Ganga Tributary Advisory Group: A high-level Advisory Group will comprise of 10-12 senior environmental and strategic water related experts representing different stakeholder groups, particularly government, research institutes, industry associations, donors and the private sector. Contrary to the River Basin Council that consists of stakeholders located from within the basin, the Advisory Group members would be representatives from resourceful organizations and donors from outside the basin. The Advisory Group will promote the concept of participatory river basin water resources management for tributaries in the wider Ganga basin, strategically guide the river rejuvenation process in Hindon and other tributaries from vision to action, facilitate access to program/project financing, support development of new financial mechanisms if required and advise on how to replicate and scale up this model to the entire Ganga basin and beyond (possibly linked with South-South cooperation).

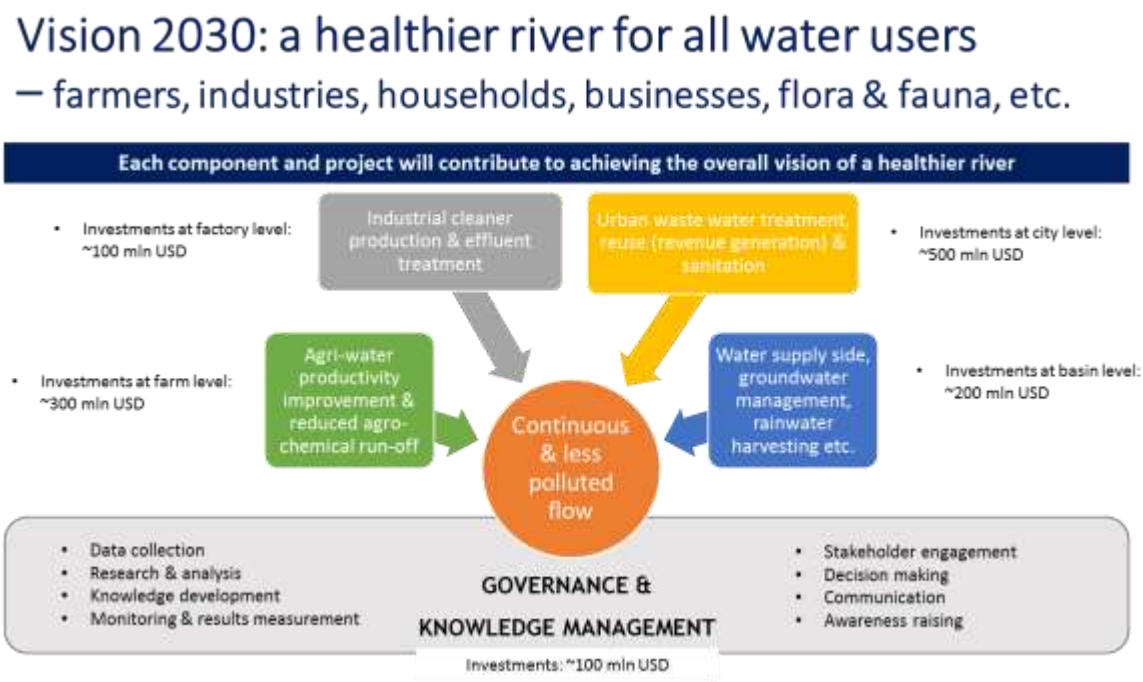
8. Fundraising strategy

Efforts are underway, to mobilize resources from government, private sector and donors to help rejuvenate the river. As an initial step, the Millennium Alliance will provide seed funding for innovative businesses with social and environmental impact for the Hindon and other river basins under a targeted call for River Rejuvenation as part of their Water & Sanitation focus area.

9. Monitoring & evaluation

Implementation guidelines including indicators / parameters to monitor progress and success in achieving the goal and targets as well as measure impact on the ground will need to be prepared by the secretariat under guidance of the Ganga Tributary Advisory Group and endorsed through the Hindon Basin Council.

Annex 1: Indicative calculations for packages of measures



Package 1: Urban waste water management measures

Assuming that centralized sewage treatment plants (STP) connected by sewage networks are the preferred option for waste water management in urban areas, an investment package of around 500 million USD (3,300 crores INR) will be required to contribute to a healthy river by 2030.

The following rough calculation was made:

- Total population in the Hindon River basin is around 10 million (1 crore) inhabitants, out of which an estimated 40% lives in urban areas. Based on an urban population in the Hindon River basin of about 4 million (40 lakh) inhabitants and an average sewage production of 100 liters per capita per day, a total sewage production of around 400 MLD (million liters per day).
- Capital investment (CAPEX) in STPs is usually around 300,000 (3 lakh) USD per MLD, which results in (400 MLD * 300,000 USD =) 120 million (12 crores) USD.
- Capital investment (CAPEX) in sewage networks are usually around 2.5 * cost of treatment (120 million USD) = 300 million (30 crores) USD.
- This would result in an urban waste water treatment package of (120 + 300 =) 420 (42 crores) million USD investment. Including population and economic growth this may result in an estimated amount of 500 million USD (3,300 crores INR).

Package 2: Industrial cleaner production measures

A package of measures for the industrial sector in the Hindon basin would consist of a mixture of investments in (upgradation of) effluent treatment plants (ETP) for larger factories and corporates, cleaner production measures (resulting in less energy, water and inputs used for production and more efficient manufacturing process), relocation of (smaller) factories and polluting MSME workshops from towns to industrial clusters with Common ETPs (CETP) etc. A total estimated package of investments of around 100 million USD (665 crore INR) is expected to be required to contribute to a healthy river by 2030.

The following rough calculation was made:

- Assuming that there are about 10 corporates (>1,000 employees) active in Hindon basin, they would each have to invest about 1 million (10 lakh) USD for cleaner production and effluent treatment measures, which adds up to 10 million (1 crore) USD.
- Assuming that there are about 100 medium size entreprises (100-1,000 employees) in the Hindon basin, with each an investment package of 100.000 (1 lakh), this would add up to another 10 million (1 crore) USD.
- Assuming that there are about 3,000 small entreprises (10-100 employees) in the Hindon basin, with about 10,000 USD required investment each (incl. relocation and CETP measures), this would result in a package of 30 million (3 crore) USD.
- Assuming that there are about 300,000 (3 lakh) households involved in micro entreprises in the Hindon basin[3] and that around 200 USD is expected per micro enterprise as capital investments (CAPEX) towards pollution control measures, a total of (300,000 * 200 =) 50 million (5 crore) USD investment would be required.
- Estimated total investments required: (10 + 10 + 30 + 50 =) 100 million USD (665 crore INR).

Package 3: Agricultural water productivity and pollution reduction measures

Investments required in water saving technologies and agro-chemical run-off reduction measures in the agricultural sector are expected to add up to around 300 million USD (2,000 crores INR).

The following rough calculations were made:

- Calculation per acre:
    - The Hindon River basin covers around 7,000 km^2, which means 700,000 (7 lakh) hectare.
    - Assuming that on average around 50% is farmland, this means around 500,000 (5 lakh) hectare farmland.
    - Usually around 600 USD investments (CAPEX, advisory services and training cost) per hectare are required to make the agricultural sector water efficient and less polluting.
    - This adds up to a total package of (500,000 * 600 =) 300 million USD (2,000 crores INR).
- Calculation per farmer:
    - Assuming that an estimated 60% of the total population of 10 million (1 crore) inhabitants in the Hindon river basin is engaged in farming, one can assume that there are 6 million (60 lakh) people involved in farming.
    - With an average of 6 persons per household, this means 1 million (10 lakh) households in the Hindon basin are engaged in farming.
    - Per farmer around 300 USD investments are expected to be required on average, adding up to 300 million USD (2,000 crores INR).

[3] With 10 million inhabitants and average of 5 person per household, there are around 2 million households in the Hindon River basin. Assuming that about 50% are farmers, this leaves about 1 million urban households, of which probably around 700,000 are employees and 300.000 (15%) are micro enterprises (1-10 employees). These micro enterprises are assumed to have an average income of 1,000-2,000 USD per year and an asset base of around 500-1,000 USD.

Package 4: Infrastructural & environmental measures

An estimated amount of around 100 million (10 crores) USD will be required for ecological restoration & conservation measures, such as wetlands, tree plantation, wildlife programs, biodiversity / leisure parks and beautification including river front development etc.

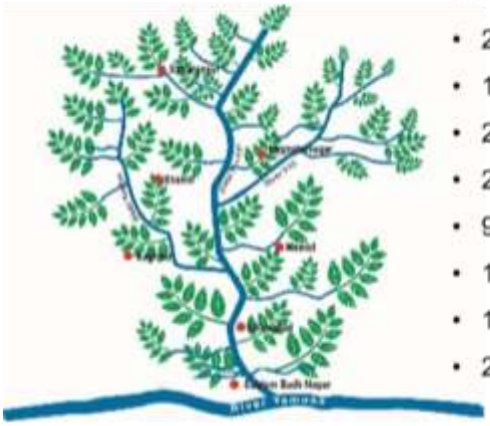
To augment the flow for river rejuvenation (increase environmental flow) and ensure sustainable groundwater levels infrastructural measures such as canals, groundwater recharge structures, rubber dams etc. will be required. Estimated cost will be around 100 million (10 crores) USD.

A total investment in infrastructural and environmental measures of about 200 million USD (1,330 crore INR) is expected to be required towards a healthy river in 2030.

Package 5: Program facilitation & monitoring

For data collection, research & analysis, knowledge development, communication and dissemination as well as stakeholder engagement, governance and evaluation & results monitoring a total cost of 100 million USD (665 crores INR) can be expected to be required.

Annex 2: Hindon Yatra events in the Basin



Hindon Yatra events

- 27 June – Lucknow inauguration
- 13 July – Saharanpur
- 26 August – Shamli
- 27 August – Muzaffarnagar
- 9 September – Baghpat
- 16 November – Ghaziabad (confirmed)
- 18 November – Gautam Budh Nagar (tentative)
- 23 November – Delhi closing event

After a successful inauguration of the Hindon Yatra Exhibition & Symposium Series by the Honorable Chief Minister of Uttar Pradesh, Mr. Akhilesh Yadav in **Lucknow** on June 27th, the traveling exhibition has continued its journey to Saharanpur, Shamli, Muzaffarnagar and Baghpat.

In **Saharanpur** about 1.000 people participated in the event held on Wednesday July 13th. The UP Department of Irrigation & Water Resources together with Saharanpur Municipal Corporation and the 2030 Water Resources Group organized a successful program to raise awareness and promote good practice solutions to improve the alarming situation of the water bodies in the Hindon river basin. The basin stretches from the Shevalik hills to Greater Noida, where it flows into the Yamuna, which in turn is a tributary to the Ganga River. As such Hindon is part of the Ganga basin. In the morning clean-up activities were held at the banks of the river Dhamola to symbolize a renewed momentum to revive Saharanpur's water bodies. Dignitaries including Saharanpur's Divisional Commissioner, Mr. MP Agarwal spoke at the Janmanch auditorium to the audience, including several hundreds of youth. The Hindon Yatra book with 20 good practice case studies was launched and the exhibition was officially inaugurated. In the afternoon a project development workshop was held at the IIT Campus in Saharanpur. Several good suggestions were made, which are now being worked out into concrete project proposals as part of a basin-wide Hindon action plan.

The Hindon Yatra event in **Shamli** on Thursday 26th of August in City Greens Auditorium was well-attended by high-level representatives of local industry, community, research organisations and administration. The District Magistrate extended his full support to the rejuvenation initiative and

proposed to establish a permanent committee to monitor the execution of the projects in Shamli. Dr. Umar Saif of HIFEED coordinated and moderated the event and inspired all dignitaries to make pledges and promises to take concrete project ideas forward into implementation. Children had practiced to sing a song about “Harnandi” (Hindon River) which was performed gracefully. Besides paintings and drawings youth had made 3D models depicting the sources pollution: fertilizers and pesticides in agriculture, industrial effluent and household sewage. Demonstrating thorough understanding of the issues and potential solutions to save water and revive the water bodies, the group of around 200 youth present was shining rays of hope for the future.

In **Muzaffarnagar** central government representatives attended a high-level symposium. The Union Minister of State for Water Resources, River Development & Ganga Rejuvenation, Dr. Sanjeev Baliyan apprised the audience about his affection to Hindon River from his childhood days, being from Muzaffarnagar’s constituency. He wholeheartedly promised to extend all possible help to restore the lost glory of the Hindon, Kali and other water bodies in this region. The Chairman of the Municipal Council, Mr. Pankaj Aggarwal showed dedication to execute several waste water treatment and solid waste management projects which are partially already on the way to improve the water quality in Kali River, which is one of the polluting tributaries of Hindon River. Ms. Sonia Luthra of the Art of Living moderated the event and she also promoted a solution to reducing water pollution through organic farming and the application of enzymes. As a result of intense and sincere deliberations during the afternoon sessions, partially in presence of the Minister himself, a list of nine project ideas has been compiled for Muzaffarnagar.

In **Baghpat** the District Magistrate and Chief Development Officer spearheaded a Water Walk attended by more than 2000 youth on Friday 9th of September 2016. Mr. Rajendra Singh, Waterman of India and

Stockholm Water Prize Laureate 2015 was special guest at the Hindon Yatra Exhibition & Symposium held in his ancestral town. Youth demonstrated their environmental awareness and concern with the water situation in the Hindon basin. In a technical discussion chaired by District Magistrate and moderated by 2030 Water Resources Group in the afternoon, many good practice examples were presented and constructive suggestions were made to improve the situation and work towards a healthier water system. For example, Mr. Vinod Saini, a progressive farmer from Meerut district said, “It is essential to reduce the use of chemical fertilizer, in place of which a natural vermi compost fertilizer can be used.” Farmers from Baghpat may attend a training in organic farming which will be organized by Jal Biradari Meerut. Another suggestion was to make a cropping map and encourage farmers to conserve water either by changing the cropping cycle or increasing water use efficiency.

In **Ghaziabad** a technical workshop was held hosted by the District administration in Vikas Bhawan on Wednesday November 16, 2016. Among over 75 participants were representatives of civil society organisations, research as well as local industry, Nagar Nigam and District officers. Topics discussed were mainly related to solid waste management to avoid littering of water bodies and waste water treatment, including bioremediation options inside drains. Several suggestions were made and participants showed their commitment to take action at household and community level.

Annex 3: Hindon Rejuvenation Project Proposals

WORK IN PROGRESS

No.	Saharanpur project suggestions made by local stakeholders	Initiator
1	Water Quality Database	IIT Roorkee
2	Ponds clean up through innovative technology & management for weeds recycling	IIT Roorkee
3	Ponds maintenance and pollution prevention through innovative wetlands systems	IIT Roorkee
4	Forestation along the bank of Hindon with the aim of recharging springs	Paondhoi Bachao Samiti
5	Urban Solid Waste Management	Muskan Jyoti Samiti
6	Pilot plant for sewage treatment through constructed wetland system in Dhamola	Nagar Nigam
7	Treatment and reuse of wastewater by Star Paper Mill in addition to existing situation	Star Paper Mill
8	Alternate practices to control and check biomass and crop residue burning in open field	Muskan Jyoti Samiti

WORK IN PROGRESS

No.	Shamli project suggestions made by local stakeholders	Initiator
1	Katha River Biodiversity Park	Natural History Research & Conservation Centre
2	Kehri Drain Bioremediation through Constructed Wetlands	Natural History Research & Conservation Centre
3	Waste water treatment inside drains through bioremediation method Nualgi / constructed wetlands	Shamli Nagar Palika Parishad
4	Common Effluent Treatment Plant (CETP) to reduce industrial pollution	Indian Industry Association, Chairman Shamli Chapter
5	Eco-Clubs in schools and environmental education	HIFEED
6	Baseline Survey	HIFEED
7	Plantation Program	Rotary & Lions' Club

WORK IN PROGRESS

No.	Muzaffarnagar project suggestions made by local stakeholders	Initiator
1	Water quality quick scan (baseline)	Nagar Palika Parishad / Paper Mill Association
2	Decentralised conventional primary water treatment plants (in drains) combined with sludge composter for energy generation	Nagar Palika Parishad
3	Constructed wetlands: decentralized water treatment through bioremediation (in drains) at three locations	Nagar Palika Parishad in cooperation with Aligarh Muslim University (AMU)
4	Common plastic recycling plant for paper industry cluster	
5	Common effluent treatment plant for large industries	
6	Solid waste management: scaling up implementation of MIT/SRGC pilot project	Shri Ram Group of Colleges
7	Enzymes to reduce water pollution in drains, ponds etc. and increase agricultural productivity through organic farming: scaling up from local pilots to district level	Art of Living

WORK IN PROGRESS

No.	Baghpat project suggstions made by local stakeholders	Initiator
1	Water for Life – Youth training & awareness	GPVS & C4Y
2	Eco-Clubs in schools	HIFEED
3	Module for youth about law & management to increase water literacy	IIM Lucknow, prof. Sengar
4	Water treatment inside drains through bioremediation using Nualgi method	District Administration?
5	Solid waste management in PPP mode	
6	Organic farming training in Meerut	Jal Biradari
7	Cropping map in relation to ground water map to educate farmers on need to change cropping patterns to match with water availability and/or conserve water through more water efficient methods/technologies	
8	Rooftop rainwater harvesting	District Administration
9	Interactive web-portal to monitor progress made to rejuvenate water bodies in the Hindon river basin	

WORK IN PROGRESS

No.	Ghaziabad project suggestions made by local stakeholders	Initiator
1	Constructed wetland implementation on STP.	Mr. Giri Saraswat, President, RWA Rajnagar Extention
2	Constructed wetland project with assistance of Ghaziabad Nagar Nigam near railway bridge civil sewerage drain.	Mr. Navneet Singh, Namami Harnandey
3	Massive plantation for afforestation on riverbed provided land given by Govt.	Mr. Vikrant Sharma, Jal Biradari
4	NGT process to get the promise fulfilled which state Govt. submitted as Hindon rejuvenation plan.	Mr. Akash Vashistha, Environmental Protection Group
5	Rejuvenate ponds nearby river by technology.	Mr. Trilok Singh, Save Water Committee
6	Solid waste segregation at household level: composting of kitchen wastage.	Mr. Pankaj Nigam, Legacy for Children / Daily Dump & Mr. Sudeep sahu, ARNYA ECO NGO

Annex 4: Hindon River Rejuvenation Partners

Organisations listed below have contributed to the Hindon vision development, Hindon Yatra Exhibition & Workshop series, good practice book and/or Hindon Action Plan. They are committed to make further contributions towards achieving the goal of a healthy river system by 2030.

1		Centre for Youth www.c4yindia.org	New Delhi
2		Maruti Papers Limited www.marutipapers.com	Shamli
3		Bindals Duplex Limited www.bindalpapers.com	Muzaffarnagar
4		WWF INDIA www.wwfindia.org	Delhi
5		Paper Manufacturers' Association	Muzaffarnagar
6		Parmarth Samaj Sevi Sansthan www.parmarthindia.com	Orai, Jalaun Uttar Pradesh
7		Irrigation Department, Uttar Pradesh www.irrigation.up.nic.in	Uttar Pradesh

8		Gramin Evam Paryavaran Vikas Sansthan	Baghpat
9		Neer Foundation www.theneerfoundation.org	Meerut
10		Uttar Pradesh Government www.up.gov.in	Uttar Pradesh
11		A2Z Builders www.a2zbuilders.co.in	Muzaffarnagar
12		Ganga Jalbiradari	Meerut
13		Sarthi Devi Raja Ram Public School	Shamli
14		The Art Of Living www.artofliving.org	Muzaffarnagar

15	Global Water Partnership South Asia India Water Partnership	India Water Partnership www.cwp-**india**.org	Gurgaon
16	WATER. POWER. INFRASTRUCTURE MINI RATNA-1 WAPCOS	WAPCOS LTD. **www.wapcos.gov.in**	Delhi
17	TARUN BHARAT SANGH	Tarun Bharat Sangh **www.tarunbharatsangh.in**	Alwar
18	FICCI	FICCI **www.ficci.in**	Delhi
19	पाँवधोई बचाओ आंदोलन सहारनपुर	Paondhoi Bachao Samiti	Saharanpur