



KNOWLEDGE, ATTITUDE AND PRACTICE
OF DELHIITES TOWARDS THE RIVER

YAMUNA



A Report

by



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...A research study by



A REPORT

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ACRONYM

BOD	Biological Oxygen Demand
CPCB	Central Pollution Control Board
CS	Can't Say
DJB	Delhi Jal Board
DK	Don't Know
DO	Dissolved Oxygen
EYC	Eastern Yamuna Canal
GoI	Government of India
HP	Himachal Pradesh
JBIC	Japan Bank for International Cooperation
LCS	Low Cost Sanitation
MCD	Municipal Corporation of Delhi
MoEF	Ministry of Environment and Forests
MLD	Million Litres per Day
NRCD	National River Conservation Directorate
NCT	National Capital Territory
PMC	Project Management Consultancy
STP	Sewage Treatment Plant
TEC	Tokyo Engineering Consultants Pvt. Ltd.
UP	Uttar Pradesh
YAP	Yamuna Action Plan
WYC	Western Yamuna Canal

EXECUTIVE SUMMARY

The river Yamuna, a major tributary of the river Ganges, originates from the Yamunotri glacier near Banderpoonch peak in the Mussourie range of the lower Himalayas. Arising from the source, river Yamuna flows through a series of valleys, for about 200 kms, in lower Himalayas and emerges into the Indo-Gangetic plains. The gradient of the river is steep here and the entire geomorphology of the valley has been influenced by the passage of the river. In the upper stretch of 200 kms, it draws water from several major streams.

Flowing through Poanta Sahib it reaches Hathnikund/Tajewala in the Yamuna Nagar district of Haryana state, where the river water is diverted into Western Yamuna Canal (WYC) and Eastern Yamuna Canal (EYC) for irrigation and drinking purposes. During the dry season, no water is allowed to flow in the river downstream of Tajewala barrage and the river remains dry in some stretches between Tajewala and Delhi.

The river regains water from the ground water accrual and contributions received from feeding canal through Som Nadi (seasonal stream) upstream of Kalanaur before it reaches Delhi. It (in its later stages) receives water from important tributaries like Chambal, Betwa and Ken before joining the river Ganga and the mythical underground Saraswati at Prayag (Allahabad) after traversing a total length of about 1400 Km. **It enters Delhi near Palla village after covering a distance of about 400 Km from its origin and exits from National Capital Territory of Delhi (NCT) at the village Jaitpur after traversing a distance of 50 km within the NCT.**

The river Yamuna flows through 5 states – Uttarakhand, Himachal, Haryana, Uttar Pradesh and Delhi.

For a significant length, the river Yamuna forms an interstate border, first between Uttaranchal and Himachal. Later between Haryana and Uttar Pradesh (UP) and further more between Delhi and Uttar Pradesh, before the river finally enters and flows through UP to finally merge with Ganga in Allahabad. This fact alone creates special problems for the river Yamuna as then no single state takes control of, or responsibility for, the upkeep and security of the river while each tries to upstage the other in diverting the river's water away from the river channel.

Plight of river Yamuna

The river has fallen victim to poor governance and civic indifference; it is being used as an oversized 'dust bin', and the civic authorities have found it to be cost-effective to allow untreated city waste water and sewage into the river. Diversion and abstraction of water from the river into canals upstream of Delhi has severely curtailed its flow and its selfcleansing capacity. Delhi contributes around 3,296 MLD (million litres per day) of sewage by virtue of drains falling into the river Yamuna. The absence of perennial flow in the river Yamuna and the huge quantity of waste it receives have together given it the dubious distinction of being one of the most polluted rivers of the country.

Initiatives so far

Various initiatives have been undertaken by the government and the civil society organizations. Most notable of them is the Yamuna Action Plan by the National River Conservation Directorate (NRCD) of the Ministry of

Environment and Forests (MoEF), Government of India (GoI) and the Japan Bank for International Cooperation (JBIC) in order to arrest the pollution in the river. Yamuna Action Plan (YAP), phase-I (1994-2002) and YAP phase-II are pioneering efforts, but a lot is yet to be done to revive the past glory of the river Yamuna.

Knowledge Attitude and Practice (KAP) study

To understand the level of awareness, knowledge, attitude and the personal equation that citizens of Delhi have with their cultural and lifeline heritage river, a **KAP study** was undertaken by PEACE Institute Charitable Trust and CMS Environment. The **KAP study** focused on the **Knowledge** level of Delhiites about the river Yamuna flowing in their city, the **Attitude** of the Delhiites towards river Yamuna — the principal natural water source for Delhi — and lastly the **Practice** of Delhiites in the context of river Yamuna.

The objectives of the study were to assess the knowledge and level of understanding among people in Delhi about the river Yamuna, map the personal linkages of the citizens in Delhi with river Yamuna, understand the condition of river Yamuna and the views of people about it, and the attitude and practices by the people in relation to the river Yamuna. Lastly, it also aimed to assess the willingness of various targeted groups to take actions for safeguarding the river Yamuna.

Methodology and approach

The primary data for the survey was collected through personal interviews of respondents representing different sectors and sections of the society. Stratified random sampling technique was used to select the respondents from across the NCT. Well-experienced and trained interviewers were deployed to carry out the fieldwork along with facilitators and senior researchers. The respondents were professionals, villagers, households (both from unauthorized and authorised colonies), industrialists, school children, youth, waste collectors and recycling agents, pandits and religious practitioners, real estate businessmen, mallahs, mahawats, dhobis, civil society groups and government officials. The respondents across NCT were stratified based on three criteria i.e. respondents living within 5 km radius of the river (25% i.e. 249); respondents from village/s where the river Yamuna enters (village Palla) or leaves (village Jaitpur) Delhi (25% i.e. 252) and respondents from the rest of the city - North, South, East and West (50% i.e. 503). In total discussions were held with 1004 respondents in the city for this study.

Delhiites knowledge about river Yamuna

To get the baseline data on the knowledge level of Delhiites about their own river Yamuna, various questions were framed after in-house discussions and pre-testing with the target respondents. Information was elicited on the knowledge level of respondents related to the name of the river that flows in Delhi, from where does river Yamuna enter and exit Delhi, the barrages on river Yamuna, and the birth, flow and sangam of river Yamuna.

While an overwhelming 97% of the respondents correctly identified river Yamuna as being the river in Delhi, a small percentage gave incorrect responses like river Narmada, Ganga and Saraswati. The responses were analysed in the light of the entry and exit points, along with the category of the respondents. Ironically, at the entry point of the river in the NCT, about 7% of the respondents in village Palla gave responses other than river Yamuna as being the

river of Delhi — this after residing on the bank of the river itself. At the exit point, in Jaitpur village people were unsure about it being a nalah or the river Yamuna. The religious practitioners (pandits), who consider river Yamuna to be a pious body, were also similarly ignorant about the river. The study highlights that nearly half of the religious practitioners interviewed (45%) believed Wazirabad to be the entry point of river Yamuna in Delhi. About 47% of the respondents knew about the barrages on the river being at Okhla and at Wazirabad. Once again, the low statistics came from the respondents who live within 5 kms of the river, where only 37% of the respondents gave the correct answer.

River Yamuna - what it means to Delhiites

River Yamuna being the major source of domestic water supply in Delhi, it was necessary to understand the respondent's views about their life-line river. The respondents were found to relate to the river Yamuna in their own way, depending on their personal interests. For example, while for the civil society groups, river Yamuna is essential for maintaining the security of the city's natural environment, for a mahawat, it is primarily the source of drinking water (“janwaron ke paani peene ka srot hain”) for his elephants. Alternatively, for a pandit (religious practitioner) the river Yamuna is “Yamuna ji” meant to pursue his religious pursuits. When the interviewer prompted him about other benefits such as water supply, the response recorded in video documentation was “logon se suna hai hamein nahin pata; (have heard but really don't know) hamare liye to dharmik sthal hai” (for us it is a religious place).

Other benefits of the river as mentioned by the respondents were:

- Source of irrigation
- Helps in increasing the ground water level
- Power production
- Conducting religious activities
- Mining sand from the river
- Drinking water
- Balances the environment and many more

The response depicts the plight of river Yamuna by the fact that only a very low percentage of the respondents (ironically none in the ‘Youth’ category) considered Yamuna to be either a historical or a cultural place / heritage.

An **overwhelming** 98% of respondents admitted visiting the river Yamuna from time to time. But this number gets skewed as almost 63% defined a “visit” to the river as crossing the river over a bridge as they travel from one part of the city to another. **It is generally believed that one of the reasons for the lack of positive relationship between the river and the city is an unfortunate lack of access points from the roads to the river proper.**

Delhiites health and river Yamuna

About 71% of the respondents informed that their source of water supply is MCD. Respondents clearly had no information about the fact that it is Delhi Jal Board (DJB) and not MCD that supplies water in the city. A significant number of respondents indicated water from hand pumps or borings as their source of water. This included majority

of respondents at the exit point and those residing within 5 kms of the river Yamuna. This indicated that the respondents were generally ignorant about the fact that river Yamuna is the main source of drinking water in Delhi.

About 25% of the respondents' mentioned that their family members had been suffering from water-borne/related diseases. Typhoid followed by malaria and dysentery were the most common diseases. About 44% of the respondents believed that the incidence of such water-borne diseases has increased with time and is higher amongst this generation. About 75% of the respondents informed that these diseases were, however, not fatal. It was not surprising to notice that the doctors also indicated that polluted water is the key reason behind the widespread health problems in the city. About 72% of the respondents felt strongly that the high incidence of water-borne diseases is due to the current condition of river Yamuna and that there is a clear link between the state of the river Yamuna and an increase in the incidences of illness in the city.

Majority (56%) of the respondents mentioned using water purifiers, chlorine tablets, mineral water, etc., as some of the preventive measures taken by them against consumption of polluted water and falling prey to the diseases. The response indicates Delhiites 'immediate' short term approach to life.

Current state of river Yamuna

The phrase 'Yamuna is dying' is, currently, a frequently voiced/heard opinion. The KAP elicited responses from Delhiites behind the present condition of the river Yamuna in Delhi. Most of the respondents consider Yamuna to be in a bad shape — either dried, polluted, in the form of a nalah, poor water quality etc. About 29% of the respondents, from across the city, mentioned the river stretch at ITO to be the most polluted. About 78% respondents blamed drains for bringing city sewage into the river Yamuna, nearly 60% blame it on the poor drainage system in Delhi, about 57% believe that lack of fresh water flow has led to the polluted state of the river Yamuna. Religious practitioners, school children and the youth, all responded similarly. About 93% of the Delhiites agree that the sewage of the city is getting disposed into the river Yamuna

Nearly 95% of the Delhiites believes that the condition of Yamuna is a man-made crisis. The irony remains that this clarity is not depicted in their actions or the prevailing practices, with respect to the river.

Regarding the ongoing constructions on the river bed, 43% of the residents considered the under-construction Commonwealth Games Village to be the biggest threat to river Yamuna, with 37% identifying Yamuna Metro Depot and the Parsvnath Metro Mall as the next biggest threat to it.

It is heartening to note that while 86% of the respondents (in a multi-option query) blamed the government agencies for the crisis, as high as 77% also blamed the citizens of Delhi for the same, alluding thereby, that it has to be a combined effort of the government and the citizenry if the river is to be restored to its former glory.

Actions of Delhiites and its impact

In the context of river Yamuna being good for **boating** or not, around **74% of the mallahs, whose livelihood depends on it, don't consider it to be good enough**. Interestingly around 41% of the respondents believe that vegetables grown in Yamuna water are good enough for consumption. Majority of the respondents also feel strongly that river water is not fit for drinking and bathing.

The actions of Delhiites irrespective of the education, class and caste are governed by either their imbibed **religious values** or their cultural customs. These ingrained values make people practice customs like *asthi visarjan* (immersion of ashes), murti visarjan (immersion of idols), deh visarjan (immersion of dead bodies in water) and other religious offerings made after different religious ceremonies (pujas). Around **75%** of the respondents admitted that they dispose off the left overs from their religious ceremonies into the river Yamuna, 44% admitted to murti visarjan and 40% to asthi visarjan. However, the percentage of disposal of dead bodies was only 7%. Around **23% of the respondents dispose off their garbage** into the river Yamuna. **40% of the mahawats, 38% of mallahs and 38% of the households mentioned that they do throw garbage into the river Yamuna**. Regrettably even the supposedly aware sections like **the school children (24%) and youth (18%)** admitted throwing garbage into the river Yamuna.

Around **83%** of the respondents **admitted to the fact that these activities pollute the river Yamuna**. The continuance of these practices is due to the religious norms advocated by the religious practitioners (pandits) and lack of options available for safe disposal of these items. People also replied that “*dharmik gatividhiyon se Yamuna kabhi gandi nahin hogi*” (religious activities never pollute the river). Similar was the response from the religious practitioners (Pandits) who said “*Yamuna ji puja se gandi nahin hotin, 5 – 10 gm phool se kya hoga, woh to Yamuna ji mein sama jaate hain, usse koi dikkat ki baat nahin*” (river Yamuna does not get polluted from religious offerings. The 5-10 gms of flowers hardly pollute the river).

The ease of shifting the blame on another's shoulders was also depicted in their responses. About 77% respondents took no time to opine that the *jhuggis* and slums on the riverbed of the river Yamuna should be demolished in order to save the river. When asked about their opinion on the dhobi ghats on the river bank, about 92% of them said that the dhobi ghats should be shifted elsewhere, without realizing that wherever the dhobi ghats may be relocated the river would ultimately get the refuse through one or the other drains in the city unless the drains themselves got treated first.

The respondents seem to be aware about the effect of their actions and thus, even suggest alternatives to various practices such as a separate water body/ canal near river Yamuna to bathe and conduct *snan* (religious bath), construction of more electrical crematoriums and more. These responses are a positive sign of the willingness of the people to take ameliorative actions for the river. In the Indian religious and cultural milieu, religious ceremonies have to be given due importance.

Joining hands to bring back the glory of Yamuna

It is clear that there is a need to bring in attitudinal changes towards the river among the citizens of Delhi, irrespective of any group or class. The survey clearly indicates that the habit of throwing various kinds of matter (garbage, religious offerings etc.) into the river transcends differences of all kinds amongst the people, including those at varying educational levels. As Delhiites are aware about the harm that they are causing to the river and are keen to take up ameliorative actions as enumerated by them, there is a pressing and urgent need to provide them with options and alternatives for redeeming the river.

Respondents suggested measures like proper management of sewage system (83%), followed by the need for widespread awareness about the issue and the threatened state of the river Yamuna (58%) and proper implementation of the policies (49%) to safeguard the river. Bringing in infrastructural changes like a separate pond or water body to carry out the religious activities, increase in the number of STPs, electric crematorium, proper management of garbage etc., are among the measures to be taken according to the respondents.

Various awareness issues like health hazards due to the present condition of Yamuna, bringing in self-realisation, encouraging citizens to adopt practices that safeguard the river Yamuna etc., among other practices are suggested as the strategy. Involvement of religious leaders and endorsement by a popular ‘ambassador for the river Yamuna’ were among some of the responses, as stated by the respondents.

The respondents emphasised on the media campaign that needs to be launched on a large scale — a media campaign that reaches to all segments of the society. A campaign with a multi-pronged approach and based on the principles of ‘social marketing’, might be able to sell to Delhiites the ‘idea’ of environmental protection and the restoration of river Yamuna, sensitizing the group of people who derive their livelihood from Yamuna - mallahs, mahawats, and dhobis among others. The campaign should include the use of audiovisual media, engage in public lectures, mobilize Resident Welfare Associations (RWAs) and civil society groups to take action in the right direction and do much more than hitherto to revive and revitalise the river Yamuna.

Chapter 1

BACKGROUND

The river Yamuna, a major tributary of river Ganges, originates from the Yamunotri glacier near andarpoonch peak (380 59' N 780 27' E) in the Mussourie range of the lower Himalayas at an elevation of about 6387 meters in the district Uttarkashi of Uttarakhand state. Flowing through Poanta Sahib it reaches Hathnikund/Tajewala in the Yamuna Nagar district of Haryana state, where the river water is diverted into Western Yamuna Canal (WYC) and Eastern Yamuna Canal (EYC) for irrigation and drinking purposes. During the dry season, no water is allowed to flow in the river downstream of Tajewala barrage and the river remains dry in some stretches between Tajewala and Delhi.

The river regains water from the ground water accrual and contributions received from feeding canal through Som Nadi (seasonal stream) upstream of Kalanaur before it reaches Delhi. It (in its later stages) receives water from important tributaries like Chambal, Betwa and Ken before joining the river Ganga and the mythical underground Saraswati at Prayag (Allahabad) after traversing a total length of about 1400 Km. It enters Delhi near Palla village after covering a distance of about 400 Km from its origin and exits from Delhi (NCT) at the village Jaitpur after traversing a distance of 50 km within the NCT.

GRAPH 1.1: THE CATCHMENT AREA OF RIVER YAMUNA

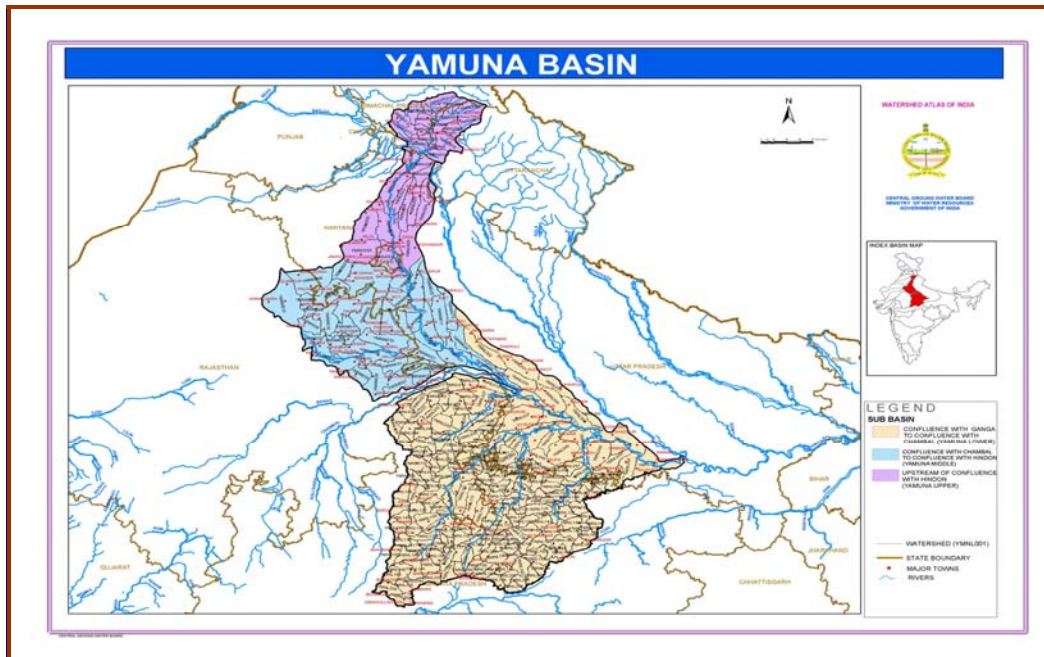


TABLE 1.1: STATE WISE CATCHMENT AREA

Name of State	Total Catchment Area in Yamuna (in Sq. Km.)	Percentage Contribution
Uttar Pradesh (including Uttaranchal)	74208	21.5
Himachal Pradesh	5799	1.6
Haryana	21265	6.5
Rajasthan	102883	29.8
Madhya Pradesh	14028	40.6
Delhi	1485	0.4

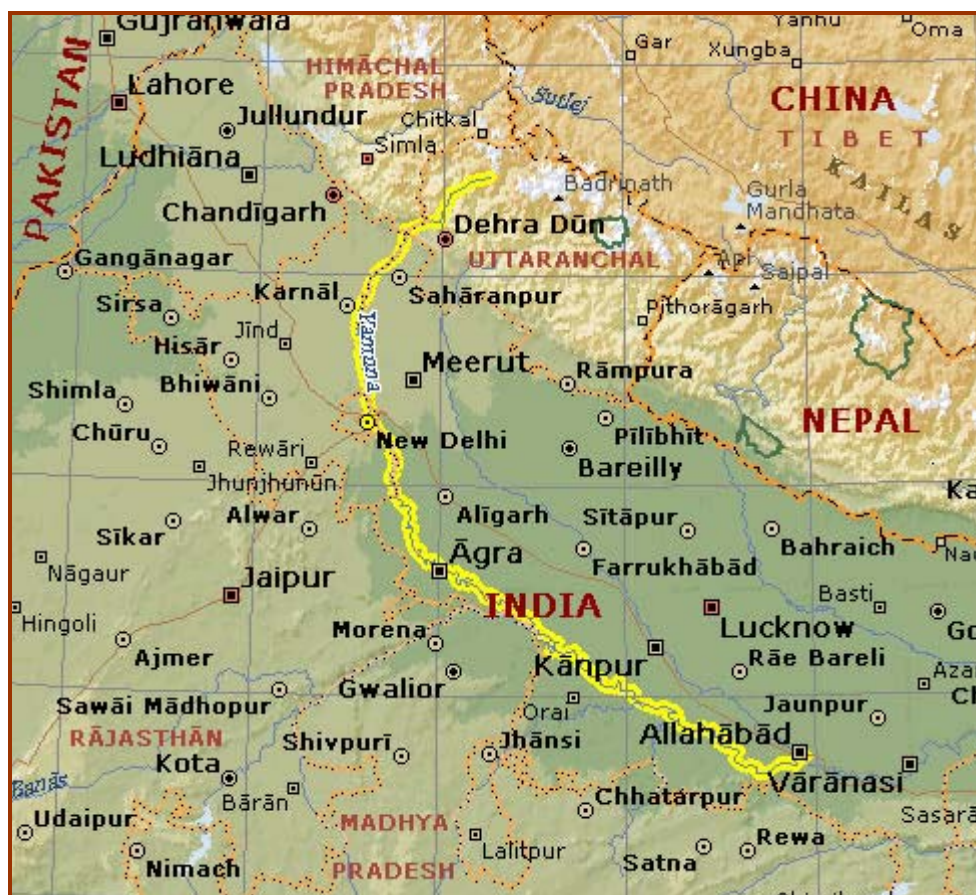
Source: Yamuna Action Plan, National River Conservation Directorate (NRCD)

On the basis of area, the catchment basin of Yamuna accounts for 40.2% of the Ganga Basin and 10.7% of the total landmass of the country. But a very limited catchment area (of less than 20 % of the total catchment area for river Yamuna) area in its founding basin in the states of Uttarakhand and Himachal as shown above is a handicap that all planners for the river need to always keep in mind.

River Yamuna flows through five states – Uttarakhand, Himachal Pradesh, Haryana, Uttar Pradesh and Delhi. River Yamuna water is used by millions as a source for drinking water besides for bathing and irrigation. In recent years, however, it has become grossly polluted due to discharge of domestic wastewater into the river Yamuna from nearby towns and habitations contribute about two-third of the pollution load, the remaining one-third being contributed by industries and agricultural activities which in turn affect adversely the human health and the bio-diversity of the ecosystem.

For a significant length (as can be seen in the map below), the river Yamuna forms an inter-state border, first between Uttaranchal and Himachal Pradesh, then between Haryana and Uttar Pradesh (UP). Finally between Delhi and Uttar Pradesh, before the river enters and flows through UP to finally merge with Ganga in Allahabad. This fact alone creates special problems for the river Yamuna as then no single state takes control of, or responsibility for, the upkeep and security of the river while each tries to upstage the other in diverting the river's water away from the river channel.

GRAPH 1.2: THE JOURNEY OF RIVER YAMUNA



Why has the river Yamuna come to its current sorry predicament? The population of the national capital of Delhi has — owing to natural growth and migration — gone up in leaps and bounds. At present, its estimated population of 14 million heavily depends on the river Yamuna for water and several other needs. The river has also fallen victim to poor governance and civic indifference. Seemingly, Delhiites have used the river as an outsized ‘dust bin’, and the civic authorities have found it to be cost-effective to allow untreated city waste and sewage into the river. Diversion and abstraction of water from the river into canals upstream of Delhi has severely curtailed its flow and its self-cleansing capacity.

TABLE 1.2: DISTINCT SEGMENTS OF RIVER YAMUNA

Himalayan Segment	From origin to Tajewala Barrage	(172 kms)
Upper Segment	Tajewala Barrage to Wazirabad Barrage	(224 kms)
Delhi Segment	Wazirabad Barrage to Okhla Barrage	(22 kms)
Eutrophicated Segment	Okhla Barrage to Chambal Confluence	(490 kms)
Diluted Segment	Chambal Confluence to Ganga Confluence	(468 kms)

Source: Yamuna Action Plan, National River Conservation Directorate (NRCD)

The discharge of wastewater through 22 drains between Wazirabad barrage and Okhla barrage in Delhi has rendered the river Yamuna almost life-less with BOD values ranging from 25 to 40 mg/l (against safe standard of 3 mg/l) and faecal coliform number of 1.7 million/100 ml (against safe standard of 500/100 ml) and 0 - 0.1 mg/l of dissolved oxygen (DO) against a safe standard of 5 mg/l.

Delhi contributes around 3,296 MLD (million litres per day) of sewage by virtue of drains falling in to the river Yamuna. The absence of perennial flow in river Yamuna and the huge quantity of waste it receives have together given it the dubious distinction of being one of the most polluted rivers of the country. Today, as more and more agricultural land around the cities is getting converted into non agricultural uses especially as residential colonies, the cities face difficulties in resorting to the time tested safe disposal of wastewater into nearby agricultural fields. So instead they discharge it into the rivers.

To arrest this river pollution, National River Conservation Directorate (NRCD), Ministry of Environment and Forests (MoEF), Government of India (GoI) with assistance from Japan Bank for International Cooperation (JBIC) implemented the Yamuna Action Plan (YAP), Phase-I (1994-2002). The YAP-I was designed with many engineering works and some non-engineering components. Number of sewage treatment plants, electric crematoria, community toilet complexes etc. were constructed during YAP- I.

However due to several factors, mainly poor implementation and maintenance, the project did not achieve the desired level of improvement in the water quality of the river Yamuna.

With all the learning and experiences from YAP-I, a new agreement was signed on 31 March 2003 to launch YAP II. The JBIC loan agreement provided financial assistance of 13.33 billion Yen (approx. 500 crores. i.e approx 85% of overall budget). Two more towns were added in YAP II.

In Delhi the focus of YAP II is on:

- Physical work implementation.
- Preparation of master plan, feasibility study and detailed programme report for YAP III.
- Public participation and awareness.
- Public relations.
- Institutional strengthening and capacity building of MCD.
- Based on the findings YAP III will be the next endeavour of the government to further improve the condition of river Yamuna.

Chapter 2

THE KAP STUDY: METHODOLOGY AND APPROACH

2.1 THE STUDY OVERVIEW

In the past, Delhi has been the cradle of civilisations and a favourite of emperors. The existence of river Yamuna, providing abundant sweet water round the year, was the major attraction for the same. Emperors constructed memorable monuments like the Lal Qila on the river bank. Even now, Delhi depends on the river Yamuna for meeting its water needs.

To understand the level of awareness, knowledge, attitude and the personal equations that the citizens of Delhi have with their cultural and life line heritage river a **KAP study** was undertaken by CMS Environment and PEACE Institute.

The **KAP study of Yamuna** was focused on the following:

- **K: Knowledge** level of Delhiites about the river Yamuna flowing in their city. The study focused on the level of awareness about the river Yamuna among various target groups in the city.
- **A: Attitude** of the Delhiites towards their river. Yamuna is the principal natural water source for Delhi. Thus it is important to understand the attitude of Delhiites
- **P: Practice** of Delhiites in context of river Yamuna. A river body is associated with various religious and cultural practices. Even the occupational practices of people who derive their livelihood from the river were captured. Citizens' actions leading to either safeguarding or polluting the river Yamuna; along with their religious practices were observed.

TABLE 2.1 KEY CONCERNS CAPTURED IN THE SURVEY

<ul style="list-style-type: none"> • Awareness about river Yamuna • Knowledge on river Yamuna • Personal equation with river Yamuna • Awareness about the benefits of river Yamuna to the city • Association and equation with river Yamuna • Current status of river Yamuna • Existing and upcoming threats to river Yamuna 	<ul style="list-style-type: none"> • Changes in the condition of river Yamuna • Priorities for the city • Who is responsible for the present condition of river Yamuna? • Possible solutions to improve the condition of river Yamuna • Willingness to mobilize and become “the pressure group” for change • Finding out possible ways to educate various groups in the city about the condition of river Yamuna
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2.2 OBJECTIVES OF THIS STUDY

- To **assess** the **knowledge** and level of **understanding** among people in Delhi about the river Yamuna
- To **map** personal linkages of the citizens in Delhi with river Yamuna.
- To **understand** the condition of river Yamuna and the views of people.
- To **understand** the attitude and practices by the people as it relates to the river Yamuna.
- To **assess** willingness of various targeted groups to take actions for safeguarding the river Yamuna.

2.3 METHODOLOGY

The primary data for the survey was collected through personal interviews of respondents representing different sectors and sections of the society. Stratified random sampling technique was used to select the respondents from across the NCT.

Well-experienced and trained interviewers were deployed to carry out the fieldwork along with facilitators and a senior researcher. The interviews were conducted under the direct supervision of the senior facilitators. To ensure the quality of the data approx. 30% interviews were back checked.

It is notable that most of the enforcers refused to respond to our request for an interview. Repeated requests and visits to them proved futile.

A team of sixteen interviewers, five facilitators headed by one senior facilitator and a researcher conducted the survey. The vast and varied area that had to be covered for the survey (especially Palla and Jaitpur village) and a representation from across the NCT led to an increase in the number of interviewers for undertaking the field work.

2.4 BASIS OF SELECTION OF RESPONDENTS

The following categories of respondents were interviewed with an aim to cover the entire NCT in a manner that a wholesome picture may emerge.

TABLE 2.2: RESPONDENTS

S. No.	Respondents	S. No.	Respondents
1.	Professionals	8.	Government employees
2.	Villagers	9.	Youth
3.	Households (Housewife/ head of the Family)	10.	Pandits and religious practitioners
4.	Industrialists	11.	Real estate
5.	Shopkeepers	12.	Mallahs/ Mahawat/ dhobis
6.	Households (in Unauthorized colonies)	13.	Civil society groups
7.	Waste collectors and recycling agents	14.	School children

Details of the respondents are given below:

2.4.1 Occupational stakeholders

This group of respondents (Mahawats, Mallahs, Cultivators and Dhobis etc.) are dependent on the river Yamuna for its daily bread. This group has been into the profession since long and thus has emotional attachment to the river Yamuna. The need for eliciting their response was important as they observe the river more carefully and their livelihood is directly linked to the river.



CMS interviewer with a Mallah at river Yamuna



CMS investigator with a Mahawat

2.4.2 Villagers

One finds many small villages and authorised/ unauthorized hutments on the banks of river Yamuna. The people residing in these colonies are significantly dependent on the river Yamuna for their daily activities. Drinking water, agriculture, bathing, water for daily household chores etc. are all fetched from the river Yamuna. Thus, the practice and attitude of these villagers was important to gather for the study.

2.4.3 School children and youth

The cultural history of river Yamuna is an integral part of the theoretical knowledge of the school children. Apart from having the basic knowledge gained from books it is necessary for the young generation to have the right approach and KAP towards the river Yamuna. Thus, it was important to get the views of the young generation, who can make a difference to mitigate the existing plight of the river Yamuna.



Villagers interacting with CMS team

2.4.4 Religious practitioners (pandits etc.)

River Yamuna is considered to be one of the most sacred rivers in the country. Unfortunately this aspect of the river, rather keeping the river secure, often results in religious offerings made to it by the devout, which has added to its current polluted condition. The religious practitioners, including the pandits, dictate the people's religious actions. Hence they were included in the study to understand their KAP regarding the river Yamuna.



A religious practitioner at the bank of river Yamuna in a semi constructed temple

2.4.5 Civil society and government bodies

It was important to reach out to the members of the civil society groups that are active for the river or for environment protection in the city. The officials of the government bodies were also interviewed who can bring in a change for the river by taking actions in the right direction.

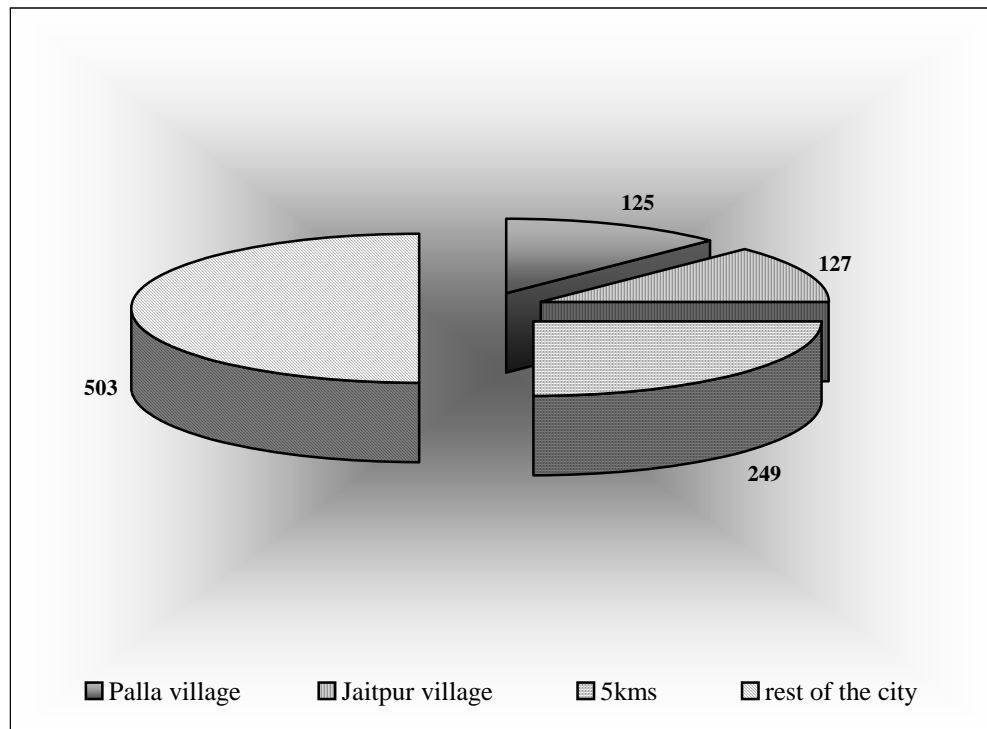
2.5 SAMPLING FRAMEWORK

The respondents across Delhi were stratified based on following three criteria:

TABLE 2.3: COVERAGE AND SAMPLE SIZE FOR THE STUDY

S. No.	Coverage	% of Respondents	No. of Respondents
1.	Respondents within 5 km radius of the river	25	249
2.	Respondents from village/s where the river Yamuna enters (village Palla) or leaves (village Jaitpur) Delhi	25	252
3.	Respondents from the rest of the city (North, South, East and West)	50	503
	Total	100	1004

GRAPH 2.1: SAMPLE SIZE OF THE STUDY



CMS Environment team interviewed respondents in various categories to elicit response. Sample size of each category of respondents are given below.

TABLE 2.4: SAMPLE SIZE INTERVIEWED IN EACH CATEGORY (In percentage)

Respondents	Entry	Exit	within 5kms	Rest of city	Total
N	125	127	249	503	1,004
Professionals	6.4	1.6	6.8	9.5	7.5
Villagers	23.2	19.7	4.8	3.6	8.4
Households (housewife/ head of the Family)	16.0	24.4	10.4	17.7	16.5
Industries	0	1.6	1.6	7.0	4.1
Shopkeepers	16.0	18.1	14.9	14.5	15.2
Households (unauthorized colonies)	2.4	2.4	10.0	2.8	4.5
Waste collectors and recycling groups	2.4	2.4	7.2	5.0	4.9
Government bodies	5.6	3.9	1.2	5.6	4.3
Youth	8.8	13.4	12.4	9.1	10.5
Pandits (religious leaders)	4.0	8.7	6.4	7.0	6.7
Real estate	3.2	0	4.0	6.4	4.6
Mallahs	0	0	3.2	0	0.8
Mahawat	0	0	2.0	0	0.5
Dhobis	3.2	0	4.8	1.2	2.2
Civil society groups	1.6	3.1	2.8	4.8	3.7
School children	7.2	0.8 ??	7.2	6.0	5.8

2.6 RESPONDENTS' PROFILE

2.6.1 Educational profile of respondents

As the study focused on a mixed groups including Mahawat, Mallah, Dhobi on the one hand and professionals and school group/ youth on the other, the educational level of the respondents varied accordingly and an interesting picture has emerged. About 20% respondents are educated till 10th class and about 19% have at least 12th class education. Another 18% are in their final year of graduation, and about 8% are illiterate respondents.

TABLE 2.5: EDUCATION PROFILE OF RESPONDENTS (In percentage)

Educational level Level	Entry	Exit	within 5kms	Rest of city	Total
N	125	127	249	503	1,004
Class: 1	0.8	0	0	0	0.1
Class: 3	0.8	0	0.8	0.2	0.4
Class: 4	0.8	0.8	1.2	0.2	0.6
Class: 5	6.4	4.7	8.4	3.4	5.2
Class: 6	2.4	0.8	0.8	1.8	1.5
Class: 7	3.2	6.3	5.2	3.2	4.1
Class: 8	8.8	8.7	10.0	5.0	7.2
Class: 9	0.8	3.1	5.2	1.6	2.6
Class: 10	19.2	21.3	20.5	19.7	20.0
Class: 11	0.8	0.8	1.6	3.2	2.2
Class: 12	14.4	27.6	16.1	19.3	18.9
Graduation I year	0	0	0	0.8	0.4
Graduation II year	0	0	0.4	0.8	0.5
Graduation III year	22.4	10.2	10.4	22.5	17.9
Post Graduation I year	2.4	2.4	1.2	2.2	2.0
Post Graduation II year	0	2.4	2.0	8.2	4.9
Doing Ph.D or equivalent degree	0	0	1.2	0.2	0.4
Ph.D / equivalent degree	0.8	0	0.4	0.8	0.6
Literate but not attended any class	4.8	0.8	3.6	2.4	2.8
Illiterate	11.2	10.2	10.8	4.8	7.8

2.6.2 Gender of the respondents

A total of 78% of the respondents interviewed were male. This was due to the inaccessibility of female respondents in predominantly rural areas like Jaitpur and Palla. However, wherever possible CMS tried to capture views of female respondents too. For instance, in case of Dhobis, 41% of the respondents were female. Also, 70% and 56% of the respondents in the category of households in authorised and unauthorised colonies, respectively, were female.

It was primarily due to an occupational barrier that in categories like Mahawat there were no female respondents. It is also interesting to note that the majority of the female respondents refused to come on camera during video recording of the interviews.

TABLE 2.6: GENDER WISE DISTRIBUTION (In percentage)

Gender	Male	Female	Total
N	781	223	1,004
Professionals	84.0	16.0	100.0
Villagers	92.9	7.1	100.0
Households (housewife/ head of the Family)	33.1	66.9	100.0
Industries	90.2	9.8	100.0
Shopkeepers	96.1	3.9	100.0
Households (unauthorized colonies)	44.4	55.6	100.0
Waste collectors and recycling groups	87.8	12.2	100.0
Government bodies	93.0	7.0	100.0
Youth	86.7	13.3	100.0
Pandits (religious leaders)	97.0	3.0	100.0
Real estate	97.8	2.2	100.0
Mallahs	75.0	25.0	100.0
Mahawat	100.0	0	100.0
Dhobis	59.1	40.9	100.0
Civil society groups	83.8	16.2	100.0
School children	72.4	27.6	100.0

2.6.3 Economic profile

The CMS Environment team made it a point to get the opinion from a mixed economic group. The location and occupation of the respondents played a critical role in this categorisation. 25% of the villagers were found to be with a monthly income of less than Rs.3,500. About 49% of the waste collectors and recycling group along with 28% of the pandits and 80% of the Mahawat belonged to this economic group too.

About 46% of the dhobis and 47% of the households of unauthorised colonies belonged to the income group of Rs.3,500-5,000.

TABLE 2.7: MONTHLY HOUSEHOLD INCOME (In percentage)

Respondents	Less than 3500	3501 - 5000	5001 - 10000	Above 10001	Total
N	161	243	298	302	1004
Professionals	2.7	8.0	24.0	65.3	100
Villagers	25.0	31.0	29.8	14.3	100
Households (housewife/ head of the Family)	16.3	21.1	35.5	27.1	100
Industries	2.4	4.9	19.5	73.2	100
Shopkeepers	7.8	26.1	34.6	31.4	100
Households (unauthorized colonies)	31.1	46.7	20.0	2.2	100
Waste collectors and recycling groups	49.0	28.6	16.3	6.1	100
Government bodies	9.3	9.3	9.3	72.1	100
Youth	9.5	23.8	38.1	28.6	100
Pandits (religious leaders)	28.4	44.8	23.9	3.0	100
Real estate	0	4.3	28.3	67.4	100
Mallahs	37.5	37.5	25.0	0	100
Mahawat	80.0	20.0	0	0	100
Dhobis	36.4	45.5	13.6	4.5	100
Civil society groups	5.4	16.2	45.9	32.4	100
School children	17.2	31.0	39.7	12.1	100



CMS Environment team taking interview at the river bed

Chapter 3

DELHIITES KNOWLEDGE ABOUT RIVER YAMUNA

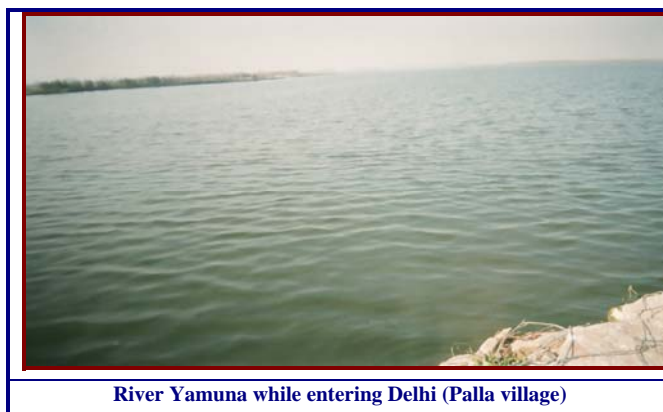
The river Yamuna has been Delhi's life-line since ages physically and emotionally. But beneath the carpet lies the dark reality of people who do not possess even the basic knowledge about the river Yamuna. Over the years the attachment of Delhiites with the river Yamuna has it seems faded off.

To get the baseline data on the knowledge level of Delhiites about their own river Yamuna, various questions were framed after in house discussions and pre-testing with the respondents. This chapter elaborates on the knowledge level of respondents related to the following:

DELHIITES AND YAMUNA	
Which river flows in Delhi?	From where does river Yamuna enter and exit Delhi
The barrages on river Yamuna	Birth, flow and <i>sangam</i> of river Yamuna

3.1 INFORMATION ABOUT THE RIVER

While an overwhelming percentage (97%) of the respondents correctly identified river Yamuna as being the river in Delhi, a small percentage gave incorrect responses like river Narmada, Ganga and Saraswati. (Refer table 3.1)



River Yamuna while entering Delhi (Palla village)

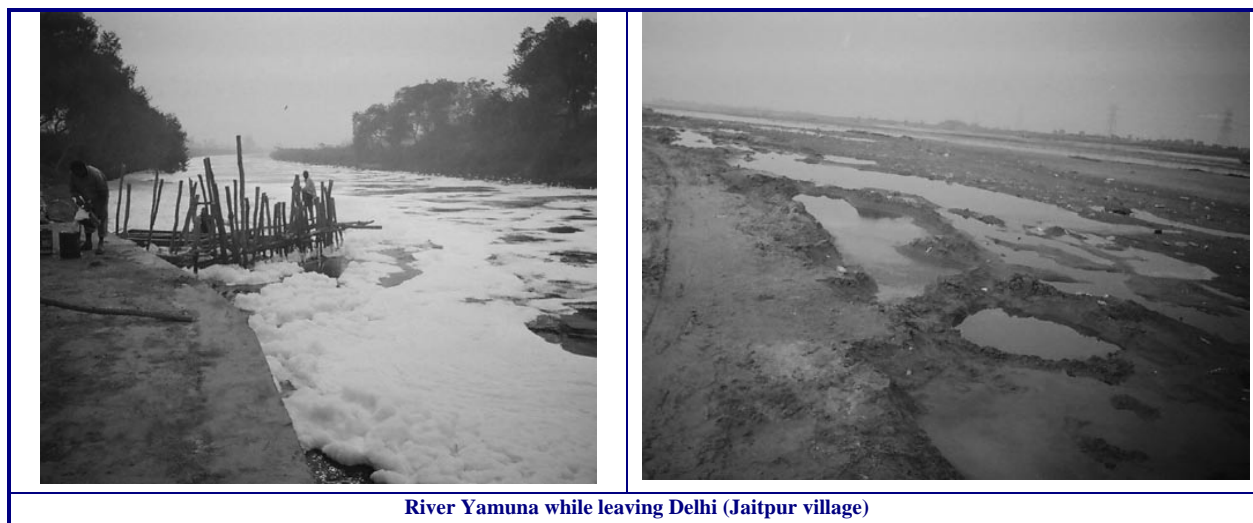


TABLE 3.1: RIVER THAT FLOWS IN DELHI (In percentage)

Respondents	Ganga	Yamuna	Narmada	No River	DK	Total
Base	1.9	97.0	0.1	0.4	0.6	100.0
Professionals	0	98.7	0	0	1.3	100.0
Villagers	0	98.8	0	0	1.2	100.0
Households (housewife/ head of the Family)	3.6	95.8	0	0	0.6	100.0
Industries	0	97.6	2.4	0	0	100.0
Shopkeepers	1.3	97.4	0	1.3	0	100.0
Households (unauthorized colonies)	0	97.8	0	2.2	0	100.0
Waste collectors and recycling groups	0	95.9	0	0	4.1	100.0
Government bodies	0	97.7	0	0	2.3	100.0
Youth	5.7	93.3	0	1.0	0	100.0
Pandits (religious leaders)	3.0	97.0	0	0	0	100.0
Real estate	2.2	97.8	0	0	0	100.0
Mallahs	0	100.0	0	0	0	100.0
Mahawat	0	100.0	0	0	0	100.0
Dhobis	0	100.0	0	0	0	100.0
Civil society groups	0	0	0	0	0	100.0
School children	3.4	96.6	0	0	0	100.0

3.2 KNOWLEDGE ABOUT YAMUNA'S ENTRY AND EXIT POINTS IN DELHI

Ironically at the entry point of the river in the NCT, about 7% of the respondents in village Palla gave responses other than river Yamuna as being the river of Delhi. This is when they are residing on the bank of the river itself.



In Jaitpur, which is the exit point for the river in the NCT, the villagers showed least interest in the river Yamuna. According to them the river flowing next door is a nalah (drain). The CMS area facilitator noted with regret that many of the respondents were unsure about it being a nala or the river Yamuna. “Ye nalah hai ya nadi hamein theek se nahin pata” (we are not very sure whether this is a drain or the river). This lack of knowledge is a clear indication of their apathy. A vast majority (83%) has the notion that **Wazirabad is the entry point of the river in Delhi.**



River Yamuna at Palla village

TABLE 3.2: ENTRY POINT OF YAMUNA IN DELHI (in percentage)

Locations	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Palla Village	92.8	1.6	20.5	40.0	36.9
Palam	0.8	1.6	6.0	3.8	3.7
Shahdara	0	5.5	9.2	3.2	4.6
Wazirabad	3.2	82.7	32.5	33.0	35.5
DK	3.2	7.9	31.7	19.9	19.2
NR	0	0.8	0	0.2	0.2

TABLE 3.3: EXIT POINT OF RIVER YAMUNA FROM DELHI (in percentage)

Locations	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Okhla Barrage	53.6	15.0	34.1	42.1	38.1
Jaitpur	20.8	76.4	21.7	28.6	32.0
Shahdara	1.6	0	4.0	3.6	3.0
Wazirabad	15.2	2.4	10.8	7.4	8.6
DK	8.8	6.3	29.3	17.7	18.0
NR	0	0	0	0.6	0.3

About 32% of the respondents knew correctly that Jaitpur is the Delhi’s exit point of the river.

The religious practitioners (pandits) who consider river Yamuna to be a pious body had also similar ignorance about the river. The study highlights that nearly half of the religious practitioners interviewed (45%) believed Wazirabad to be the entry point of river Yamuna in Delhi.



A CMS interviewer interacting with a pandit

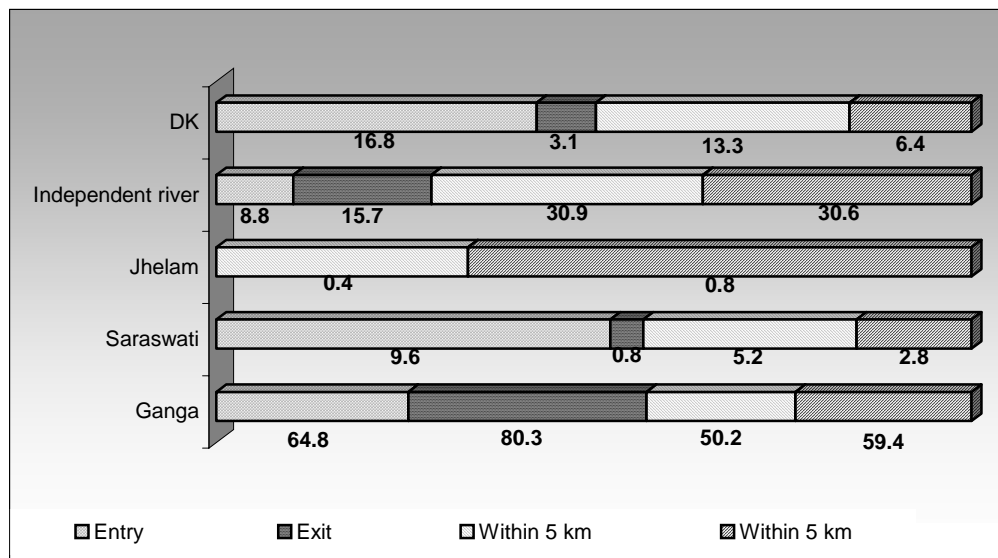
3.3 ORIGIN, FLOW AND SANGAM OF YAMUNA

The study reveals that 61% of the respondents correctly identified river Yamuna to be a tributary of river Ganga. 26% of them consider it to be an independent river within which the highest percentage of the respondents is from within 5 km radius of the river. Even at the exit point of the river, 16% of the respondents believe that river Yamuna is an independent river.

The responses as above also highlights that from the community of Mallah (boatman), i.e., people who are plying their boats in the river Yamuna almost everyday only 20% of them had information that river Yamuna joins the river Ganga.

57% of the respondents suggested that river Yamuna flows from Yamunotri to Allahabad. It was noticed during the survey that the respondents were getting confused between the words “Yamunotri and Gangotri”.

GRAPH 3.1: PERCEPTION ABOUT RIVER YAMUNA AND ITS TRIBUTARY STATUS (in percentage)



Surprisingly, in case of school children the response of school children for ‘Gangotri to Allahabad’ was higher than ‘Yamunotri to Allahabad’.

When asked, “Where does river Yamuna join river Ganga”? 88% of the respondents gave a correct response i.e., Allahabad. Surprisingly around 7% of the religious practitioners (pandits) who ought to know better identified it to be Gangotri or Agra or didn’t know the answer.

TABLE 3.4: FLOW OF YAMUNA (In percentage)

Respondents	Gangotri to Delhi	Agra to Allahabad	Yamunotri to Allahabad	Gangotri to Allahabad	NR	Total
N	7.0	2.9	57.2	21.8	11.2	100.0
Professionals	8.0	0	72.0	16.0	4.0	100.0
Villagers	3.6	0	59.5	22.6	14.3	100.0
Households (housewife/ head of the Family)	3.6	1.8	57.2	24.1	13.3	100.0
Industries	9.8	2.4	61.0	17.1	9.8	100.0
Shopkeepers	3.9	3.3	64.1	22.9	5.9	100.0
Households (unauthorized colonies)	11.1	4.4	31.1	20.0	33.3	100.0
Waste collectors and recycling groups	10.2	2.0	38.8	16.3	32.7	100.0
Government bodies	0	0	76.7	18.6	4.7	100.0
Youth	3.8	5.7	57.1	26.7	6.7	100.0
Pandits (religious leaders)	3.0	6.0	77.6	9.0	4.5	100.0
Real estate	15.2	4.3	45.7	26.1	8.7	100.0
Mallahs	25.0	0	37.5	12.5	25.0	100.0
Mahawat	20.0	0	40.0	20.0	20.0	100.0
Dhobis	9.1	4.5	36.4	22.7	27.3	100.0
Civil society groups	16.2	5.4	56.8	18.9	2.7	100.0
School children	19.0	3.4	32.8	36.2	8.6	100.0

3.4 BARRAGES ON THE RIVER YAMUNA

The survey depicts that the knowledge about the two main barrages was quite satisfactory. About 47% of the respondents knew about the barrages on the river being at Okhla and at Wazirabad. Once again the low statistics came up from the respondents from within 5 km of the river, where only 37% of the respondents gave a correct answer.



A view of Agra Canal originating from the Okhla Barrage

Chapter 4

RIVER YAMUNA: WHAT IT MEANS TO DELHIITES

River Yamuna being the major source of domestic water supply in Delhi, it was necessary to understand the respondent's views about their life-line river.

4.1 BENEFITS FROM RIVER YAMUNA

BENEFITS FROM THE RIVER

The respondents were found to relate to the river Yamuna in her / his own way depending on their personal interests. For example, while for a civil society group river Yamuna is essential for maintaining the security of the city's natural environment, but for a Mahawat it is primarily the source of drinking water for his elephants ("janwaron ke paani peene ka srot hain").

Alternatively for a pandit (religious practitioner) the river Yamuna is "Yamuna ji" meant to pursue his religious pursuits. Even when the interviewer prompted him about other benefits like water supply, the response recorded in video documentation was "logon se suna hai hamein nahin pata" (have heard but really don't know). Hamare liye to dharmik sthal hai (for us it is a religious place).

Benefits listed by the respondents:

Source of irrigation	Power production
Help in increasing the ground water level	Conducting religious activities
Balances the environment	Mining sand from the river
Swimming/ bathing	Fertile soil
A source of livelihood	Animal rearing (bathing of cows, elephants etc.)
Draining of sewage water	Washing clothes
Source of vegetables	Drinking water



Channels made for irrigation in river bed

TABLE 4.1: BENEFITS FROM RIVER YAMUNA (in percentage)

Benefits	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Irrigation	64.0	68.5	36.1	49.9	50.6
Power production (Electricity)	2.4	22.0	11.6	19.5	15.7
Drinking water	36.8	28.3	58.6	53.3	49.4
Increase ground water level	3.2	2.4	2.4	2.2	2.4
For religious activity	29.6	8.7	10.8	11.7	13.3
Helps in balancing environment	2.4	3.1	8.0	2.0	3.7
Get sand from river Yamuna	17.6	3.1	0	6.8	6.0
Swimming / bathing	6.4	0	0.8	1.6	1.8
Soil becomes productive after flood water recedes	0.8	0	0.8	0.2	0.4
Source of fish for consumption	12.0	6.3	0.8	3.0	4.0
Place to carry religious activities/ tourist place	3.2	0	0	0	0.4
Some people depend on river Yamuna for their livelihood	2.4	0	0	0	0.3
Source of water to clean / wash animals	1.6	12.6	0.4	3.4	3.6
Draining of sewage water	2.4	0.8	0.8	6.0	3.6
Place to wash clothes	1.6	0.8	0.4	2.8	1.8
Source of vegetables	0.8	0	0	0.4	0.3
DK/CS	0	0.8	2.0	1.8	1.5

In a multiple choice response, almost 51% of the respondents cited irrigation as being the most important benefit from the river followed by an average of 49% mentioning that the river is the source of drinking water to the city. Another 13% mentioned the river as being a place for religious activities. About **4% of the Delhiites believed that “draining sewage in river Yamuna is a benefit of having a river in Delhi”**.

4.2 WHAT THE RIVER MEANS TO THE CITY

The respondents were specifically given a choice on what the River means to them. The response are given in graph 4.1.

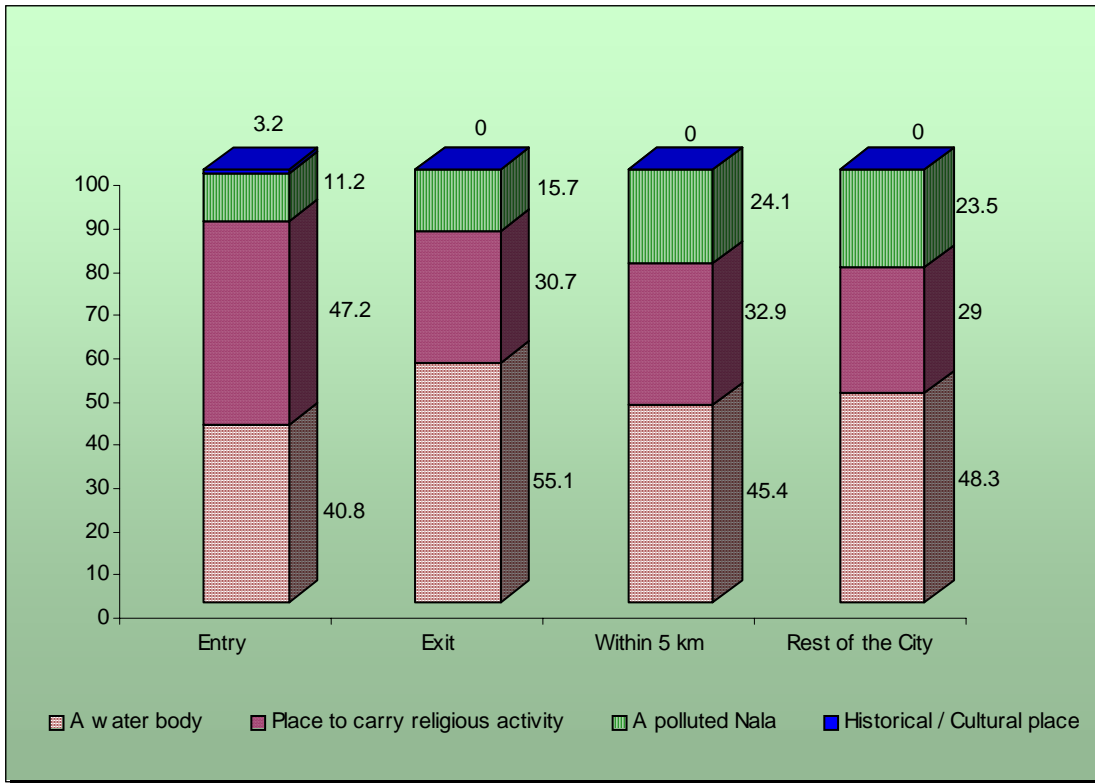
The plight of river Yamuna is well highlighted by the fact that a very low percentage of the respondent’s (ironically none in the ‘Youth’ category) considered Yamuna to be a historical or a cultural place / heritage.

Even amongst the respondent’s who are overwhelmingly dependent on the river Yamuna for their livelihood only 20% of the Mahawats and 25% of the Mallahs considered it to be a water body.

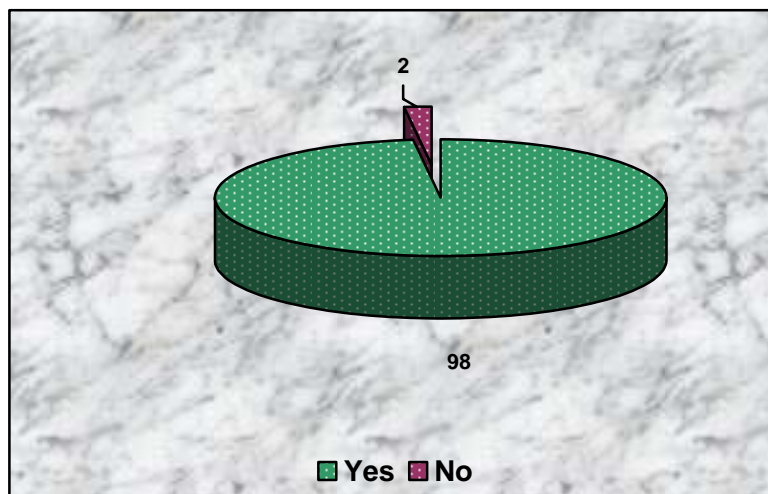
4.3 REASONS BEHIND VISTING THE RIVER

Overwhelming number (98%) of respondents admitted visiting the river Yamuna from time to time. But this number gets skewed as almost 63% claiming to visit while travelling from one part of the city to another.

GRAPH 4.1: MEANING OF YAMUNA FOR DELHIITES (In percentage)



GRAPH 4.2: DELHIITES RESPONSE FOR VISTING YAMUNA (In percentage)



Regarding the frequency of the visits to the river, 32% respondents claimed to visit the river once every month, which included 26% respondents from within a radius of 5 km of the river. Surprisingly people who live next to the river (at the entry and exit point of the river in the city) also had low frequency of personal visits to the river (refer table 4.2).

TABLE 4.2: FREQUENCY OF VISIT TO YAMUNA (in percentage)

Frequency	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Daily	27.2	15.0	43.8	18.5	25.4
Two-three times in a day	9.6	4.7	3.2	2.8	4.0
Three to six times in a week	15.2	24.4	12.9	19.1	17.7
Monthly	26.4	37.0	26.5	34.6	31.9
Yearly	5.6	18.1	11.6	22.7	17.2
Religious activity/ festival	7.2	0.8	0.8	0	1.2
Rarely	8.8	0	1.2	2.4	2.6

TABLE 4.3: REASON TO VISIT RIVER YAMUNA (in percentage)

Reasons	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
A religious activity	76.0	79.5	52.2	55.3	60.2
Picnic or family get together	17.6	23.6	7.6	6.2	10.2
Cross while travelling within the city	37.6	81.9	42.2	74.8	62.9
Educational activity	0.8	0.8	1.6	2.2	1.7
No Response	0.8	0	0.4	0	0.2
For fishing	4.0	0.8	3.6	0	1.5
For agricultural activity	17.6	0	5.6	0.2	3.7
To get sand from river Yamuna	4.8	0	0.4	0	0.7
Bathing	1.6	0	0.4	1.6	1.1
For bathing or cleaning/ drinking water for animals	0.8	0	1.2	0	0.4
Cleaning clothes	2.4	0	2.8	0.4	1.2
To recover left over useful material from garbage thrown into and around the river	0.8	0	1.6	0.8	0.9
As a play ground		0	0	0.2	0.1

It was not surprising to see that 63% of the respondents visit the Yamuna while commuting. Only 2% respondents visit Yamuna for educational activity. Also it was noticed that even among the people who reside at the entry and exit point or within the 5 km of River Yamuna only 17% (Entry), 24% (Exit) and 8% (within 5 km) visit Yamuna for picnics or family get together. This comprises mostly of youth and school children. The response of the civil society group was surprising where only 3% of the respondents visited Yamuna for educational activity (refer table 4.3).

Table 4.4: WHERE IN DELHI DO YOU VISIT THE RIVER YAMUNA ? (In percentage)

Locations	Entry	Exit	within 5kms	Rest of city	Total
N	100	100.0	100.0	100.0	100.0
Palla village	58.4	0.8	0.8		7.6
Jhangola village	11.2		9.6	2.6	5.1
Tiggipur	8.8	0.8	1.2	1.0	2.0
Kalindi Kunj	0.8	58.3	2.4	2.0	9.1
Okhla Barrage	1.6	14.2	4.0	2.6	4.3
Lohia Pul		4.7	2.4	2.2	2.3
Sahadhara		2.4	0.4	5.2	3.0
ITO	6.4	3.1	28.5	31.0	23.8
Laxmi Nagar		0.8	3.2	6.8	4.3
Wazirabad	1.6		8.8	19.9	12.4
Nizamuddin			12.0	3.0	4.5
Sarai Kale Khan			4.0	0.8	1.4
Sunderpur	7.2				0.9
Aksardham Mandir	4		0.8	0.8	1.1
Ghanta Ghar				1.0	0.5
Mithapur		2.4			0.3
Jaitpur Bridge		15.7		0.2	2.1
Rajghat		0.8	3.2	8.5	5.2
Yamuna Bazar		0.8	2.4	8.5	5.0
Gajipur Mandi			0.4	0.2	0.2
Majnu Ka Tila			3.2	0.4	1.0
Chandgiram Akhadi			3.6	0.2	1.0
Soniya Vihar			8.8	0.8	2.6
Shastri Park			4.8	0.2	1.3
Geeta Colony				0.6	0.3
Shanti Van				1.8	0.9
Gandhi Nagar				1.8	0.9
Nigambodh Ghat				1.6	0.8
Gokulpuri				0.2	0.1

ITO crossing being a centrally located place in Delhi was the most preferred site with 24% of the respondents claiming to visit the river Yamuna at the ITO bridge cum road access point to the river

It is generally believed that one of the reasons for the unfortunate lack of positive relationship between the river and the city in Delhi is an awful lack of access points from the roads to the proper river.

Chapter 5 DELHIITES HEALTH AND RIVER YAMUNA

It is said that 70% of the human body is made up of water. Thus, the water that we drink affects directly our body.

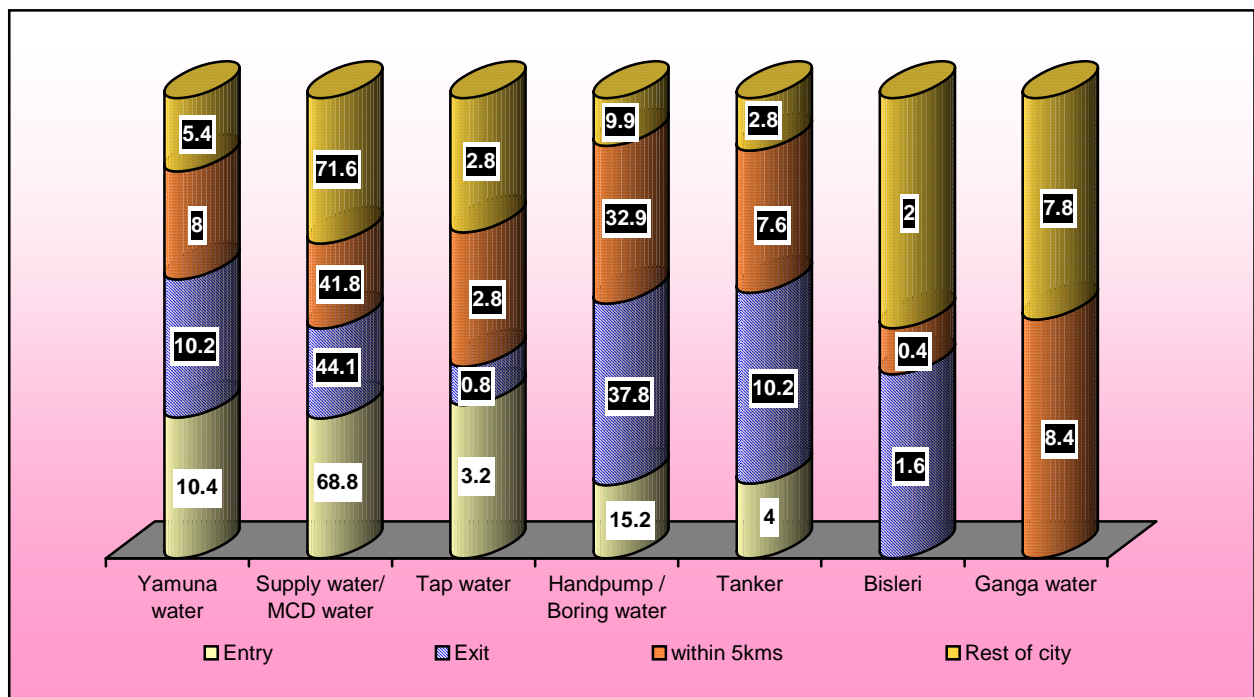
This chapter throws light on people's perception about the source of drinking water for their household. It then deals with the health of the respondents with specific reference to the occurrence of various water borne diseases in their families, and the linkages of the same with a deterioration in the health (water quality) of the river Yamuna over the decades. The chapter also deals with the people's recourse to preventive measures undertaken for cleaning of the water that they get for domestic purposes.

5.1 SOURCE OF DRINKING WATER

The respondents were asked about the main source of drinking water supply for their household needs. Majority (71%) of the respondents informed that their source of water supply is MCD. Respondents clearly had no information about the fact that it is DJB and not the MCD that supplies water in the city. A significant number of respondents indicated water from hand pumps or borings as their source of water. This included majority of respondents at the exit point and those residing within 5 km of the river Yamuna. These responses indicate that respondents were generally ignorant about the fact that river Yamuna is the main source of drinking water in Delhi.

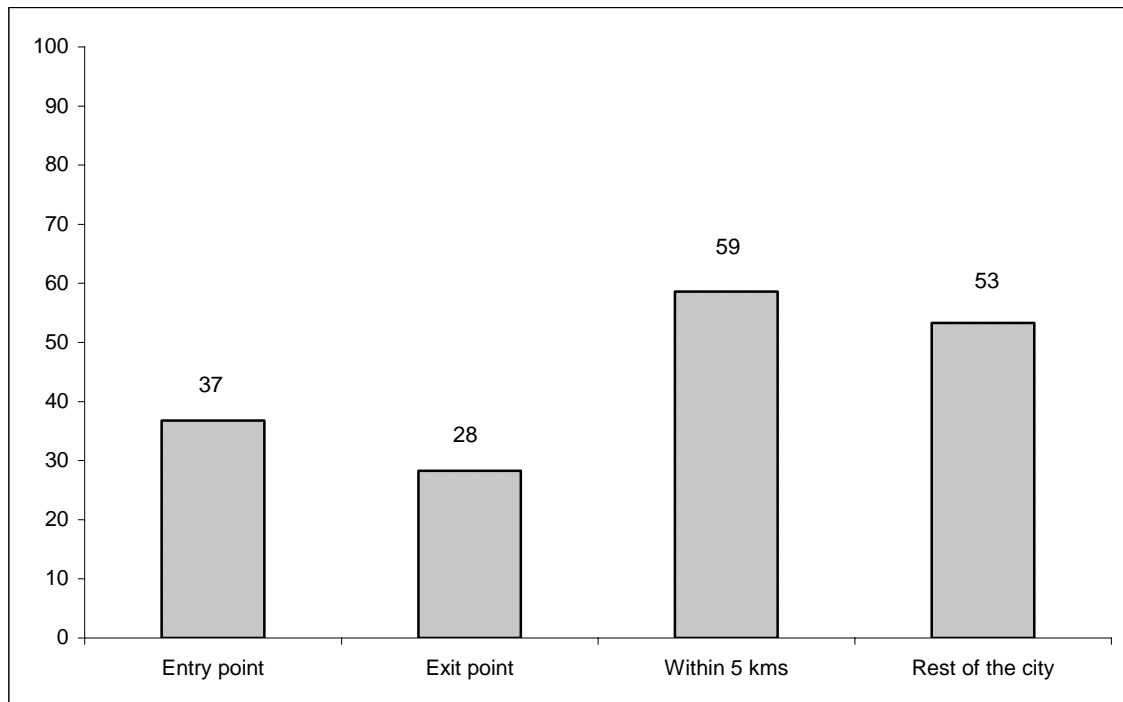
Only 10% of the respondent at the entry point, 10% at exit point, 8% from within 5 km radius of the river, and just 5% from the rest of the city knew and mentioned that the water in their household is from Yamuna.

GRAPH 5.1: THE MAIN SOURCE OF DRINKING WATER IN THE HOUSEHOLD (in percentage)



On the other hand, respondents in response to another query did consider river Yamuna as a source of drinking water and that this is one of its key benefits to the city. Approx. 59% of the respondents within 5 km radius of the river saw the river Yamuna as their drinking water source. Similar response has been cited from rest of the city as indicated in the graph below:

GRAPH 5.2: YAMUNA WATER AS SOURCE OF DRINKING WATER (in percentage)



The two responses as mentioned above, carry a contradiction in them as the respondents did consider drinking water to be a benefit from the river, they were not willing to admit that drinking water supplied in their house is from the river Yamuna. May be they do not want to believe that they are drinking the water supplied from a river that today is in such a bad shape.

During the interview, one of the respondent at the Palla village observed that “yahan pani to saaf nazar ata hai magar shaam tak rakhne ke baad laal ho jaata hai” (the river water here seems to be clear and clean but when we collect and store it, it usually turns red by the end of the day). While these facts have been noticed and also reported by various organisations no concrete action seems to have been taken in this respect. Another respondent at the exit point stated “ye paani apko peene ke kaabil lagta hai?” (do you think this water is worth drinking?). These observations seem to support the respondent’s inability to fathom the fact that the water that they drink could be from a river which is currently in such a bad shape.

About 44% of the respondents believed that the incidence of such water borne diseases has increased with time and is higher in this generation. About 75% of the respondents informed that these diseases were, however, not fatal.



The condition of Yamuna that is affecting the health of Delhiites

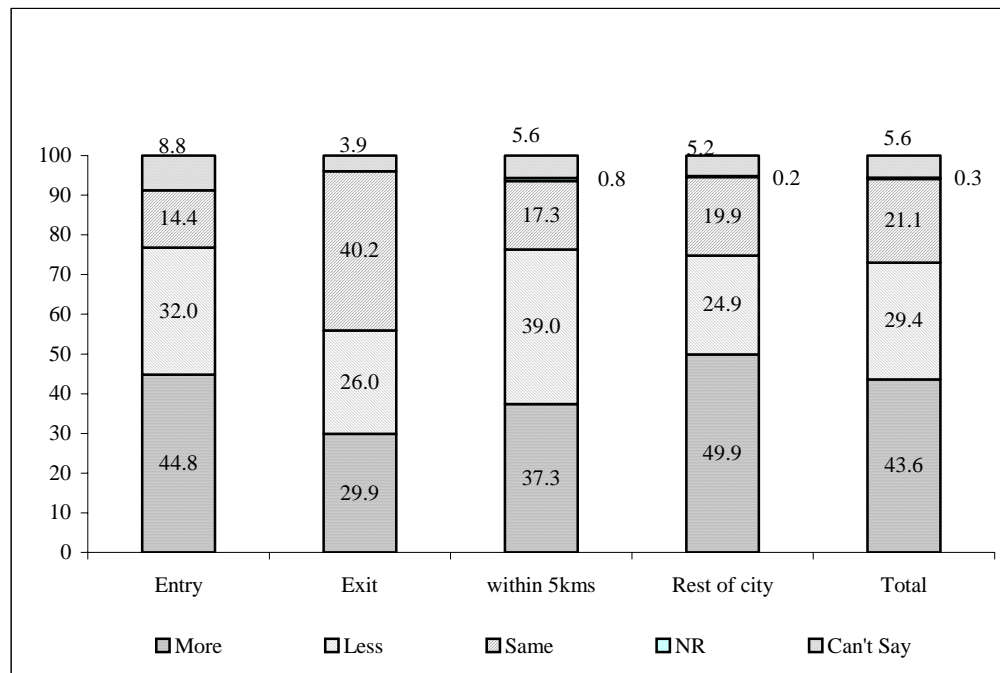
5.2 WATER BORNE DISEASE

TABLE 5.1: OCCURRENCE OF WATER BORNE DISEASES (in percentage)

Response	Entry	Exit	Within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	28.8	25.2	25.3	23.5	24.8
No	70.4	74.8	74.7	76.3	75.0
NR	0.8			0.2	0.2

About **25%** of the respondents' admitted that their family members are suffering from **water borne / related diseases. Typhoid followed by malaria and dysentery were the most common diseases.** Other diseases mentioned were jaundice, itching and skin disease, stones in parts of bodies, dengue, cholera, acidity, etc. As shown in table 5.1, similar responses were received from all the stratified locations in the city.

GRAPH 5.3: TREND OF WATER BORNE DISEASES (in percentage)



Nearly 44% of the respondents believe that the occurrence of such diseases is higher in the present generation. At Palla village 45% agreed to the same whereas nearly 30% at Jaitpur village had a similar response. It should be noted that 40% of the respondent at Jaitpur agree that occurrence of such diseases has remained unchanged in the past five years.

When asked about the reasons for the same, around 72% of the respondents opined that the polluted state of the water is the sole cause behind the occurrence of such diseases. Around 20% attributed environmental pollution as the reason. Some respondents mentioned reasons like infected food, poor sanitation, hardness in water supply, mosquitoes and flies and irresponsible behavior on the part of individual concerned. It is notable that 71% of the respondents informed that their doctors have also told them that it is the polluted water which is the main reason for the occurrence of these diseases.

It was not surprising to notice that the doctors also indicated polluted water to be the key reason behind the widespread health problems in the city.

About 72% of the respondents feel strongly that high incidence of water borne diseases is due to the current condition of river Yamuna and that there is a clear link between the state of the river Yamuna and an increase in the incidences of illness in the city.

**GRAPH 5.4: POLLUTED WATER - THE ROOT CAUSE OF DISEASES (In percentage)
(Multiple response)**

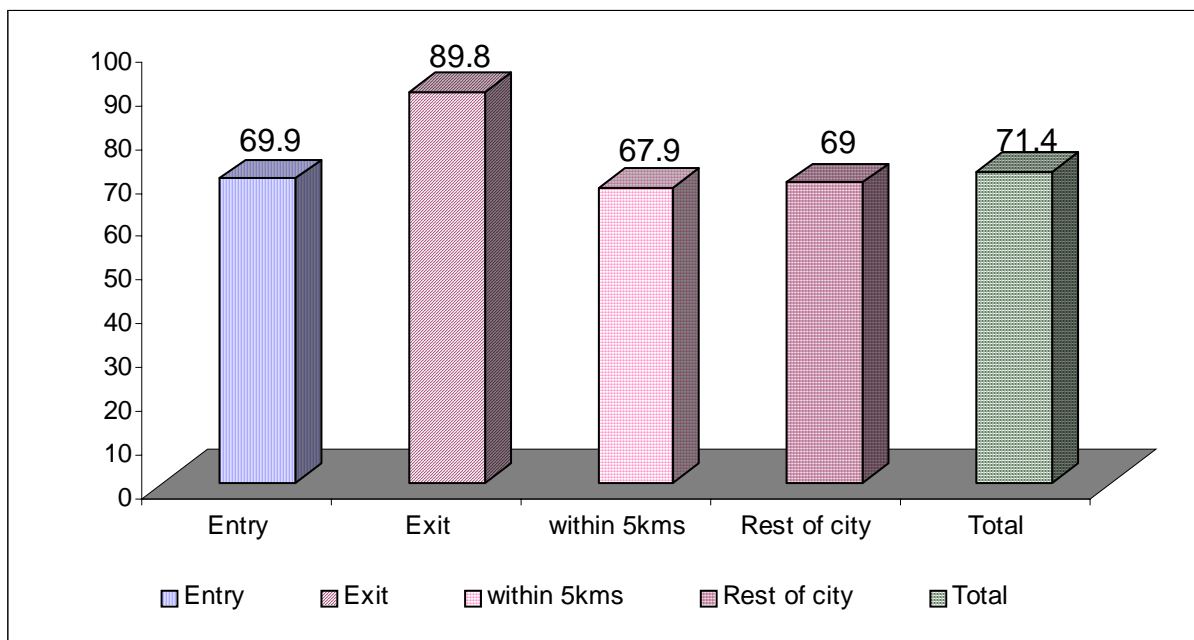


TABLE 5.2: LINK BETWEEN RIVER YAMUNA AND WATER BORNE DISEASES (In percentage)

Response	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	50.4	75.6	72.7	76.9	72.4
No	46.4	23.6	25.7	21.7	26.0
NR	3.2	0.8	1.6	1.4	1.6

5.3 PREVENTIVE MEASURES UNDERTAKEN

The responses made as above clearly indicate that people are generally aware about the occurrence and the causes of the water borne diseases that they or their family members suffer from.

But does this level of awareness govern our attitude and practice/s towards the river? Have we stopped dumping our garbage and left overs from our religious ceremonies into the river Yamuna? If NO, then there is huge gap between knowledge and practice. Instead the majority (56%) of the respondents mentioned using water purifiers, chlorine tablets, mineral water, etc., as some of the preventive measures taken by them against consumption of polluted water and falling prey to the diseases.

The statistics as above reveal the fact that most of the preventive activities against diseases, be it boiling of water, using water purifier or the use of chlorine tablets etc. are an in-house activity and do not have a community based approach. The irony gets reinforced when only 2% of the Delhiites say that they would keep their surroundings clean to keep their family members healthy and safe.

The response indicates Delhiites 'immediate' short term approach to life. The preventive measures lack understanding and search for long term solutions.

TABLE 5.3: PREVENTIVE MEASURES UNDERTAKEN (In percentage)

Preventive measures	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Boiled water	30.4	63.5	34.3	28.5	35.1
Water filter (Water purifier / RO system / Aqua guard)	56.5	34.1	42.8	62.5	54.1
Using chlorine	8.7	1.2	12.4	5.0	6.1
Proper arrangement of sewage / fill up the pit	4.3	3.5	8.6	0.3	2.7
Apply cream/ antiseptic on your body after bath	2.2	0	1.0	0.6	0.7
We use mosquito net / All out mosquito repellent	0	10.6	1.0	3.7	3.9
We clean water cooler everyday or add kerosene oil	0	1.2	0	0.3	0.4
Cover food and water	0	0	1.9	3.1	2.1
We keep surroundings clean	0	0	2.9	2.5	2.0
Use mineral bottle/ water bottle/ bisleri water	0	0	0	1.2	0.7

Chapter 6

CURRENT STATUS RIVER YAMUNA

‘Yamuna is dying’ – is currently a very frequently voiced/ heard opinion. The KAP elicited responses from Delhiites behind the present condition of the river Yamuna in Delhi. This chapter highlights the respondents’ perception about the most polluted stretch of the river in the city and tries to analyse the rationale for the apathy that the people in the city show in general towards the sad condition of the river.

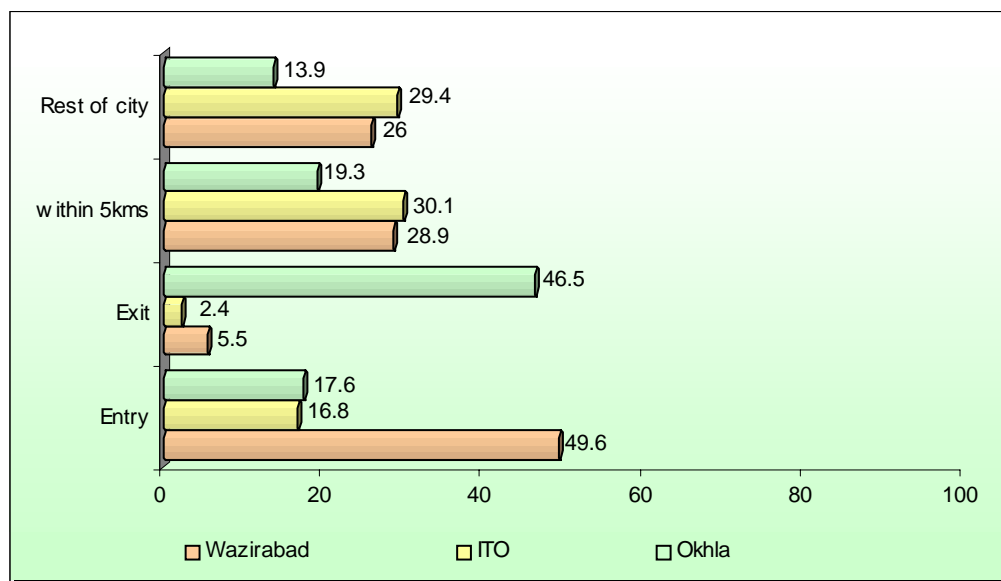
It also elaborates on the reasons behind the current threatened state of the river and its floodplain / river bed as well as who in their view is responsible for the same.

6.1 CURRENT SCENARIO

Respondents’ relation and attitude towards the river Yamuna was well depicted with their response when they were asked about their perception of the current state of the river Yamuna. The various responses, as listed below, bear testimony to the current plight of the river.

The river is worst affected within the city limits is highlighted by the fact that about 22% respondents at village Palla (entry point) consider that the water quality in the river is good, while 60% at village Jaitpur (exit point) maintain that the quality of water in the river is worst, and 30% maintain that it is nothing more than a nalah (a drain).

GRAPH 6.1: MOST POLLUTED STRETCH OF YAMUNA (In percentage)



6.2 THE MOST POLLUTED STRETCH

The three most polluted stretches identified by the respondents were Wazirabad (27%), ITO (24%) and Okhla (20%).

It may be noticed that in general respondents residing or associated in any manner with a particular stretch of the river considered that to be the most polluted stretch of the river. About 29% of the respondents from across the city mentioned the river stretch at ITO to be the most polluted stretch of the river.

TABLE 6.1: CURRENT STATE OF RIVER YAMUNA (In percentage)

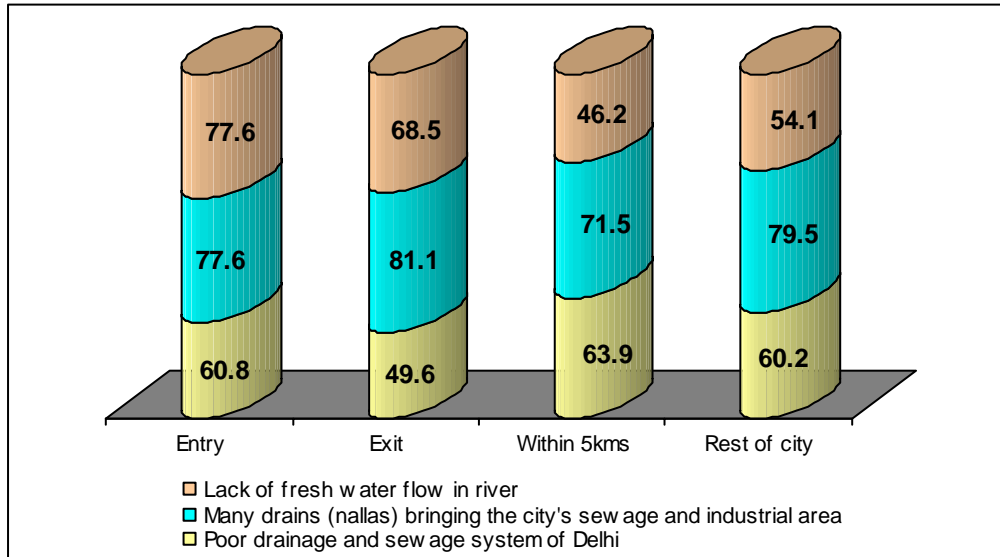
Current Status	Entry	Exit	within 5 km	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Reduced flow of water	24.0	7.1	10.8	4.4	8.8
Dry River	8.0	3.9	4.8	4.6	5.0
It is a Naala	14.4	30.7	30.1	24.7	25.5
The quality of water is worst / polluted	29.6	60.6	51.0	65.6	56.9
Near to the Palla village water is good	21.6	0.8	0.4	1.2	3.5
Future of river Yamuna is in danger	2.4	2.4	3.2	2.0	2.4
DK/CS	0.8	0	0.4	0	0.2

6.3 REASONS BEHIND THE CURRENT STATE

The reasons for the most polluted stretch of the river Yamuna are:

1. Approx 78% respondents blamed the drains that are bringing city sewage into the river Yamuna.
2. Nearly 60% blame it to the poor drainage system in Delhi
3. About 57% believe that lack of fresh water flow has led to the polluted state of the river Yamuna. Religious practitioners, school children and the youth all responded similarly.

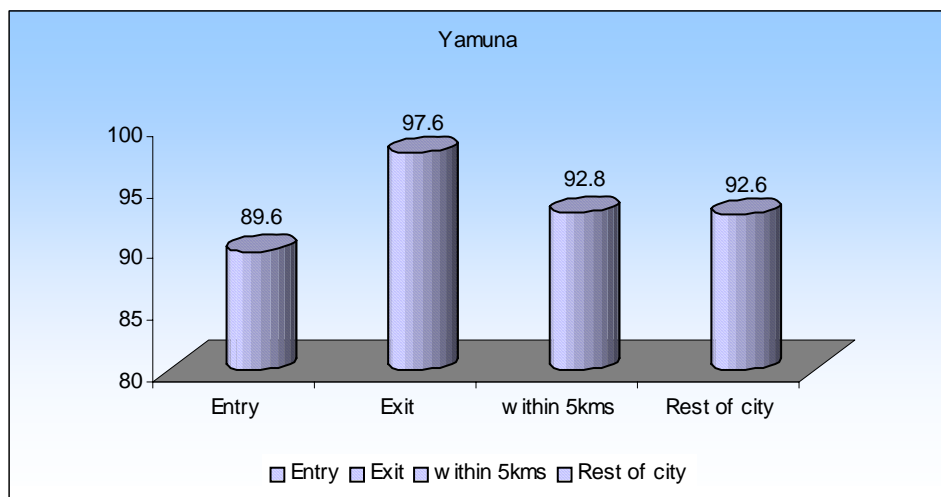
GRAPH 6.2: REASONS FOR THE CURRENT STATE OF RIVER YAMUNA (In percentage)



6.4 POOR SEWAGE AND SANITATION ADDING TO THE IGNOMINY OF YAMUNA

When specifically asked about the disposal of sewage and the sanitation situation in the city, 93% of the Delhiites agree that the sewage of the city is getting disposed off into the river Yamuna (refer graph 6.3). No wonder that on the realization of this reality about the river, majority of the respondents wished to shut their eyes off with respect to the fact that their household drinking water might be getting sourced from the same river Yamuna.

GRAPH 6.3: SEWAGE GOING TO RIVER YAMUNA (In percentage)



6.5 THE EXISTING CRISIS, THE UPCOMING THREATS AND THE RESPONSIBILITY

About 95% of the Delhiites believe that the condition of Yamuna is a man made crisis. Delhiites are aware about the existing situation of river Yamuna, the decrease in water flow, dryness becoming more of a nalah than a river. But the irony remains that this clarity is not depicted in their actions or the prevailing practices with respect to the river.

Even after an understanding that the crises is man made and not natural, the Delhiites actions are not governed by this realisation - this seems to be the unfortunate irony.



Regarding the ongoing constructions in the river bed 43% of the residents considered the under construction Common Wealth Games Village to be the biggest threat to river Yamuna, with 37% identifying Yamuna Metro Depot and the Parsvanath Metro Mall as the next biggest threat to it.

TABLE 6.2: UPCOMING THREATS (LOCATION WISE). (In percentage) Multiple Responses

Respondents	Parsvanath Metro Mall	Yamuna Metro Depot	Heliport	Roads and Bridges	Common Wealth Games Village	All	DK	NR	Total
N	36.8	37.3	25.2	27.8	43.2	12.8	10.0	2.4	100.0
Professionals	36.0	29.3	18.7	30.7	48.0	22.7		5.3	100.0
Villagers	32.1	45.2	22.6	29.8	40.5	15.5	7.1	1.2	100.0
Households (housewife/ head of the Family)	41.0	38.6	28.9	22.9	36.1	12.7	15.1	3.6	100.0
Industries	39.0	39.0	43.9	22.0	46.3	12.2	9.8	2.4	100.0
Shopkeepers	47.1	35.9	24.2	30.7	48.4	11.1	5.9	0.7	100.0
Households (unauthorized colonies)	22.2	31.1	26.7	33.3	28.9	6.7	20.0	6.7	100.0
Waste collectors and recycling groups	30.6	30.6	22.4	18.4	38.8	12.2	20.4	0	100.0
Government bodies	41.9	32.6	27.9	18.6	46.5	14.0	4.7	2.3	100.0
Youth	38.1	29.5	30.5	20.0	42.9	17.1	11.4	1.9	100.0

Pandits (religious leaders)	41.8	47.8	23.9	31.3	43.3	9.0	4.5	1.5	100.0
Real estate	30.4	54.3	21.7	26.1	50.0	13.0	8.7	6.5	100.0
Mallahs	12.5	37.5	0	62.5	62.5	0	12.5	0	100.0
Mahawat	20.0	40.0	20.0	40.0	60.0	0	20.0	0	100.0
Dhobis	13.6	31.8	18.2	36.4	22.7	4.5	36.4	4.5	100.0
Civil society groups	27.0	32.4	5.4	45.9	51.4	18.9	8.1	0	100.0
School children	32.8	41.4	29.3	32.8	51.7	5.2	5.2	0	100.0

TABLE 6.3: UPCOMING THREATS (CATEGORY WISE). (In percentage)

Upcoming Threats	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Parsvanath Metro Mall	24.0	61.4	20.5	41.7	36.8
Yamuna Metro Depot	33.6	64.6	23.7	38.0	37.3
Heliport	15.2	49.6	13.3	27.4	25.2
Roads and Bridges	10.4	27.6	43.4	24.5	27.8
Common Wealth Games Village	32.8	32.3	43.4	48.5	43.2
All	24.8	9.4	8.0	13.1	12.8
DK	12.0	3.9	12.9	9.5	10.0
NR	4.8	0	3.6	1.8	2.4

TABLE 6.4: WHO IS RESPONSIBLE FOR THE CURENT STATE OF THE RIVER YAMUNA? (IN PERCENTAGE)

Responsibilities	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Government	75.2	89.8	83.5	88.7	85.9
Citizens of Delhi	71.2	92.9	68.7	78.9	77.2
Industries and Factories	68.0	73.2	35.7	64.0	58.7
Climate Change	11.2	0.8	3.2	8.0	6.3
DK	0	0	0	0.2	0.1
NR	0	0.8	0	0	0.1

It is heartening to note that while 86% of the respondents (in a multi option query) blamed the government agencies for the crisis as uch as 77% also blamed the citizens of Delhi for the same, alluding thereby that it has to be a combined effort of the government and the citizenry if the river is to be revived in the city.

Chapter 7

ACTIONS OF DELHIITIES AND ITS IMPACT

This chapter elaborates on the current practices impacting the river in the city as revealed by the respondents.

It begins with an overview of the Delhiities perception about the viability of the different kinds of uses of the water of the river in the city. The chapter also elicits information about the impact of various activities associated with the cultural or religious practices being performed at the expense the river Yamuna including the disposal of left overs from the religious ceremonies including murtis, asthis/ashes, garbage into the river. The chapter also carries the measures identified by the respondents to reduce the pollution of the river Yamuna.

7.1 PERCEPTION ABOUT RIVER YAMUNA WATER

In the context of river Yamuna being good for **boating** or not, around **74% of the Mallahs, whose livelihood depends on it, don't consider it to be good enough**. Interestingly around 41% of the respondents believe that vegetables grown in Yamuna water is good enough for consumption (refer table 7.1).

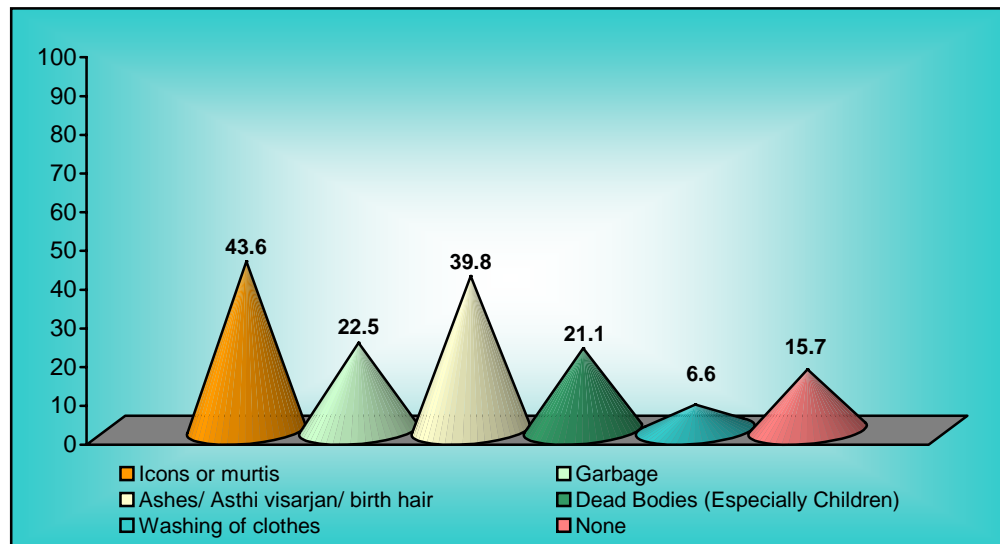
TABLE 7.1: RESPONSE ON PERCEPTION OF WATER QUALITY IN THE RIVER (In percentage)

Perception	Yes	No	Can't say	NR
Is river Yamuna water good for drinking?	4.5	94.8	0.7	0
Is river Yamuna water good for bathing?	17.2	81	1.8	0
Is the vegetable grown in river Yamuna bed good for health?	41.2	53.7	5.1	0
Is river Yamuna water good for cattle?	23.7	73.6	2.7	0
Is river Yamuna water good for boating?	28.3	67.2	4.4	0.1
Is river Yamuna water good for birds and water fauna?	25.9	70.2	3.7	0.2

7.2 CARELESS DISPOSAL OF WASTE INTO THE RIVER

The actions of Delhiities irrespective of the education, class and caste are governed by either their imbibed religious values or their cultural customs. These ingrained values make people practice customs like asthi visarjan, murti visarjan, deh visarjan (dead bodies in water) and other religious offerings made after different religious ceremonies (pujas).

GRAPH 7.1: DISPOSAL OF RELIGIOUS ITEMS IN RIVER YAMUNA (In percentage)



Delhi being a city of varied cultures and religious practices like Chhat puja, Durga puja, Mundan, etc. all of which currently adds to the pollution load of the river in form of waste (left overs) disposal.

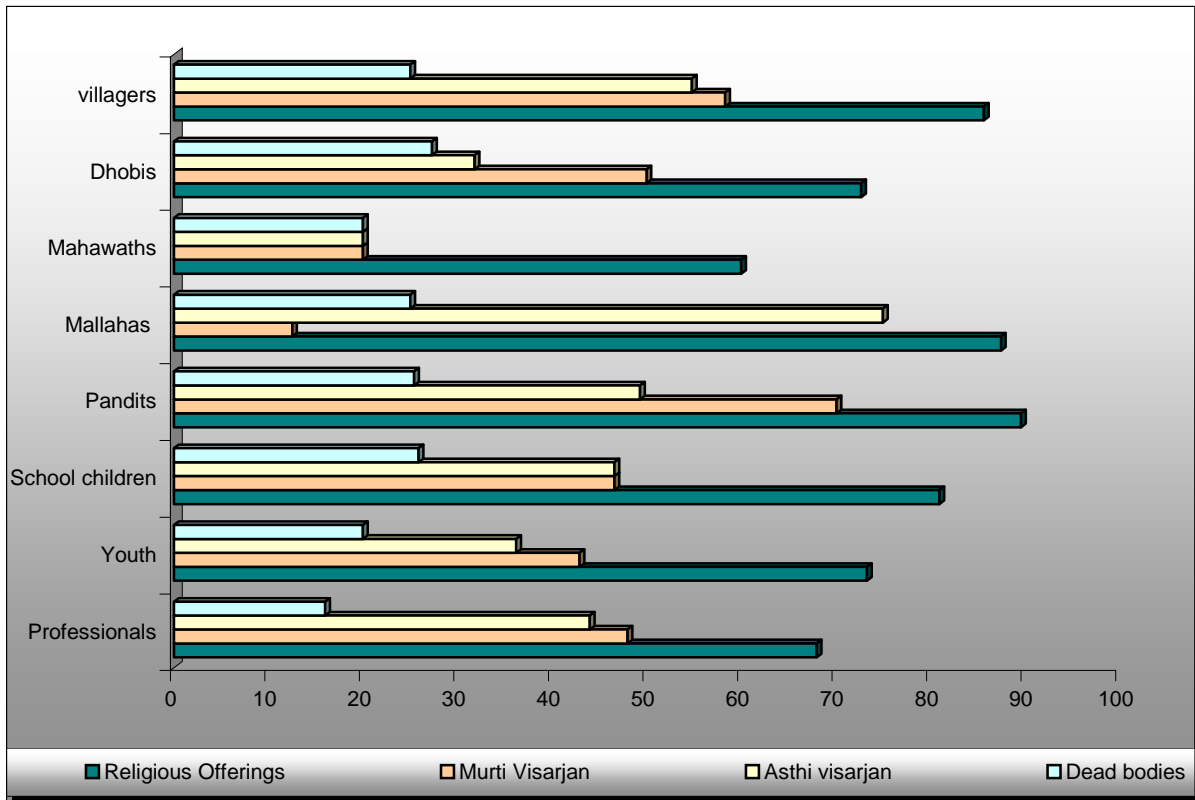
Graph 7.1 above, indicates that around 75% of the respondents admitted that they dispose off the left overs from their religious ceremonies into the river Yamuna. Around 23% of the respondents dispose of their garbage into the river Yamuna. 40% of the Mahawats, 38% of Mallahs and 38% of the households mentioned that they do throw garbage into the river Yamuna. Regrettably even the supposedly aware sections like the school children (24%) and youth (18%) admitted throwing garbage into the river Yamuna.

7.2.1 Religious Practices

From birth till death various cultural practices are followed which are governed by different religious activities of the respondents. For example, the disposal into the river of the first hair of the child in Muslims, of asthis of the dead of the Hindus, flowers and matki (pot) after puja or snan (bath) year after year all add up to the pollution load in a river that has little flow to take these material away. This worsens the condition of the river day after day.

When interviewed about the disposal of these materials in river Yamuna, 75% of the respondents admitted that they dispose off religious offerings in the river, 44% admitted to murti visarjan and 40% to asthi visarjan. However, the percentage of disposal of dead bodies was only 7%.

GRAPH 7.2: RELIGIOUS PRACTICES AND THE RIVER YAMUNA (In percentage)



Not surprisingly (as is depicted in graph 7.2) that the religious disposal in form of murtis, asthis, offerings, etc. was practiced on similar lines almost across the board.

This indicates that undertaking such practices is so imbibed in the culture of India that it is practiced across one’s occupation, educational status, distance from the river etc. Large number of the respondents opined that “ye to dharmik kaam hai jo sadiyon se chala aa raha hai yamuna ji inse nahin balki industries ki gandagi se pradooshit ho rahi hain.” (it is not these religious activities which have been going on for ages that are responsible but it is the industrial wastes that pollute the river Yamuna.)



Around 83% of the respondents admitted to the fact that these activities pollute the river Yamuna. The continuance of these practices is due to the religious norms advocated by the religious practitioners (pandits) and lack of options available for safe disposal of these items. People also replied that “dharmik gatividhiyon se Yamuna kabhi gandi nahin hogi” (religious activities never pollute the river).



7.2.2 Washing Clothes

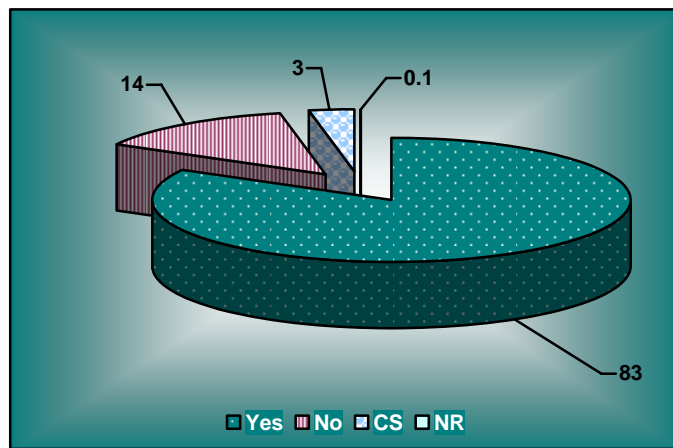
Only 7% of the respondents admitted to washing their clothes in the river Yamuna. It was not surprising to receive a dismissive response from the respondents in Jaitpur and at ITO that “ye paani kya kapde dhone ke layak hai” (is this water fit for washing clothes?).

7.3 RESULTS OF IRRESPONSIBLE ACTIONS

Nearly **83% of the respondents** agreed that their various activities added further to the polluted state of the river Yamuna. However, they offered their own rationale behind these actions especially when it is related to religious offerings. A dhobi in his video recording said “Puja paath ki saamagri to dalengi hi, kya Karen, jamuna mayya jahan bulaengi wahan tak jaenge puja karne” (religious offerings into the river Yamuna is a compulsion and we shall go to any length for the same).

Similar was the response from the religious practitioners (Pandits) who said “Yamuna ji puja se gandi nahin hotin, 5 - 10 gm phool se kya hoga, woh to Yamuna ji mein sama jaate hain, usse koi dikkat ki baat nahin” (river Yamuna does not get polluted from religious offerings. The 5-10 gms of flowers hardly pollute the river).

**GRAPH 7.3: DOES THE ACTIVITIES OF RESPONDENTS POLLUTE THE RIVER YAMUNA
(In percentage)**



CS: Can't Say NR: No Response

7.4 ALTERNATIVES TO THE CURRENT PRACTICE OF DISPOSAL OF VARIOUS ITEMS INTO THE RIVER YAMUNA

Given below are some of the solutions / alternatives as suggested by the respondents:

- A separate water body near river Yamuna to take bath and snan (religious bath)
- Construction of electrical crematorium
- A separate canal to carry out the religious activities
- Disposing off garbage in a pit and not in the river Yamuna
- Recycling of religious offerings like flowers and pots that are thrown into the river
- Government initiative to construct a separate place for carrying out of these activities. Diverting off or proper treatment of garbage and sewage before it enters the river Yamuna
- Punish people who pollute the river Yamuna

These responses are a positive sign of the willingness of the people to take ameliorative actions for the river. In the Indian religious and cultural milieu the religious ceremonies need to be very well taken care off. Thus, it was, encouraging to note that the respondents are willing to conduct their religious activities in the river water but at a designated site away from the main channel so as to avoid the latter from getting polluted. A small pond or separate canal could be considered. However, this would require a firm action by the government agencies.



Would having more number of electric crematorium be of help to reduce the river Yamuna pollution from the above seen practice of burning the dead bodies on the river bank?

7.5 SHIFTING THE BURDEN - LETS BLAME OTHERS

One's life becomes very easy if the blame for common ills could be shifted on to the others. On a similar note the respondents (77%) took no time to opine that the jhuggis and slums on the riverbed of the river Yamuna should be demolished in order to save the river.



It was not surprising to see that the households (53%) in the unauthorised colonies were guarded in their suggestions for the removal of the slums. On the other hand around 88% of the government officials interviewed were in favour of the demolition of the jhuggis. These are revealing statistics and symptomatic of the official line of thinking which has no qualms in putting the blame for the ills of the river on to the shoulders of the people from the lower economic strata inhabiting these jhuggies in the river bed (refer table 7.2).

It is common knowledge that when you blame others, you give up your own power to become a “change agent”. Delhiities have unfortunately followed the same philosophy when it comes to the revival of the river Yamuna.

When asked about their opinion on the dhobi ghats on the river bank, about 92% of them said that the dhobi ghats should be shifted elsewhere, without realising that wherever the dhobi ghats may be relocated the river would ultimately get the refuse through one or the other drains in the city unless the drains themselves got treated first (refer table 7.3).

The response from the Dhobi’s themselves was interesting with 46% saying NO and 54% saying YES. Dhobis interviewed also mentioned “pehle to Yamuna ji mein dhote the, ab nal ke paani se dhote hain Yamuna ke tat par, kyunki Yamuna gandi ho rahi hai” (earlier we used to wash the clothes in Yamuna water, but now we use tap water to wash the clothes on the banks of the river since the river water has gotten so polluted that it is unfit for any use) (refer table 7.4).

TABLE 7.2: WHETHER JHUGGIES SHOULD BE DEMOLISHED TO SAVE RIVER YAMUNA FROM POLLUTION? (In percentage)

Responses	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	82.4	81.9	62.2	81.7	77.0
No	17.6	18.1	37.8	18.3	23.0

TABLE 7.3: WASHING GHATS ON RIVER YAMUNA (In percentage)

Response location wise	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	10.4	7.9	8.8	7.8	8.4
No	89.6	92.1	91.2	92.2	91.6

TABLE 7.4 WASHING GHATS AT RIVER YAMUNA (In percentage)

Response category wise	Yes	No	Total
N	8.4	91.6	100.0
Professionals	2.7	97.3	100.0
Villagers	6.0	94.0	100.0
Households (housewife/ head of the Family)	7.8	92.2	100.0
Industries	4.9	95.1	100.0
Shopkeepers	11.1	88.9	100.0
Households (unauthorized colonies)	15.6	84.4	100.0
Waste collectors and recycling groups	14.3	85.7	100.0
Government bodies	4.7	95.3	100.0
Youth	3.8	96.2	100.0
Pandits (religious leaders)	6.0	94.0	100.0
Real estate	6.5	93.5	100.0
Mallahs		100.0	100.0
Mahawat		100.0	100.0
Dhobis	54.5	45.5	100.0
Civil society groups	2.7	97.3	100.0
School children	8.6	91.4	100.0

Chapter 8

JOINING HANDS TO BRING BACK THE GLORY OF YAMUNA

It is clear that there is a need to bring in attitudinal changes towards the river among the citizens of Delhi irrespective of any group or class. The survey clearly indicates that the habit of throwing various things (garbage, religious offerings, etc.) into the river transcends differences of all kinds amongst the people including the educational levels.

As Delhiites are aware about the harm that they are causing to the river and are keen to take up ameliorative actions as enumerated by them. The need is clearly to provide them with options and alternatives for the needful.

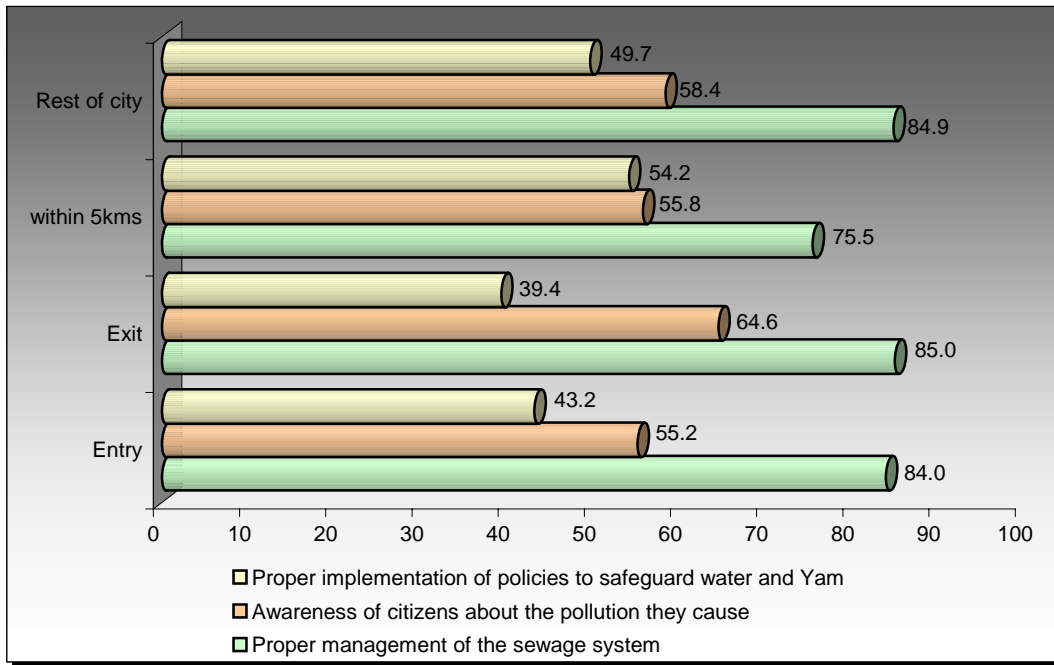
This chapter accordingly focuses on people's perception on:

- 1 Best possible solutions to keep river Yamuna clean
- 2 How to raise the people's awareness about the matter
- 3 What group/s to be targeted and who would best be the pressure group/s
- 4 Which measures to use?
- 5 What message/s to be developed and publicised

8.1 BEST POSSIBLE SOLUTIONS

Respondents were asked to state the best possible solution to improve the condition of river Yamuna. The respondents emphasised proper management of sewage system (83%), followed by a need of widespread awareness about the matter and the threatened state of the river Yamuna (58%) and proper implementation of the policies (49%) to safeguard the river.

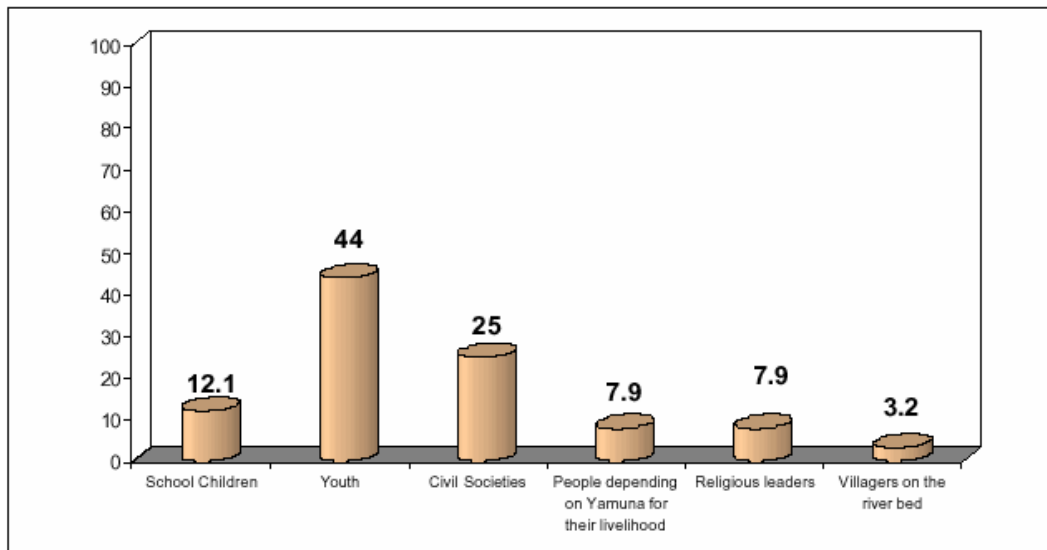
GRAPH 8.1: THREE BEST SOLUTIONS TO IMPROVE RIVER YAMUNA (IN PERCENTAGE)



8.2 MAKING PEOPLE AWARE

It is critical to increase the level of awareness among the public that would bring in appropriate behavioural changes in them to prefer environment friendly lifestyle leading to a reduction in the pollution load onto the river Yamuna. Some of the awareness generation tools as enumerated by the respondents are given in table 8.1.

GRAPH 8.2: TARGETS FOR THE CAMPAIGN (In percentage)



8.3 WHAT GROUP TO BE TARGETED/ WHO WILL BECOME THE PRESSURE GROUP/S?

It is necessary to target the right audience with the right messages for effective results. The respondents identified the following groups that need to be targeted as part of an awareness campaign.

TABLE 8.1: VARIOUS TOOLS TO SPREAD AWARENESS (In percentage)

Responses category wise	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Audio-visual media	80.0	82.7	79.9	85.3	83.0
Talks/ discussions	42.4	43.3	30.1	34.0	35.3
Active SHGs and Civil society groups	27.2	52.8	54.2	47.9	47.5
Nukar Natak/ Road shows in villages on or near the river bed	48.8	39.4	34.1	38.6	38.8
Public meetings	72.8	49.6	60.6	56.3	58.6
Awareness Campaign for the industries	15.2	18.1	28.1	29.4	25.9
Door to door visits by Municipal officers	0.8	0.8	0	0	0.2
In every village there should be one person, chosen by the Panchayat to spread the message	1.6	0	0	0.2	0.3
Committee/s in every village/ town	1.6	0	0	0	0.2

8.4 MEASURES TO TAKE

8.4.1 Infrastructural Changes

The survey highlights that people are ready to adopt alternative measures for various activities that will contribute in safeguarding the river Yamuna. What needs to be done is making options available for them to carry out various activities. These will include infrastructural arrangements to carry out the religious activities like a separate pond / water body to carry out the religious activities.



8.4.2 Increase in number of electrical crematorium

More electric crematorium should be created with affordable prices for benefits of the general public. This will reduce the pollution at the river bank. Religious leaders and pandits should come forward for its promotion.

8.4.3 Increase in STPs and proper maintenance of STPs

Delhi alone contributes around 3,296 MLD (million liters per day) of sewage by virtue of drains falling into the river Yamuna. The figure itself reveals the need of maintained STPs in Delhi.

8.4.4 Proper management of garbage

Proper segregation of biodegradable and non-biodegradable garbage will contribute to reduce the waste that either directly goes to the Yamuna or goes to the STPs. In both the cases it will contribute in reducing the pollution.

8.4.5 Construction of community toilets and proper sanitation in slums and villages

8.4.6 Construction of dhobi ghats separately and at distance from Yamuna

As noted the demolition of dhobi ghats is not a solution to reduce the addition of polluted water through dhobi ghats. As stated by a dhobi in a video recording, the reduction in number of dhobi ghats has rather added to the usage of Yamuna water for washing clothes. Thus, it would be rather beneficiary to have good structured dhobi ghats zone wise in Delhi. This should rather be attached with a STP.

8.5 STRATEGY AND MESSAGES TO SPREAD

The respondents were also asked about the message that should be passed onto the people in order to mobilise them for safeguarding the river Yamuna.

8.5.1 Messages

- Inform Delhiites about the environmental crisis that Yamuna is going through and its implications on the city.
- In simple terminology, inform people about the pollutants that are added in the river by Delhiites and the adverse impact on the river Yamuna.
- Bring in realisation that the water we drink comes from Yamuna and thus it becomes more important for Delhiites to clean the river Yamuna for their own good.
- Create awareness about the health hazards in the long and short term that can occur due to the polluted and contaminated water.
- Inform them about initiatives taken in direction of “saving river Yamuna”.
- Encourage them to adopt practices that safeguard the river Yamuna.

8.5.2 Stakeholders to be involved

Respondents mentioned that bringing in a change in attitude and practice of people is not an easy challenge to meet. Thus, they suggested involving stakeholders who can create impact on the minds of Delhiites.

1. Messages through religious leaders in India will bring in a lot of attitudinal changes, especially with respect to our religious and cultural practices.
2. Endorsement by an popular ‘ambassador for the river Yamuna’ like a film or sports celebrity

8.5.3 Media campaign

The media campaign needs to be formulated with high emphasis on:

- Large scale media campaign that reaches to all segments of the society
- The campaign needs to have a multi-pronged approach and using the principles of ‘social marketing’, may sell to Delhiites the ‘idea’ of environmental protection and the restoration of river Yamuna.
- Sensitizing the group of people who derive their livelihood from Yamuna- Mallahs, Mahawats, Dhobis etc.
- Use of audio-visual media
- Public lectures
- Mobilizing RWAs and civil society groups to take action in this direction
- Use of outreach techniques - nukkar natak, road shows etc.
- Say NO to disposal of garbage in Yamuna

TABLE 8.2: MESSAGE TO BE PASSED TO CITIZENS (In percentage)

Responses	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Inform them about the health hazards caused by polluted waste	84.0	90.6	69.5	76.7	77.6
Pass the message that the status of Yamuna is a man made crises	52.0	76.4	56.2	59.0	59.7
NO to disposal of garbage in Yamuna	70.4	53.5	67.1	67.8	66.1
Motivate citizens to avoid wasting water to reduce pollution	45.6	62.2	43.0	44.5	46.5
Mobilize religious leaders to persuade citizens to use alternatives	17.6	34.6	24.9	24.5	25.0
Do not encroach onto the river bed / flood plain	1.6	3.1	4.0	3.2	3.2

TABLE 8.3: MESSAGE TO BE PASSED TO CITIZENS (In Percentage)

Respondents	Inform them about the health hazards caused by polluted waste	Pass the message that the status of Yamuna is a man made crises	NO to disposal of garbage in Yamuna	Motivate citizens to avoid wasting water to reduce pollution	Mobilize religious leaders to persuade citizens to use alternatives	Do not encroach onto the river bed / flood plain	Total
N	77.6	59.7	66.1	46.5	25.0	3.2	100.0
Professionals	81.3	60.0	68.0	52.0	25.3	2.7	100.0
Villagers	88.1	54.8	60.7	52.4	45.2	1.2	100.0
Households (housewife/ head of the Family)	74.7	65.7	65.1	40.4	21.7	3.0	100.0
Industries	80.5	43.9	65.9	36.6	22.0	0	100.0
Shopkeepers	77.1	63.4	69.9	44.4	21.6	2.0	100.0
Households (unauthorized colonies)	53.3	60.0	60.0	48.9	22.2	0	100.0
Waste collectors and recycling groups	77.6	49.0	67.3	38.8	28.6	2.0	100.0
Government bodies	81.4	74.4	72.1	55.8	11.6	11.6	100.0
Youth	78.1	65.7	75.2	41.9	34.3	7.6	100.0
Pandits (religious leaders)	79.1	61.2	59.7	49.3	19.4	3.0	100.0
Real estate	87.0	43.5	73.9	41.3	15.2	2.2	100.0
Mallahs	75.0	37.5	50.0	50.0	62.5	0	100.0
Mahawat	40.0	100.0	20.0	40.0	20.0	20.0	100.0
Dhobis	68.2	50.0	68.2	59.1	13.6		100.0
Civil society groups	70.3	67.6	48.6	56.8	18.9	2.7	100.0
School children	82.8	46.6	65.5	56.9	25.9	3.4	100.0

TABLE 8.4: PROPOSED PERSONAL COMMITMENT OF DELHIITES FOR RIVER YAMUNA (In percentage)

Personal Commitments	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Would not dispose off garbage in Ganaga	50.4	59.1	44.2	37.4	43.4
Would spread awareness among people, neighbours, friends etc	34.4	22.8	19.3	30.6	27.3
Would avoid wasting water	4.8	5.5	3.6	8.2	6.3
Motivate people to participate in cleaning Yamuna	4.0	4.7	1.2	4.6	3.7
Would dispose and bury garbage in fields	3.2	6.3	1.2	2.0	2.5
Will recycle garbage at our level also	2.4	13.4	2.0	4.4	4.7
Make a group of people and make them aware not to pollute water of Yamuna	4.0	4.7	1.6	1.4	2.2
Would collectively dump the non biodegradable garbage ta one place in the colony	1.6	3.1	0	0.8	1.0
Pass the domestic water to the agricultural field	1.6	2.4	0.4	1.0	1.1
Would not use polythene bags	4.0	0.8	3.6	3.6	3.3
Will start rain water harvesting	0.8	0.8	1.2		0.5
I cant say any thing	0.8		4.4	3.6	3.0
We will not perform religious activities in Yamuna Water	0	7.9	12.0	15.3	11.7
Will contribute in monetary terms	0	1.6	5.6	2.8	3.0
Will plant more trees	0	0	0.8	0.8	0.6
Will Support No defecation next to the river side	0	0	0.8	0.2	0.3
would bury atleast the animal dead bodies and not let it go in Yamuna	0	0		1.6	0.8
Don't Know/ Can't Say	0	0	3.6	2.2	2.0



ANNEXURES



ANNEXURE 1

QUESTIONNAIRE

 Id No

S.No	Questions and Filters	Coding Categories	Skip to
SECTION I: Respondent Profile			
101	Category of respondents	Professionals.....1 Villagers.....2 Households (Housewife/ Head of the Family)3 Industries.....4 Shopkeepers/ Business Person5 Households (Unauthorized Colonies).....6 Waste Collectors and Recycling Groups.....7 Enforcers.....8 Youth.....9 Pandits and Religious Leaders10 Real Estate.....11 Mallahs.....12 Mahawath13 Dhobis.....14 Civil Society Groups15 School Children.....16	
102	Location	Urban slum.....1 Rural2	
103	Gender	Male1 Female2	
104	Age (in years)	
105	Educational level of respondent (completed)	Last class successfully completed <input type="text"/> Illiterate.....77 Literate but not attended any class66	
106	Occupation of the respondent	Student.....1 Clerical Service.....2 Executive Service.....3 Cultivator (up to 1 acre land).....4 Cultivator (> 1 acre land).....5 Wage/agricultural Labour6 Self employed/skilled worker.....7	

		Shopkeeper/ petty business.....8 Large business.....9 Housewife10 Unemployed/non-worker.....11 Others (specify) -----	
107	Monthly Household Income	Less than 35001 3501 – 5000.....2 5001 – 10000.....3 Above 10001.....4	
SECTION II: KAP Survey			
201	Which river flows in the Capital city of Delhi? jkt/kkuh fnYyh esa dkSu lh unh cgrh gS\	Ganga.....1 Yamuna.....2 Narmada.....3 No River.....4 DK.....5 NR.....6	
202	From where does the Yamuna River enter Delhi? fnYyh esa ;equk unh dk izos" k fdl txg ls gksrk gS\	Palla village1 Palam.....2 Shahdara.....3 Wazirabad.....4 DK.....5 NR.....6	
203	From where does the Yamuna River leave Delhi? ;equk unh fdl txg ls fnYyh ls ckgj gks tkrh gS\	Okhla Barrage.....1 Jaitpur2 Shahdara.....3 Wazirabad.....4 DK.....5 NR.....6	
204	Yamuna River is a tributary of? ;equk unh eq[; :i ls fdl dh lgk;d unh gS\	Ganga1 Saraswati2 Jhelam3 DK.....4 NR.....5	
205	Yamuna River joins Ganga at? ;equk unh xaxk unh ls fdl txg ij tqM+rh gS\	Gangotri.....1 Allahbad.....2 Agra.....3 DK.....4 NR.....5	
206	Yamuna River flows from? ;equk unh dgkj ls dgkj rd cgrh gS\	Gangotri to Delhi.....1 Agra to Allahbad.....2 Yamunotri to Allahbad.....3 Gangotri to Allahbad4 NR.....5	
207	Which are the two main barrages on Yamuna River in Delhi? fnYyh esa ;equk unh ij nks eq[; cjkt ¼ ikuh jksdus dk cka/k½ dkSu&dkSu ls gSa\	Okhla and Najafgarh.....1 Wazirabad and Sahibabad.....2 Okhla and Wazirabad.....3 Wazirabad and Shahdara.....4	

		NR.....5 DK.....6	
208	What are the benefits of Yamuna River for Delhi? fnYyh ds fy, ;equk unh ds vkSj D;k Qk;ns gS\		
209	What does Yamuna mean to you? fnYyh esa vkids fy, ;equk unh dk D;k vFkZ gS\	A water body.....1 Place to carry religious activity.....2 A polluted <i>Nala</i>3 Other_____	
210	Have you ever visited the Yamuna River in Delhi? D;k vki fnYyh esa dHkh ;equk unh esa x;s gks\	Yes.....1 No.....2	
211	For what purpose you visit the Yamuna River? fdl mn~ns"; Is vki ;equk unh esa x;s gks\ (Multiple Response) (MR)	A religious activity.....1 Picnic or family get together.....2 Cross while travelling within the city.....3 Educational Activity.....4 NR.....5 Other_____	
212	How frequently you visit the Yamuna River? fdrus varjky ij vki ;equk unh ij tkrs gks\		
213	Where in Delhi you visit Yamuna River? vki fnYyh esa ;equk unh ij dgk; ij tkrs gks\		
214	What is the main source of drinking water in your household? vkids ifjokj essa ihus ds ikuh dk eq[; Jksr D;k gS\		
215	Is there any occurrence of water borne disease such as dysentery, cholera, and typhoid etc in your family? D;k blds dkj.k vkids ifjokj esa ty Is lacaf/kr chekfj;k; tSIs fMisaV ^{ah}] dkWyjk] Vk;Qk;M bR;knh dh ?kVuk gqbZ gSS\ If Yes, ask continue If No go to 218	Yes.....1 No.....2 NR3	
216	Which are the diseases you or your family has suffered from? ;fn gk;] rks dkSu lh chekjh Is vki ;k vkidk ifjokj izHkkfor gqvk gS\		
217	Has any such disease been fatal/ deadly? D;k buesa Is dksbZ chekjh izk.k?kkrd@tkuysok fl) gqbZ gS\	Yes.....1 No.....2	
218	What is the difference in occurrence of these water borne disease among this generation as compared to last? fiNys le; fd rquk esa bl le; ty Is lacaf/kr chekfj;ksa dh ?kVuk esa D;k varj vk;k gS\	More.....1 Less.....2 Same.....3 NR.....4 Can't Say.....5	

219	What are the reasons of such diseases? bu chekfj;ksa dk eq[; dkj.k D;k gS\		
220	What does your doctor inform you about the reasons for these diseases? vkids fpdfRld ¼MkWDVj½ bu chekfj;ksa dk eq[; dkj.k D;k crkrs gS\		
221	Do you think there is any link between River Yamuna to water borne diseases? D;k vki lksprs gS fd ty ls lacaf/kr chekfj;ksa vkSj ;equk unh ds chp dksbZ laca/k gS\	Yes.....1 No.....2 NR3	
222	Have you taken any step to avoid water borne diseases? D;k vkius ty ls lacaf/kr chekfj;ks ls cpus ds fy, dksbZ dne mBk;k gS\ If yes ask 223, If no go to 224	Yes.....1 No.....2 NR3	
223	If yes, give details ;fn gkij] rks fooj.k crk,sa		
224	What is the current status of Yamuna River? ;equk unh fd orZeku fLFkfr D;k gS\		
225	As per your knowledge which stretch of Yamuna River in Delhi is most polluted / affected? vkidh tkudkj ds vuqlkj fnYyh esa ;equk unh dk dkSu ls Hkkx T;knk iznqf'kr gS\ Give Reasons		
226	What are the reasons for the current status of Yamuna River? ;equk unh dh orZeku fLFkfr dk D;k dkj.k gS\ (Multiple Response) (MR)	Lack of Fresh Water Flow in river1 Many drains (nallas) bringing the city's sewage and industrial waste into the river.....2 Poor Drainage and Sewage System of Delhi....3 Extraction of water (Ranney wells) from the river bed4 Land fills (solid waste dumps) in the river bed...5 Construction on the river beds.....6 Religious practices in and on river beds7 No legal or policy protection to the river.....8 Existing structures on river bed / khadar.....9 Rapid urbanization and factory development.....10 Climate change.....11 All of the above.....12 DK.....13 NR.....14	

227	Answer the following? fuEufyf[kr dk mÙkj nsa	Yes	No	Can't say	NR	
	1. Is the Yamuna water good for drinking? 1. D;k ;equk dk ikuh ihus ds fy, vPNk gS\	1	2	3	4	
	2. Is the Yamuna water good for swimming/ bathing? 2. D;k ;equk dk ikuh rSjus@ugkus ds fy, vPNk gS\	1	2	3	4	
	3. Is the vegetables grown in Yamuna river bed good for health? 3. D;k ;equk unh ds fdukjs mxkbZ tkus okyh lfCt;kj LokLF; ds fy, vPNh gS\	1	2	3	4	
	4. Is the Yamuna water good for cattle? 4. D;k ;equk dk ikuh eosf"i;ksa ds fy, vPNk gS\	1	2	3	4	
	5. Is the Yamuna water good for boating? 5. D;k ;equk dk ikuh ukSdk;u ¼cksfVax½ ds fy, vPNk gS\	1	2	3	4	
	6. Is the Yamuna water good for birds and water fauna? 6. D;k ;equk dk ikuh if{k;kas vkSj tyh; thoksa ds fy, vPNk gS\	1	2	3	4	
228	Do you dispose off the following in the Yamuna River? D;k vki ;equk unh esa bues ls dksb phtsa izokfgr djrs gS\ (Multiple Response) (MR)	Religious offering.....1 Icons or murtis.....2 Garbage.....3 Ashes/ Asthi visarjan/ birth hair.....4 Dead Bodies (Especially Children).....5 Washing of clothes.....6 None.....7 Others (Please specify).....				
229	Do you feel that all these activities pollute the River? D;k vki eglql djrs gSa fd ;s lc dk;Z unh dks iznwf'kr djrs gaS\	Yes.....1 No.....2 Can't Say.....3 NR.....4				
230	What according to you can be the alternatives for these practices? vkids fopkj ls bu dk;ksZ ds fy, nwllk csgrj fodYi D;k gks ldrk gS\					
231	Should dhobis have their washing ghats at Yamuna River? D;k ;equk unh ij /kksch ?kkV gksuk pkfg,\	Yes.....1 No.....2				
232	Do you think jhuggis / slums and other existing structures over the riverbed / flood plain should be demolished to save Yamuna River from pollution? D;k vki ksprgs gS fd ;equk unh dks iznw'k.k ls cpkus ds fy, blds rV ds vkl&ikl ds >qXxh&>ksifM+;ksa vkSj nwlls fuekZ.k dk;ksZ dks gVl nsuk pkfg,\	Yes.....1 No.....2				

233	Where the sewage and sanitation of Delhi goes? fnYyh ds ukyksa vkSj "kkSp dk ikuh dgkj tkrk gS\	Yamuna.....1 Water management system of Delhi.....2 Others_____	
234	Do you think the Yamuna River crisis is? D;k vki lksprs gS fd ;euk unh ds ladV dk dkj.k gSa\	Man Made.....1 Natural.....2 DK.....3 NR.....4 Can't Say.....5	
235	Who is responsible for the current status of the Yamuna River? ;euk unh ds orZeku fLFkfr ds fy, dkSu ftEesokj gS\ (Multiple Response) (MR)	Government.....1 Citizens of Delhi.....2 Industries and Factories.....3 Climate Change.....4 DK.....5 NR.....6	
236	What are the upcoming threats for Yamuna River? ;euk unh ds fy, vkus okyh nq%[kn~ fLFkfr D;k gS\ (Multiple Response) (MR)	Parsvanath Metro Mall.....1 Yamuna Metro Depot2 Heliport.....3 Roads and Bridges4 Common Wealth Games Village5 All of the above.....6 DK.....7 NR.....8	
237	In your opinion what are the three best possible solutions to improve the condition of Yamuna River? vkids fopkj ls ;euk unh dh fLFkfr esa iq/kkj ds fy, rhu csgrj mik; D;k gks ldrs gS\	Proper management of the sewage system.....1 Awareness of citizens about the pollution they cause.....2 Rain water harvesting.....3 Planned development on river beds.....4 Proper implementation of policies to safeguard water and Yamuna.....5 Making committees and groups to safeguard the river.....6 Legal protection to the river stretch in city.....7 All of the above.....8 Only God can help the river9 DK.....10 NR.....11 Others_____	
238	What can citizens of Delhi do to improve the current status of Yamuna River? ;euk unh ds orZeku fLFkfr esa iq/kkj ds fy, fnYyh ds ukxfjd D;k dj ldrs gS\		

239	<p>What are the three best possible ways to make people aware about the status of Yamuna River? ;equk unh ds lq/kkj ds ckjs esa yksxksa esa tkx:drk ykus ds fy, rhu lcls csgrj mik; D;k gS\</p>	<p>Audio-visual media.....1 Talks/ discussions2 SHGs and Civil Societies to be active.3 Nukar Natak/ Road shows in villages on river bed..... 4 Public meetings.....5 Awareness Campaign for industries.....6 Others_____</p>	
240	<p>Who do you think can be targeted to be a pressure group to bring in a difference in the condition of Yamuna River? vkids fopkj ls ;equk unh dh fLFkfr esa lq/kkj ykus ds fy, buesa ls fdl oxZ ds yksxksa dk ncko leqg cuk;k tkuk pkfg,\ (Single Response)</p>	<p>School children.....1 Youth.....2 Civil societies.....3 People depending on Yamuna for their livelihood (Dhobis, Mallas, Mahawat etc).....4 Religious leaders.....5 Villagers on the river bed.....6</p>	
241	<p>What message can be passed to the citizens of Delhi for improving the status of Yamuna River? ;equk unh dh fLFkfr esa lq/kkj ds fy, vki fnYyh ds yksxksa dks D;k lans”k nsuk pkgrs gS\ (Multiple Response) (MR)</p>	<p>Inform them about the health hazards caused by polluted water.....1 Pass the message that the status of Yamuna is a man made crisis.....2 NO to disposal of garbage in Yamuna.....3 Motivate citizens to avoid wasting water to reduce pollution load onto the river4 Mobilize religious leaders to persuade citizens to use alternative medium to carry their religious practices.....5 Do not encroach onto the river bed / flood plain.....6 Others_____</p>	
242	<p>What would you as a citizen of Delhi like to do for the river? fnYyh ds ,d ftEesokj ukxfjd gksusa ds ukrs vki ;equk unh dh fLFkfr esa lq/kkj ykus ds fy, D;k djuk ilan djsaxsa\</p>		

Supervisor Name & Signature:

Investigator Name & Signature:

Date of Check:.....

Date of Interview

Thank you

ANNEXURE 2

TABLES

Table 1: Category of respondents (in percentage)

Categories	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Professionals	6.4	1.6	6.8	9.5	7.5
Villagers	23.2	19.7	4.8	3.6	8.4
Households (Housewife/ Head of the Family)	16.0	24.4	10.4	17.7	16.5
Industries	0	1.6	1.6	7.0	4.1
Shopkeepers	16.0	18.1	14.9	14.5	15.2
Households (Unauthorized Colonies)	2.4	2.4	10.0	2.8	4.5
Waste Collectors and Recycling Groups	2.4	2.4	7.2	5.0	4.9
Government Bodies	5.6	3.9	1.2	5.6	4.3
Youth	8.8	13.4	12.4	9.1	10.5
Pandits and Religious Leaders	4.0	8.7	6.4	7.0	6.7
Real Estate	3.2	0	4.0	6.4	4.6
Mallahs	0	0	3.2	0	0.8
Mahawath	0	0	2.0	0	0.5
Dhobis	3.2	0	4.8	1.2	2.2
Civil Society Groups	1.6	3.1	2.8	4.8	3.7
School Children	7.2	0.8	7.2	6.0	5.8

Table 2: Location (in percentage)

Locations	Entry	Exit	Within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Urban slum	74.4	7.9	95.6	96.0	82.1
Rural	25.6	92.1	4.4	4.0	17.9

Table 3: Gender wise Respondents (in percentage)

Gender	Male	Female	Total
N	781	223	1,004
Professionals	84.0	16.0	100.0
Villagers	92.9	7.1	100.0
Households (housewife/ head of the Family)	33.1	66.9	100.0
Industries	90.2	9.8	100.0
Shopkeepers	96.1	3.9	100.0
Households (unauthorized colonies)	44.4	55.6	100.0
Waste collectors and recycling groups	87.8	12.2	100.0
Government bodies	93.0	7.0	100.0
Youth	86.7	13.3	100.0
Pandits (religious leaders)	97.0	3.0	100.0
Real estate	97.8	2.2	100.0
Mallahs	75.0	25.0	100.0
Mahawath	100.0	0	100.0
Dhobis	59.1	40.9	100.0
Civil society groups	83.8	16.2	100.0
School children	72.4	27.6	100.0

Table 4: Age (in percentage)

Age (in years)	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
12	0	0	0.4	0	0.1
13	0.8	0	0.8	0	0.3
14	0	0	1.2	0.4	0.5
15	0	0	1.2	0	0.3
16	1.6	0	1.6	2.0	1.6
17	4.0	0	0.8	2.4	1.9
18	4.8	2.4	2.8	2.2	2.7
19	2.4	0	1.6	1.4	1.4
20	1.6	2.4	3.2	1.6	2.1
21	1.6	1.6	0.4	0.8	0.9
22	2.4	4.7	2.0	1.6	2.2
23	1.6	0.8	4.0	1.8	2.2
24	1.6	1.6	3.6	1.2	1.9
25	1.6	1.6	6.0	2.0	2.9
26	0	2.4	2.0	1.4	1.5
27	0	2.4	1.2	2.2	1.7
28	1.6	2.4	2.8	3.8	3.1

29	2.4	0	0.8	1.2	1.1
30	5.6	5.5	3.2	3.0	3.7
31	0.8	0.8	0	0.6	0.5
32	4.8	5.5	4.4	3.8	4.3
33	0	0.8	1.2	0.6	0.7
34	0.8	1.6	0.4	1.8	1.3
35	12.0	8.7	10.4	6.4	8.4
36	1.6	4.7	1.2	3.0	2.6
37	0	1.6	0.4	1.0	0.8
38	2.4	2.4	2.8	5.2	3.9
39	0.8	0	0.4	2.8	1.6
40	11.2	3.9	6.0	5.2	6.0
41	0	1.6	1.2	0.6	0.8
42	3.2	4.7	2.4	3.0	3.1
43	0	1.6	1.2	2.6	1.8
44	0.8	0	0	0.4	0.3
45	8.8	5.5	6.0	7.0	6.8
46	0	0.8	0.4	1.6	1.0
47	1.6	1.6	0.8	1.4	1.3
48	0.8	3.9	1.2	3.4	2.6
49	0.8	0	0.8	0.6	0.6
50	3.2	2.4	4.4	5.6	4.6
51	0	0	0.8	0.8	0.6
52	0	2.4	0.8	2.2	1.6
53	0	2.4	0	0.8	0.7
54	0.8	2.4	0.8	0.8	1.0
55	1.6	3.1	2.0	1.8	2.0
56	0	0.8	1.2	0.8	0.8
57	0	0	0.8	1.0	0.7
58	0.8	2.4	1.2	0.6	1.0
59	0	0.8	0.8	0.2	0.4
60	4.0	1.6	1.6	0.6	1.4
61	0.8	0	0	0.2	0.2
62	0	2.4	0.4	1.0	0.9
63	0.8	0	0	0.6	0.4
64	0.8	0	0.4	0.2	0.3
65	1.6	0.8	2.0	0.2	0.9
66	0	0	0.4	0.4	0.3
68	0	0	0	0.4	0.2
69	0	0	0	0.2	0.1
70	1.6	0.8	0.8	0.8	0.9
71	0	0	0	0.2	0.1
72	0	0	0.4	0	0.1

75	0	0	0	0.4	0.2
76	0	0	0	0.2	0.1
77	0	0	0	0.2	0.1
84	0	0.8	0	0.2	0.2
85	0	0	0	0.2	0.1

Table 5: Education profile of respondents (in percentage)

Class / degree level	Entry	Exit	within 5kms	Rest of city	Total
N	125	127	249	503	1,004
Class: 1	0.8	0	0	0	0.1
Class: 3	0.8	0	0.8	0.2	0.4
Class: 4	0.8	0.8	1.2	0.2	0.6
Class: 5	6.4	4.7	8.4	3.4	5.2
Class: 6	2.4	0.8	0.8	1.8	1.5
Class: 7	3.2	6.3	5.2	3.2	4.1
Class: 8	8.8	8.7	10.0	5.0	7.2
Class: 9	0.8	3.1	5.2	1.6	2.6
Class: 10	19.2	21.3	20.5	19.7	20.0
Class: 11	0.8	0.8	1.6	3.2	2.2
Class: 12	14.4	27.6	16.1	19.3	18.9
Graduation I year	0	0	0	0.8	0.4
Graduation II year	0	0	0.4	0.8	0.5
Graduation III year	22.4	10.2	10.4	22.5	17.9
Post Graduation I year	2.4	2.4	1.2	2.2	2.0
Post Graduation II year	0	2.4	2.0	8.2	4.9
Doing PhD or equivalent degree	0	0	1.2	0.2	0.4
PhD / equivalent degree	0.8	0	0.4	0.8	0.6
Literate but not attended any class	4.8	0.8	3.6	2.4	2.8
Illiterate	11.2	10.2	10.8	4.8	7.8

Table 6: Occupation of the respondent (in percentage)

Occupation	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Student	12.0	9.4	13.3	9.5	10.8
Clerical Service	6.4	7.9	4.0	9.1	7.4
Executive Service	5.6	1.6	4.0	8.0	5.9
Cultivator (up to 1 acre land)	4.8	0.8	1.2	0.4	1.2
Cultivator (> 1 acre land)	5.6	0.8	1.2	0.4	1.3
Wage/agricultural labour	9.6	4.7	14.9	4.2	7.6
Self employed/skilled worker	14.4	16.5	16.9	16.7	16.4

Shopkeeper / petty business	17.6	13.4	18.5	15.5	16.2
Large Business	3.2	7.9	5.6	12.1	8.9
Housewife	15.2	18.1	13.3	12.1	13.5
Unemployed/non-worker	1.6	7.9	2.8	3.2	3.5
Religious person	3.2	7.9	3.6	6.0	5.3
Retired person	0.8	2.4	0.8	2.0	1.6
Social worker	0	0.8	0	0.8	0.5

Table 7: MONTHLY HOUSEHOLD INCOME (In percentage)

Category of respondents	Less than 3500	3501 - 5000	5001 - 10000	Above 10001	Total
N	161	243	298	302	1004
Professionals	2.7	8.0	24.0	65.3	100
Villagers	25.0	31.0	29.8	14.3	100
Households (housewife/ head of the Family)	16.3	21.1	35.5	27.1	100
Industries	2.4	4.9	19.5	73.2	100
Shopkeepers	7.8	26.1	34.6	31.4	100
Households (unauthorized colonies)	31.1	46.7	20.0	2.2	100
Waste collectors and recycling groups	49.0	28.6	16.3	6.1	100
Government bodies	9.3	9.3	9.3	72.1	100
Youth	9.5	23.8	38.1	28.6	100
Pandits (religious leaders)	28.4	44.8	23.9	3.0	100
Real estate	0	4.3	28.3	67.4	100
Mallahs	37.5	37.5	25.0	0	100
Mahawath	80.0	20.0	0	0	100
Dhobis	36.4	45.5	13.6	4.5	100
Civil society groups	5.4	16.2	45.9	32.4	100
School children	17.2	31.0	39.7	12.1	100

Table 8: Which river flows in the Capital city of Delhi? (in percentage)

Rivers	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Ganga	1.6	0	2.4	2.2	1.9
Yamuna	97.6	100.0	96.8	96.2	97.0
Narmada	0	0	0	0.2	0.1
No River	0	0	0.4	0.6	0.4
DK	0.8	0	0.4	0.8	0.6

Table 9: From where does the Yamuna River enter Delhi? (in percentage)

Locations	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Palla Village	92.8	1.6	20.5	40.0	36.9
Palam	0.8	1.6	6.0	3.8	3.7
Shahdara		5.5	9.2	3.2	4.6
Wazirabad	3.2	82.7	32.5	33.0	35.5
DK	3.2	7.9	31.7	19.9	19.2
NR		0.8		0.2	0.2

Table 10: From where does the Yamuna River Leave Delhi? (in percentage)

Locations	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Okhla Barrage	53.6	15.0	34.1	42.1	38.1
Jaitpur	20.8	76.4	21.7	28.6	32.0
Shahdra	1.6		4.0	3.6	3.0
Wazirabad	15.2	2.4	10.8	7.4	8.6
DK	8.8	6.3	29.3	17.7	18.0
NR	0	0	0	0.6	0.3

Table 11: Yamuna River is a tributary of? (in percentage)

Tributary	Entry	Exit	Within 5kms	Rest of city	Total
	100.0	100.0	100.0	100.0	100.0
Ganga	64.8	80.3	50.2	59.4	60.5
Saraswati	9.6	0.8	5.2	2.8	4.0
Jhelam	0	0	0.4	0.8	0.5
Independent river	8.8	15.7	30.9	30.6	26.1
DK	16.8	3.1	13.3	6.4	9.0

Table 12: Yamuna River joins Ganga at? (in percentage)

Cities	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Gangotri	5.6	6.3	7.2	5.8	6.2
Allahbad	84.0	90.6	82.3	90.3	87.5
Agra	1.6	0	1.6	1.0	1.1
DK	8.8	3.1	8.0	2.8	4.9
NR	0	0	0.8	0.2	0.3

Table 13: Yamuna River flows from? (in percentage)

River flow	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Gangotri to Delhi	2.4	1.6	10.0	8.0	7.0
Agra to Allahbad	5.6	3.1	2.4	2.4	2.9
Yamunotri to Allahbad	58.4	66.9	49.8	58.1	57.2
Gangotri to Allahbad	24.0	23.6	16.5	23.5	21.8
NR	9.6	4.7	21.3	8.2	11.2

Table 14: Which are the two main barrages at Yamuna River in Delhi? (in percentage)

Barrages	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Okhla and Najafgarh	0	21.3	11.2	8.0	9.5
Wazirabad and Sahibabad	33.6	5.5	14.9	11.7	14.4
Okhla and Wazirabad	41.6	74.8	36.5	45.9	46.7
Wazirabad and Shahdara	10.4	8.7	30.5	26.2	23.1
NR	1.6	0	1.6	3.0	2.1
DK	12.8	1.6	14.5	9.9	10.4

Table 15: what are the benefits of Yamuna for Delhi ? (in percentage)

Benefits	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Irrigation	64.0	68.5	36.1	49.9	50.6
Power production (Electricity)	2.4	22.0	11.6	19.5	15.7
Drinking water	36.8	28.3	58.6	53.3	49.4
Increase ground water level	3.2	2.4	2.4	2.2	2.4
For religious activity	29.6	8.7	10.8	11.7	13.3
Helps in balancing environment	2.4	3.1	8.0	2.0	3.7
Get sand from river Yamuna	17.6	3.1	0	6.8	6.0
Swimming / bathing	6.4	0	0.8	1.6	1.8
Soil become productive after decreasing in the level of floo	0.8	0	0.8	0.2	0.4
Get fish in the river Yamuna	12.0	6.3	0.8	3.0	4.0
Place to carry religious activity / tourist place	3.2	0	0	0	0.4
Some people depend on Yamuna for their livelihood	2.4	0	0	0	0.3
They clean / wash animals	1.6	12.6	0.4	3.4	3.6
They drained sewage water in the river Yamuna	2.4	0.8	0.8	6.0	3.6

We go there to wash clothes	1.6	0.8	0.4	2.8	1.8
Here you can find vegetables	0.8	0	0	0.4	0.3
DK/CS	0	0.8	2.0	1.8	1.5

Table 16: What does Yamuna mean to you? (in percentage)

Reponses	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
A water body	40.8	55.1	45.4	48.3	47.5
Place to carry religious activity	47.2	30.7	32.9	29.0	32.5
A polluted Nala	11.2	15.7	24.1	23.5	21.1
Historical / Cultural place	3.2	0	0	0	0.4

Table 17: Have you ever visited the Yamuna River in Delhi? (in percentage)

Visit	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	96.8	97.6	98.8	98.4	98.2
No	3.2	2.4	1.2	1.6	1.8

Table 18: For what purpose you visit the Yamuna River? (in percentage)

Purpose	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
A religious activity	76.0	79.5	52.2	55.3	60.2
Picnic or family get together	17.6	23.6	7.6	6.2	10.2
Cross while travelling within the city	37.6	81.9	42.2	74.8	62.9
Educational Activity	0.8	0.8	1.6	2.2	1.7
NR	0.8		0.4	0	0.2
For fishing purpose	4.0	0.8	3.6	0	1.5
For agricultural activity	17.6	0	5.6	0.2	3.7
To get sand from river Yamuna	4.8	0	0.4	0	0.7
Bathing	1.6	0	0.4	1.6	1.1
For bathing or cleaning/ drinking water of animals	0.8	0	1.2	0	0.4
Cleaning clothes	2.4	0	2.8	0.4	1.2
To get important material from garbage thrown in and around	0.8	0	1.6	0.8	0.9
Playing ground	0	0	0	0.2	0.1

Table 19: How frequently you visit the Yamuna River? (in percentage)

Frequency of visiting Yamuna	Entry	Exit	Within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Daily	27.2	15.0	43.8	18.5	25.4
Two-three times in a day	9.6	4.7	3.2	2.8	4.0
Three to six times in a week	15.2	24.4	12.9	19.1	17.7
Monthly	26.4	37.0	26.5	34.6	31.9
Yearly	5.6	18.1	11.6	22.7	17.2
During religious occasion like Amawasiya, Purnima, Yamuna Sn	7.2	0.8	0.8	0	1.2
Rarely	8.8	0	1.2	2.4	2.6

Table 20: Where in Delhi you visit Yamuna River? (in percentage)

Location	Entry	Exit	Within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Palla village	58.4	0.8	0.8	0	7.6
Jhangola village	11.2	0	9.6	2.6	5.1
Tiggipur	8.8	0.8	1.2	1.0	2.0
Kalindi Kunj	0.8	25.2	2.4	1.6	4.7
Okhla Barrage	1.6	14.2	4.0	2.6	4.3
Lohia Pul	0	4.7	2.4	2.2	2.3
Sahadhara	0	2.4	0.4	5.2	3.0
ITO	6.4	3.1	28.5	31.0	23.8
Laxmi Nagar	0	0.8	3.2	6.8	4.3
Wazirabad	1.6	0	8.8	19.9	12.4
Nizamuddin	0	0	12.0	3.0	4.5
Sarai Kale Khan	0	0	4.0	0.8	1.4
Sunderpur	7.2	0	0	0	0.9
Aksardham Mandir	4.0	0	0.8	0.8	1.1
Ghanta Ghar	0	0	0	1.0	0.5
Kalindi Kunj (Same as 4)	0	33.1	0	0.4	4.4
Mithapur	0	2.4	0	0	0.3
Jaitpur Bridge	0	15.7	0	0.2	2.1
Rajghat	0	0.8	3.2	8.5	5.2
Yamuna Bazar	0	0.8	2.4	8.5	5.0
Gajipur Mandi	0	0	0.4	0.2	0.2
Majnu Ka Tila	0	0	3.2	0.4	1.0
Chandgiram Akhadi	0	0	3.6	0.2	1.0
Soniya Vihar	0	0	8.8	0.8	2.6
Shastri Park	0	0	4.8	0.2	1.3
Geeta Colony	0	0	0	0.6	0.3
Shanti Bann	0	0	0	1.8	0.9

Gandhi Nagar	0	0	0	1.8	0.9
Nigambodh Ghat	0	0	0	1.6	0.8
Gokulpuri	0	0	0	0.2	0.1

Table 21: What is the main source of drinking water in Delhi ? (in percentage)

Main source of drinking water	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yamuna water	10.4	10.2	8.0	5.4	7.3
Supply water/ MCD water	68.8	44.1	41.8	71.6	60.4
Tap water	3.2	0.8	2.8	2.8	2.6
Handpump / Boring water	15.2	37.8	32.9	9.9	19.8
Tanker	4.0	10.2	7.6	2.8	5.1
Bisleri	0	1.6	0.4	2.0	1.3
Ganga water	0	0	8.4	7.8	6.0

Table 22: Is there any occurrence of water borne disease such as dysentery, cholera, and typhoid etc in your family? (in percentage)

Occurrence of water borne disease	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	28.8	25.2	25.3	23.5	24.8
No	70.4	74.8	74.7	76.3	75.0
NR	0.8	0	0	0.2	0.2

Table 23: Which are the diseases you and your family has suffered from? (in percentage)

Disease	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Typhoid	36.1	59.4	38.1	33.9	38.6
Malaria	11.1	9.4	19.0	22.9	18.5
Cholera	16.7	15.6	12.7	12.7	13.7
Jaundice	2.8	6.3	7.9	12.7	9.2
Itching	2.8	0	0	0	0.4
Diarrhea	2.8	0	6.3	0.8	2.4
Dysentery	25.0	3.1	4.8	19.5	14.5
Skin disease	2.8	0	9.5	0.8	3.2
Stone	2.8	3.1	0	0	0.8
Dengue	0	3.1	3.2	3.4	2.8
Acidity / Gastric	0	0	3.2	0	0.8

Table 24: Has any such disease been fatal/deadly? (in percentage)

Fatal	Entry	Exit	Within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	33.3	25.0	34.9	18.6	25.7
No	66.7	75.0	65.1	81.4	74.3

Table 25: What is the difference in occurrence of these water borne disease among this generation as compared to last? (in percentage)

Occurrence	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
More	44.8	29.9	37.3	49.9	43.6
Less	32.0	26.0	39.0	24.9	29.4
Same	14.4	40.2	17.3	19.9	21.1
NR			0.8	0.2	0.3
Can't Say	8.8	3.9	5.6	5.2	5.6

Table 26: What are the reasons of such diseases? (in percentage)

Reasons	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Polluted water	68.0	96.9	63.9	70.2	71.7
Causes environmental pollution	12.0	3.9	26.5	21.7	19.4
Infected food items	6.4	3.1	6.0	7.2	6.3
Irresponsibility by the people	2.4	0	0	0	0.3
Unhygienic food and drink	2.4	0	0.4	1.0	0.9
Poor cleaning	2.4	0	3.2	3.0	2.6
Because of mosquitoes and flies	0.8	0.8	2.4	1.2	1.4
Because of hard water	0	0	0.4	0.2	0.2
Factories & industries	0	0		0.2	0.1
DK/CS	12.8	2.4	1.6	2.8	3.7

Table 27: What does your doctor inform you about the reasons for these diseases? (in percentage)

Reasons by doctor	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
From polluted water / allergy	69.6	89.8	67.9	69.0	71.4
From unhygienic food	7.2	5.5	21.3	16.5	15.1
Because of mosquitoes and flies	4.0	3.9	13.7	9.7	9.3
Not yet visited doctor	5.6	0	0	1.2	1.3
Poor cleaning	8.0	3.1	6.0	11.7	8.8
6		0.8	0.8	0	0.3
DK/CS	9.6	3.1	2.0	4.2	4.2

Table 28: Do you think is any link between River Yamuna to water borne diseases? (in percentage)

Linkages	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	50.4	75.6	72.7	76.9	72.4
No	46.4	23.6	25.7	21.7	26.0
NR	3.2	0.8	1.6	1.4	1.6

Table 29: Have you taken any step to avoid water borne diseases? (in percentage)

Preventive measures taken	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	36.8	66.9	42.2	64.2	55.7
No	61.6	33.1	57.0	35.8	43.9
NR	1.6		0.8	0	0.4

Table 30: If yes, give details

Preventive measures	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Boiled water	30.4	63.5	34.3	28.5	35.1
Water purifier / Ro system / aqua guard	23.9	24.7	27.6	33.1	30.1
Water filter	32.6	9.4	15.2	29.4	24.0
Using chlorine	8.7	1.2	12.4	5.0	6.1
Proper arrangement of sewage / fill up the pit	4.3	3.5	8.6	0.3	2.7
Apply on your body after bath	2.2	0	1.0	0.6	0.7
We use mosquito net / All out (mosquito repellent)	0	10.6	1.0	3.7	3.9
We clean water cooler everyday or add kerosene oil	0	1.2	0	0.3	0.4
Cover food and water	0	0	1.9	3.1	2.1
We clean surrounding clean	0	0	2.9	2.5	2.0
Mineral bottle/ water bottle/ bisleri water	0	0	0	1.2	0.7

Table 31: What is the current status of Yamuna River? (in percentage)

Current status	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Decrease in the flow of water	24.0	7.1	10.8	4.4	8.8
Dryness	8.0	3.9	4.8	4.6	5.0
Yamuna converted into Nala	14.4	30.7	30.1	24.7	25.5

The quality of water is worst / polluted	29.6	60.6	51.0	65.6	56.9
Near to the Palla village surrounding water is good	21.6	0.8	0.4	1.2	3.5
Future of Yamuna river is in danger	2.4	2.4	3.2	2.0	2.4
DK/CS	0.8		0.4	0	0.2

Table 32: As per your knowledge which stretch of Yamuna River in Delhi is most polluted / affected? (in percentage)

Most polluted stretch of Yamuna	Entry	Exit	within 5kms	Rest of city	Total
<i>N</i>	100.0	100.0	100.0	100.0	100.0
From bypass	1.6	1.6	0.4	0.2	0.6
Wazirabad	49.6	5.5	28.9	26.0	27.1
ITO	16.8	2.4	30.1	29.4	24.6
Okla	17.6	46.5	19.3	13.9	19.8
Azadpur	4.8	0.8	0.4	0.2	0.9
Nizamuddin	0	1.6	6.8	4.6	4.2
Sahadhora	3.2	0.8	1.6	11.7	6.8
Kalindi Kunj	0	4.7	1.6	1.6	1.8
Near Jaitpur	0.8	0	0	0.6	0.4
Nigambodh Ghat	0	0	1.6	0.6	0.7
Sarai Kale Khan	0	0.8	3.6	1.0	1.5
Bypass to Yamuna	3.2	0	1.2	0	0.7
Transport Nagar	1.6	0	0	0	0.2
Majnu Ka Tila	0.8	0	0	0	0.1
Sunderpur	0.8	0.8	2.8	0.2	1.0
Badarpur	0	0	0	0.2	0.1
Jaitpur	0	21.3	0	0.6	3.0
Yamuna Bazar	0	17.3	0	0.2	2.3
Changiram akhara	0	0.8	2.8	8.3	5.0
Gandhi Nagar	0	0	0.8	0	0.2
Shastri Nagar	0	0	0	0.4	0.2
Rajghat	0	0	0.8	0.2	0.3
Kondli	0	0	0	1.4	0.7
Timarpur	0.8	0	0	0.4	0.3
Akshardham Mandir	0	0	0.4	0	0.1
Sarita Vihar	0	0	0	0.2	0.1
Sonia Vihar	0	0	0	0.4	0.2
Geeta Colony	0	0	0	0.2	0.1
DK/CS	6.4	1.6	3.2	1.6	2.6

Table: 32 B: Reasons for the polluted stretch (in percentage)

Reasons	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Due to garbage	14.5	33.6	20.3	23.0	22.7
Industrial Waste	26.5	13.6	7.1	13.7	13.6
City sewage mixed in the water of Yamuna River	57.3	44.8	70.1	53.7	57.1
Because of Mandi (vegetable market)	4.3	8.8	0.8	1.0	2.4
Because of throwing of flowers in the river	0	1.6	1.7	2.4	1.8
Dead Bodies	0	0.8	0.8	2.4	1.5
Ashers/ Asthi Visarjan	0	0	0	1.8	0.9
Because of slum areas	0	0	0	4.2	2.1
Washing of clothes (Dhobis)	0	0	0	1.0	0.5

Table 33: What are the reasons for the current status of Yamuna River? (in percentage)

Reasons	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Lack of Fresh Water Flow in river	77.6	68.5	46.2	54.1	56.9
Many drains (nallas) bringing the city's sewage and industries	77.6	81.1	71.5	79.5	77.5
Poor Drainage and Sewage System of Delhi	60.8	49.6	63.9	60.2	59.9
Extraction of water (Ranney wells) from the river bed	21.6	28.3	20.9	22.1	22.5
Land fills (solid waste dumps) in the river bed	8.0	20.5	26.9	16.9	18.7
Construction on the river beds	12.8	23.6	12.0	15.3	15.2
Religious practices in and on river beds	32.0	43.3	19.7	23.1	25.9
No legal or policy protection to the river	15.2	11.0	23.7	23.3	20.8
Existing structures on river bed / khadar	4.8	10.2	4.8	3.6	4.9
Rapid urbanization and factory development	21.6	37.0	8.8	16.3	17.7
Climate change	1.6	0.8	0	0.6	0.6
All of the above	4.8	1.6	0	3.0	2.3

Table 34: Is the Yamuna water good for drinking? (in percentage)

Good drinking water	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	19.2	0	2.8	2.8	4.5
No	78.4	99.2	96.8	96.8	94.8
Can't Say	2.4	0.8	0.4	0.4	0.7

Table 35: Is the Yamuna water good for swimming/ bathing? (in percentage)

Good for swimming/ bathing	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	68.8	0.8	12.9	10.7	17.2
No	30.4	99.2	84.7	87.1	81.0
Can't Say	0.8	0	2.4	2.2	1.8

Table 36: Is the vegetables grown in Yamuna river bed good for health? (in percentage)

Good for vegetables	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	87.2	7.1	48.2	35.0	41.2
No	11.2	92.1	43.0	59.8	53.7
Can't Say	1.6	0.8	8.8	5.2	5.1

Table 37: Is the Yamuna water good for cattle? (in percentage)

Good for cattle	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	76.8	3.1	15.7	19.7	23.7
No	22.4	95.3	82.7	76.3	73.6
Can't Say	0.8	1.6	1.6	4.0	2.7

Table 38: Is the Yamuna water good for boating? (in percentage)

Good for boating	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	64.0	30.7	28.9	18.5	28.3
No	34.4	67.7	67.5	75.1	67.2
Can't Say	1.6	1.6	3.6	6.2	4.4
NR	0	0	0	0.2	0.1

Table 39: Is the Yamuna water good for birds and water fauna? (in percentage)

Good for fauna	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	76.0	7.1	22.9	19.7	25.9
No	21.6	89.8	73.5	75.7	70.2
Can't Say	2.4	3.1	3.6	4.2	3.7
NR	0	0	0	0.4	0.2

Table 40: Do you dispose off the following in the Yamuna River? (in percentage)

Disposal	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Religious offering	88.8	85.8	65.9	73.8	75.2
Icons or murtis	74.4	63.8	33.7	35.8	43.6
Garbage	22.4	35.4	20.9	20.1	22.5
Ashes/ Asthi visarjan/ birth hair	56.0	57.5	27.3	37.6	39.8
Dead Bodies (Especially Children)	29.6	34.6	16.9	17.7	21.1
Washing of clothes	3.2	10.2	13.3	3.2	6.6
None	7.2	5.5	16.1	20.3	15.7

Table 41: Do you feel that all these activities pollute the River? (in percentage)

Contribute to pollution	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	63.2	93.7	89.2	82.7	83.3
No	28.0	4.7	10.4	14.3	13.8
Can't Say	8.8	1.6	0.4	2.8	2.8
NR	0	0	0	0.2	0.1

Table 42: What according to you can be the alternatives for these practices? (in percentage)

Alternatives	Entry	Exit	Within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
A pond / water body near to Yamuna	5.6	9.4	3.2	5.2	5.3
Construction of a electric crematorium	14.4	3.9	4.0	5.8	6.2
Construction of a canal for religious activities / other act	6.4	5.5	6.0	9.9	8.0
Digging a pit and depose garbage in it	13.6	37.8	21.3	22.7	23.1
Recycling of religious offerings like flowers, murtis	2.4	6.3	2.0	5.2	4.2
Construction of a place by Govt. for this type of activities	13.6	17.3	29.3	23.3	22.8
No any other alternative option	28.8	0.8	1.2	5.4	6.7
This is our tradition	10.4		0.8	4.2	3.6

After proper Treatment of domestic water, let it flow into t	0	4.7	3.6	3.6	3.3
Garbage should be recycled properly and use it	0	2.4	4.8	3.4	3.2
Don't throw waste material in the river	0.8	18.1	10.0	4.4	7.1
Don't drain off the industrial waste water into the river	0	3.1	3.6	1.2	1.9
Don't dispose religious offering in the river instead of it k	0	0	2.4	5.0	3.1
People who dump / dispose waste in the river should be punis	0	0	0.4	2.4	1.3
DK/CS	7.2	1.6	9.6	5.2	6.1

Table 43: Should dhobis have their washing ghats at Yamuna River? (in percentage)

Dhobi ghats	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	10.4	7.9	8.8	7.8	8.4
No	89.6	92.1	91.2	92.2	91.6

Table 44: Do you think jhuggis / slums and other existing structures over the riverbed / flood plain should be demolished to save Yamuna River from pollution? (in percentage)

Jhuggis / slums	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yes	82.4	81.9	62.2	81.7	77.0
No	17.6	18.1	37.8	18.3	23.0

Table 45: Where the sewage and sanitation of Delhi goes? (in percentage)

Sewage and sanitation	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Yamuna	89.6	97.6	92.8	92.6	92.9
Water management system of Delhi	0.8	2.4	7.2	7.0	5.7
Jood (A pond Like Structure in the village)	9.6	0	0	0	1.2
DK/CS	0	0	0	0.4	0.2

Table 46: Do you think the Yamuna River crisis is? (in percentage)

Yamuna crises	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Man Made	96.0	85.0	96.0	96.6	94.9
Natural	4.8	15.0	3.2	3.0	4.8
DK	0	0	0.4	0.2	0.2
NR	0.8	0	0.4	0.2	0.3
Can't Say	1.6	0	0.4	0.2	0.4

Table 47: Who is responsible for the current status of the Yamuna River? (in percentage)

Responsible	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Government	75.2	89.8	83.5	88.7	85.9
Citizens of Delhi	71.2	92.9	68.7	78.9	77.2
Industries and Factories	68.0	73.2	35.7	64.0	58.7
Climate Change	11.2	0.8	3.2	8.0	6.3
DK	0	0	0	0.2	0.1
NR	0	0.8	0	0	0.1

Table 48: What are the upcoming threats for Yamuna River? (in percentage)

Upcoming threats to Yamuna	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Parsvanath Metro Mall	24.0	61.4	20.5	41.7	36.8
Yamuna Metro Depot	33.6	64.6	23.7	38.0	37.3
Heliport	15.2	49.6	13.3	27.4	25.2
Roads and Bridges	10.4	27.6	43.4	24.5	27.8
Common Wealth Games Village	32.8	32.3	43.4	48.5	43.2
All of the above	24.8	9.4	8.0	13.1	12.8
DK	12.0	3.9	12.9	9.5	10.0
NR	4.8	0	3.6	1.8	2.4

Table 49: In your opinion what are the three best possible solutions to improve the condition of Yamuna River? (in percentage)

Best possible solutions	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Proper management of the sewage system	84.0	85.0	75.5	84.9	82.5
Awareness of citizens about the pollution they cause	55.2	64.6	55.8	58.4	58.2
Rain water harvesting	41.6	26.8	27.3	20.9	25.8
Planned development on river beds	23.2	40.2	26.9	27.6	28.5
Proper implementation of policies to safeguard water and Yam	43.2	39.4	54.2	49.7	48.7
Making committees and groups to safeguard the river	24.8	26.0	30.1	26.4	27.1
Legal protection to the river stretch in city	13.6	13.4	24.1	22.1	20.4
Only God can help the river	2.4	2.4	1.2	3.4	2.6
DK	0	0	0	0.2	0.1
With due time cleaning the riverbank is necessary	0.8	0	0	0	0.1
To dispose murtis pond should be dig besides the river	0.8	0	0	0	0.1
From Haryana the Yamuna water should be joined up	0	0	0	0.2	0.1

Table 50: What can citizens of Delhi do to improve the current status of Yamuna River? (in percentage)

Activities	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
No/ less disposal of garbage	48.8	54.3	47.8	47.1	48.4
Avoid use of polythene bags	16.8	7.9	6.8	4.4	7.0
Spread awareness among the people	17.6	12.6	9.6	14.5	13.4
Disposal of garbage in proper field	9.6	22.0	5.2	5.4	8.0
No chemical disposal in Yamuna	1.6	2.4	0.4	3.4	2.3

People of Delhi cannot do anything for this	4.0	0	1.6	3.6	2.7
People of delhi should use less water/ save water	7.2	3.1	6.4	7.8	6.8
Murti/ ikon should not be dispose in the river	2.4	6.3	7.2	10.3	8.1
Pass the domestic water to the agricultural field	7.2	2.4	3.6	3.2	3.7
People should participate to clean Yamuna	2.4	3.1	10.0	11.9	9.2
Make committees / group to safe guard the river	0	3.1	3.6	2.2	2.4
Rehabilitate encroacher staying near by Yamuna	0	2.4	0.4	1.0	0.9
Dead bodies should be dispose in the river	0.8	0.8	0.4	5.2	2.9
People should not defecate in open air	0	0	0	1.4	0.7
DK'CS	2.4	0	1.2	2.8	2.0

Table 51: What are the three best possible ways to make people aware about the status of Yamuna River? (in percentage)

Tools	Entry	Exit	Within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Audio-visual media	80.0	82.7	79.9	85.3	83.0
Talks/ discussions	42.4	43.3	30.1	34.0	35.3
SHGs and Civil Societies to be active	27.2	52.8	54.2	47.9	47.5
Nukar Natak/ Road shows in villages on river bed	48.8	39.4	34.1	38.6	38.8
Public meetings	72.8	49.6	60.6	56.3	58.6
Awareness Campaign for industries	15.2	18.1	28.1	29.4	25.9
Municipal / ward members should visit door to door to conduc	0.8	0.8	0	0	0.2
In every village there should be one person, elected by the	1.6	0	0	0.2	0.3
In every village and society there should be one committee w	1.6	0	0	0	0.2

Table 52: Who do you think can be targeted to be a pressure group to bring in a difference in the condition of Yamuna River? (in percentage)

Pressure group	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
School children	20.0	10.2	13.3	9.9	12.1
Youth	47.2	54.3	29.3	47.9	44.0
Civil societies	12.0	25.2	31.3	25.0	25.0
People depending on Yamuna for their livelihood (Dhobis, Mal	9.6		11.6	7.6	7.9
Religious leaders	3.2	10.2	10.8	7.0	7.9
Villagers on the river bed	8.0		3.6	2.6	3.2

Table 51: What message can be passed to the citizens of Delhi for improving the status of Yamuna River? (in percentage)

Messages	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
Inform them about the health hazards caused by polluted wate	84.0	90.6	69.5	76.7	77.6
Pass the message that the status of Yamuna is a man made cri	52.0	76.4	56.2	59.0	59.7
NO to disposal of garbage in Yamuna	70.4	53.5	67.1	67.8	66.1
Motivate citizens to avoid wasting water to reduce pollution	45.6	62.2	43.0	44.5	46.5
Mobilize religious leaders to persuade citizens to use alter	17.6	34.6	24.9	24.5	25.0
Do not encroach onto the river bed / flood plain	1.6	3.1	4.0	3.2	3.2

Table 52: What would you as a citizen of Delhi like to do for the river? (in percentage)

Activities	Entry	Exit	within 5kms	Rest of city	Total
N	100.0	100.0	100.0	100.0	100.0
No disposal of garbage	50.4	59.1	44.2	37.4	43.4
Awareness among the people	34.4	22.8	19.3	30.6	27.3
Avoid wasting of water	4.8	5.5	3.6	8.2	6.3
People's participation in cleaning Yamuna	4.0	4.7	1.2	4.6	3.7
Disposal garbage in filed	3.2	6.3	1.2	2.0	2.5
Garbage should be properly recycled	2.4	13.4	2.0	4.4	4.7
Make a group of people and make them aware not to pollute su	4.0	4.7	1.6	1.4	2.2
Garbage should be dump in the dumping place and fertilizer s	1.6	3.1		0.8	1.0
Pass the domestic water to the agricultural field	1.6	2.4	0.4	1.0	1.1
No to Polythene bags	4.0	0.8	3.6	3.6	3.3
Rain water harvesting	0.8	0.8	1.2		0.5
I cant say any thing	0.8	0	4.4	3.6	3.0
We will not perform religious activities	0	7.9	12.0	15.3	11.7
To clean Yamuna, money should be contributed	0	1.6	5.6	2.8	3.0
Trees should be planted near to the Yamuna river	0	0	0.8	0.8	0.6
No defeacation next to the river side	0	0	0.8	0.2	0.3
Animals dead bodies should be crimated under the soil	0	0	0	1.6	0.8
DK/CS	0	0	3.6	2.2	2.0