

Cultural-Religious Aspects of Ganga Basin

GRBMP: Ganga River Basin Management Plan

by

Indian Institutes of Technology



**IIT
Bombay**



**IIT
Delhi**



**IIT
Guwahati**



**IIT
Kanpur**



**IIT
Kharagpur**



**IIT
Madras**



**IIT
Roorkee**

Preface

In exercise of the powers conferred by sub-sections (1) and (3) of Section 3 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government has constituted National Ganga River Basin Authority (NGRBA) as a planning, financing, monitoring and coordinating authority for strengthening the collective efforts of the Central and State Government for effective abatement of pollution and conservation of the river Ganga. One of the important functions of the NGRBA is to prepare and implement a Ganga River Basin Management Plan (GRBMP).

A Consortium of 7 Indian Institute of Technology (IIT) has been given the responsibility of preparing Ganga River Basin Management Plan (GRBMP) by the Ministry of Environment and Forests (MoEF), GOI, New Delhi. Memorandum of Agreement (MoA) has been signed between 7 IITs (Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras and Roorkee) and MoEF for this purpose on July 6, 2010.

This report is one of the many reports prepared by IITs to describe the strategy, information, methodology, analysis and suggestions and recommendations in developing Ganga River Basin Management Plan (GRBMP). The overall Frame Work for documentation of GRBMP and Indexing of Reports is presented on the inside cover page.

There are two aspects to the development of GRBMP. Dedicated people spent hours discussing concerns, issues and potential solutions to problems. This dedication leads to the preparation of reports that hope to articulate the outcome of the dialog in a way that is useful. Many people contributed to the preparation of this report directly or indirectly. This report is therefore truly a collective effort that reflects the cooperation of many, particularly those who are members of the IIT Team. Lists of persons who have contributed directly and those who have taken lead in preparing this report is given on the reverse side.

Dr Vinod Tare
Professor and Coordinator
Development of GRBMP
IIT Kanpur

The Team

1. Bhagirath Behera, IIT Kharagpur
2. D K Nauriyal, IIT Roorkee
3. N C Nayak, IIT Kharagpur
4. Pulak Mishra, IIT Kharagpur
5. Pushpa L Trivedi, IIT Bombay
6. Rajat Agrawal, IIT Roorkee
7. S P Singh, IIT Roorkee
8. Seema Sharma, IIT Delhi
9. V B Upadhyay, IIT Delhi
10. Vinay Sharma, IIT Roorkee
11. Vinod Tare, IIT Kanpur

bhagirath@hss.iitkgp.ernet.in
dknarfhs@iitr.ernet.in
ncnayak@hss.iitkgp.ernet.in
pmishra@hss.iitkgp.ernet.in
trivedi@hss.iitb.ac.in
rajatfdm@iitr.ernet.in
singhfhs@iitr.ernet.in
seemash@dms.iitd.ac.in
upadhyay@hss.iitd.ac.in
vinayfdm@iitr.ernet.in
vinod@iitk.ac.in

Contents

	Page
1 Introduction	8
2 Objectives	9
3 Research and Methodology	9
4 Pilgrimage Places	10
5 Important Rituals on the river bank of the Ganga	16
6 Issues and concerns	19
7 Options for workable solutions	22
References	27

Acknowledgement

Authors of this report are grateful to Professor S P Singh (Group Leader SEC, GRBMP) and Professor D K Nauriyal from Department of Humanities, IIT Roorkee for their guidance, support and encouragement. Their thought provoking discussions and commitment helped to complete the report successfully. Authors are also grateful to Professor I M Mishra, Principal Investigator of project at IIT Roorkee, Department of Chemical Engineering for his constant support.

We express our sincere appreciation to our research scholars, namely, Ms. Kumkum Bharati, Ms Anita Sengar, Ms Ritika Mahajan, Mr Devendra Kumar, Mr Rupesh Kumar who helped us in different ways to complete this report.

Mr Deep Pathak, MBA student of 2010-2012 batch, Mr Sidharth Gupta, B Tech student of 2008-2012 batch also contributed in data collection, analysis and report generation.

1. Introduction

River Ganga, the holiest of all rivers, carries profound significance for the entire Indian society and the diaspora – for a vast majority this emerges from religious and spiritual faith and mythology while for others this could be related to socio-cultural and economic opportunities that it offers. This diverse relationship of the river with the people and the culture of India needs no formal introduction as this is deeply rooted in the psyche of every Indian since childhood through folklores, scriptural references and a host of customs and traditions which in turn mobilise round the year a large number of pilgrims to its banks along its entire stretch all the way from its origin in the Himalayas to its mouth on the Bay of Bengal. Driven by faith, tens of millions of pilgrims take holy dip in the Ganga every year and some or the other part of their lives is associated through the rituals they perform. An inventory of types of congregations, rituals and routine activities of the population staying along this sacred river suggests strong interrelationship and emotional dependence of the people. With almost 37% of Indian population living in its basin, and the rest being directly or indirectly associated with it, River Ganga is evidently an inseparable facet of the Indian society. Ganga water, known as '*Gangajal*' is considered sacred and typically found in a majority of Hindu households across the length and breadth of the country eminently qualifies for inclusion under the Geographical Indication registry.

Box1: Significance of Gangajal in a Hindu Household

Gangajal - the sacred water of River Ganga is stocked in almost all Hindu households and its use is considered auspicious – purifying all individuals and places wherever it is sprinkled and driving away evil spirits. With this belief Gangajal is used in all types of yajna/homam to bring prosperity such as Gangapujan, Laghurudra, Maharudra, Atirudra, Durgapuja, Laxchandi Yagna, Navchandi Yagna, Gayatri Yagna, Bhoomi Pujan, Shilanyas,, Murti Pratishtha, Vastu Shanti, Grah Shanti, Naxtra Shanti, Kalsarp Shanti, Shradh Karma, Narayanbali, 'abhishek' of Shivlingam, Vivah Samskara (marriage ceremony), etc. The holy water virtually represents the life-line for the Hindu society that is used all the way till the end of life – drops of water into the mouth of a dying person are believed to secure instant salvation.

Interestingly, Gangajal, with hitherto undefined chemical/biological properties is known to have indefinite shelf life and which add to its aura of sacredness. Gangajal is considered to possess more medicinal elements than water of any other rivers and because of its supernatural effects it is used in ayurvedic and naturopathic applications for curing a range of ailments. This mystical property is attributed to the vast reservoir of minerals and herbs available in the catchments of upper Himalayan reaches of the river.

Given this potent combination of spiritual significance and medicinal properties, almost all pilgrims to its holy ghats of Rishikesh and Haridwar collect Gangajal as an inalienable ritual and carry it to their homes. It is not surprising that many small establishments and micro-enterprises take it upon themselves to market the holy water in sealed metallic vessels or plastic containers.

Evidently the spiritual and religious significance of River Ganga is greater than any other river on the planet. Recognising its profound significance for the entire Indian society, the Government of India, albeit after almost 50 year of independence, declared it as the

National River on November 4, 2008. Accordingly, under the Constitution of India this special status calls for taking special measures for the protection of River Ganga on the part of the central, state and local governments as well as the civil society at large.

2. Objectives

The main objective of this report is to develop a clear understanding of the relationship between River Ganga and the Indian society in general and the people living along its banks in particular; assess significance of the river in their lives, attempt correlation of possible impacts of diverse rituals from water quality point of view and ultimately contribute in framing the overall strategy for restoration of the river to its old glory. In this context, the key aspects that have been investigated as part of the study are as follows:

- (a) Historical account of cultural-religious practices in the Ganga basin.
- (b) Changes that have taken place in socio-cultural milieu of Ganga over a period of time.
- (c) Role of various stakeholders comprising, among others, government agencies, academia and intelligentsia, civil society, religious institutions, etc.
- (d) Various problems and issues with regard to, among others, impact on the river water quality.
- (e) Perceived solutions.

3. Research and Methodology

At the outset of the study it was noted that structured data especially explaining the impact and association of socio-cultural practices on the river ecology or water quality was not available¹. In order to develop the data and improve understanding of the relationship between diverse socio-cultural practices and the River Ganga detailed interviews were conducted with key persons who have been instrumental or associated with Ganga related socio-cultural practices and environment issues in its basin. In addition, about 10 focused group discussions (FGDs) involving different interest groups (civil society, local administrators, academicians, priest community, residents along the banks, etc.) were conducted. Some of the FGDs were aimed to corroborate findings of the interviews with individual respondents while the rest were aimed at identifying issues and understand perspectives of stakeholders and possible solutions with respect to River Ganga and its basin in general.

A detailed historic account of various cultural and religious practices was developed through literature survey – primarily Hindu scriptures, and primary data collected as part of

¹Most of the efforts of getting suitable data with regards to the influx of people and the related aspects were not structurally fruitful.

engagement with the community/stakeholders. Further, to understand various issues related to cultural and religious aspects of River Ganga, members of the team visited few important pilgrimage centres on the river, among others, Gangotri which is located in a very fragile ecological setting; and participated in important festivals at Haridwar as well as in the Mahakumbh at Allahabad which coincidentally occurred during the term of this study in March 2013.

4. Pilgrimage Places

The Ganga Basin as a whole is of immense religious and cultural importance to followers of, among others, Hindu and Sikh religions. There are several sites venerated by Hindus which are located along the main stream of the River Ganga as well as away from the river. In the upper reach of the Ganga basin some of these sites are Gaumukh, Gangotri, Uttarkashi, and Tehri in the Bhagirathi basin; and Badrinath, Vishnuprayag, Nandaprayag, Karnaprayag, Rudraprayag, Ukhimath and Srinagar in the Alaknanda basin. Given the difficult Himalayan topography, harsh winters and hazard of monsoons, these locations are accessed only during summers when millions of pilgrims visit seeking salvation. Further down when the river emerges out of the hills and descends to the plains the important centres of pilgrimage are Rishikesh and Haridwar which are typically visited round the year on various occasions by millions as well.

Besides being centres of pilgrimage, these locations/towns help in driving the economy of the hill State of Uttarakhand and generate livelihood for a very large number of people. Evidently this is one of the major areas of revenue generation for the relatively new state of Uttarakhand and hence impetus on promotion of tourism notwithstanding the ecological, geographical and infrastructural limitations. Some of the important locations are briefly described in the paragraphs that follow.

Important locations in the Hills

This section lists out a set of important pilgrimage centres in the upper reaches of the Ganga basin and briefly describes religious significance of each location.

Gomukh

On the spiritual platform, according to the Hindu scriptures² while Ganga is believed to originate from the toe of Lord Krishna and thereafter from the jata (hair locks) of Lord Shiva on the material platform physically it emerges from a glacier called 'Gangotri'. The origin of the river is known as Gomukh (literally meaning 'mouth of cow') which is situated at a height of around 3,500 m above mean sea level. According to the legend, in historic times, the origin appeared like mouth of a cow – again a sacred animal in Hindu religion. Given this

² Among others, the four *Vedas*, 18 *Puranas*, *Upnishads*, *Smriti*, *Samhita*, *Bhagwatam*, *Mahabharat*, *Bhagvad Gita*, etc.

background, for time immemorial Gomukh has been considered an important place of pilgrimage in Hindu religion and the journey to this place, which is among the most difficult tracks, is considered a form of penance.

Char Dham

The Bhagirathi basin has two of the venerated sites of Hinduism, namely Gaumukh and Gangotri. Similarly, the Alaknanda basin has two of the most venerated shrines namely Badrinath and Kedarnath. Badrinath, Kedarnath, Gangotri along with Yamunotri in the Yamuna basin (the origin of another sacred river - River Yamuna) constitute the 'Char Dham' – four important seats of spiritual power.

Gangotri

Gangotri is situated 19 km from Gomukh at a height of 3100 m above mean sea level. It is considered the origin of the River Ganga. The river is called Bhagirathi at the source and acquires the name 'Ganga' from Devprayag onwards where it meets another river called Alaknanda. For a large number of pilgrims and tourists alike, the town of Gangotri serves as the starting point for the popular trekking routes viz., Gangotri-Gomukh-Tapovan and Gangotri-Kedartal.

Badrinath

On pan India basis, Badrinath is one of the four most important pilgrimage centres associated with *Lord Vishnu* – the sustainer. It is the seat of the deity, more popularly known as 'Vishal Badri' and which represents final destination for any seeker of salvation. Evidently every Hindu and particularly every Vaishnavite desires to visit at least once in his/her lifetime. The temple housing the deity is surrounded by Nara and Narayana mountains (dual form of Lord Vishnu) on either side, and river Alakananda (literally meaning 'the most beautiful') flows in the front, its sound symbolising pious rhyme Har-Har.

Other Pilgrimage locations on way to Badrinath

On way to the town of Badrinath, there are number of locations which are associated with some legend and carry religious significance, though at a smaller level. These locations are viz., Pipalkote, Pandukeshwar and Hanuman Chatti.

- **Pipalkote** is known for its proximity to *Garud Ganga* where, as per legend, *Garuda* (the mount of Lord Vishnu) performed penance to atone killings of snakes during his lifetime. There are 2 small temples dedicated to Lord Vishnu along with *Mahalakshmi* and a separate temple for *Garudazhwar*. It is believed that the pebbles collected from this river ward off snakes and other evil spirits and facilitate pregnant women with safe delivery. As per another legend it is believed that *Nagadosham* (curse of snake) gets wiped off if one consumes sacred waters of the river from this location.

- **Pandukeshwar** is believed to be the birth place of the *Pandavas* and accordingly it derives its name. During winters when the town of Badrinath becomes inaccessible this places becomes the abode of *Lord Badrinarayanan*.
- **Hanuman Chatti** on the otherhand is a small settlement where a temple dedicated to Lord Hanuman exists which represents a stopover on the pilgrimage circuit.

Kedarnath

Kedarnath is the seat of one of the holiest Hindu temples dedicated to Lord Shiva. According to a legend the *Pandavas* came to this place in penance in search of Lord Shiva seeking blessings and to be absolved of the sins of having killed their kith and kin in the battle of the Mahabharata.

The town of Kedarnath is located at an altitude of about 3,584m above mean sea level near the origin of river Mandakini and involves one of the most difficult and precarious treks over 14 km. Being one of the main stops on the *Char Dham yatra*, notwithstanding the challenges of the long trek, a large number of pilgrims visit the temple every summer.

Yamunotri

Yamunotri is the source of the Yamuna River and the seat of Goddess Yamuna in Hinduism. It is situated at an altitude of 3,293 metres above mean sea level in the Garhwal Himalayas. Again this being one of the main stops on the *Char Dham yatra*, a large number of pilgrims come here during summers.

Panch- Prayag

'Prayag' in *Sanskrit* means 'confluence' of rivers. In the hilly region of the Ganga basin there are five main confluences which eventually lead to the formation of the main river and which is then know as Ganga in the plains. The locations associated with these confluences derive religious significance in one or the other form and represent important stopover on the pilgrimage circuit. Each of the five 'prayag' is listed with a brief narrative as follows:

- **Vishnuprayag** starting from the head reaches represents the first confluence when River Alaknanda, which originates in the eastern slopes of glacier fields of Chaukhamba is joined by the River Saraswathi at Village Mana near the international border with China. The combined stream known as Alaknanda then flows in front of the Badrinath temple.
- **Nandaprayag** is the second prayag in the cascade sequence of the confluences where Nandakini River joins the main Alaknanda River. According to one legend, a noble King

Nanda performed *yagnya* (fire-sacrifice) and sought blessings of God and hence, the confluence is named after him.

- **Karnaprayag** is the location where River Alaknanda is joined by the Pindar River. The epic Mahabharata legend narrates that Karna – the legendary son of Sun performed penance here and earned the protective gear of *Kavacha* (armour) and *Kundala* (ear rings) from his father which bestowed him invincibility.
- **Rudraprayag** is the point of confluence of River Alaknanda with River Mandakini. The confluence derives its name after Lord Shiva. According to a popular legend, Lord Shiva performed here *Tandava* - a vigorous dance that is the source of the cycle of creation, preservation and dissolution; *rudra* representing its violent form connoting destruction. According to another legend Lord Shiva is also said to have played his favourite musical instrument *Rudra Veena* here whereby enticing Lord Vishnu and converting him to water.
- **Devprayag** is the last of the five prayags where River Alaknanda joins River Bhagirathi - the main stream which is then known as River Ganga. From religious and cultural point of views, this confluence carries same significance as that of the famous *Triveni Sangam* at Allahabad-confluence of River Ganga with River Yamuna and the mythological River Saraswati.

Important Pilgrimage Centres in the Plains

In the plains River Ganga carries undiminished religious significance, is easily accessible and hence attracts large number of pilgrims round the year. There are particular locations on this stretch which have evolved over the generations and where the crowds swell to very large numbers on special occasions. Some of these locations starting from the upper reaches are described in the paragraphs that follow.

Rishikesh

Rishikesh is one of the names of Lord Krishna/ Lord Vishnu that means 'Lord of the senses'. The place gets its name after Lord Vishnu who appeared to *Raibhya Rishi* (as a result of his penance) as Lord Rishiksha. In the sacred text of *Bhagwad Gita*, Arujna addresses Lord Krishna as 'Rishiksha' for mastery over the senses. According to one legend Lord Rama performed penance here for killing Ravana - the demon king of Lanka. Two of the landmark bridges across the river here derive their names from Lord Rama and his younger brother viz., Ram Jhula and Lakshman Jhula respectively.

Being in the foot hills of the Himalayas, the place has its own charms and significance. It represents 'the gateway to the Himalayas' as all journeys to the pilgrimage centres described in the preceding section commence from here. There are number of temples and spiritual centres (*math* and *ashram*) along both the banks of the river where devotees can enhance spiritual quotient and aspire towards salvation. Year round religious activities attract large number of Hindu pilgrims of all denominations to this holy town which also holds the distinction of being perhaps the only urban centre in the country where slaughtering of animals or sale and consumption of meat/ meat products is prohibited by law. The Ganga *Arati* – prayer offerings to the sacred river, which is performed at dusk at the Triveni Ghat is very popular and attracts large number of devotees, pilgrims and tourists alike.

Haridwar

Haridwar, which is about 250 km from Gomukh and about 20 odd km from Rishikesh is regarded as one of the seven holiest places in the world by the followers of Hindu religion. The word 'Haridwar' literally translates into 'doors to the kingdom of God'.

According to the Hindu scriptures, subsequent to the '*samudra manthan*' – the fight between the demigods and the demons, Haridwar along with Allahabad, Ujjain and Nasik happened to be one of four locations where *Amrit* - the elixir of immortality was spilled accidentally. In recognition of this celestial 'accident' all the four cities carry high significance on the pan Indian pilgrimage circuit. Accordingly, among others, this is celebrated under special planetary configuration in the form of very large congregation of humanity at each of these four places once every 12 years and which is known as 'Maha Kumbh' or 'Kumbha Mela'. During the Kumbha Mela millions of pilgrims, devotees, *sanyasis* and tourists congregate at Haridwar to perform ceremonial bathing on the banks of the River Ganga with the belief to wash away their sins/ *karmic* debt and attain *Moksha*/ salvation³.

There are references to '*Gangadwar*' (Haridwar) and *Kankhal* (a well-known habitation next to Haridwar) in the sacred Hindu text *Mahabharata* (*Vana Parva: Tirtha-yatra Parva: Section XC*) which describe the attribute due to which the place is considered sacred.

On the bank of the river at Haridwar is a place which is believed to bear footprints of Lord Vishnu. It is said that as a mark of everlasting reverence to the Lord, River Ganga touches this spot perennially. It is believed that the *Brhama Kund* – the pool of water at the *Har-ki-pairi* is the spot where the drops of *amrit*, as referred above fell. It is further believed that the sacred *ghat* (constructed river front) *Har-ki-pairi* was constructed by King Vikramaditya (1st century BC). Devout Hindus aspire to take holy dip in the river at this place with the

³ Hinduism believes in eternal nature of the soul and its reincarnation in a cycle of birth and death according to ones *karma*.

belief to wash away sins/ *karmic* debt accruing from misdeeds in this and previous lives and attain *Moksha*/ salvation.

To the right of *Har-ki-pairi* is the *Kushavarta-ghat*, for which it is believed that *pindadana* performed (oblations for the departed ancestors) at this spot ensures eternal peace to soul. Based on this belief Bhishma - the legendry son of Ganga is said to have performed the ritual for his father Santanu at this very spot and accordingly it is also known as *Santanu-tirtha*. Likewise it is believed that immersion of *asthi* (ashes) performed at these locations in particular ensures peaceful passage for the departed soul and stay in the heavens as long as the ashes remain under the water of the Ganga.

For the followers of Sikh religion Haridwar carries special significance as the founder Guru Nanak visited here on the day of *Baisakhi* in 1504 and took holy dip in Ganga at '*Kushwan Ghat*'. Subsequently the third Sikh Guru, Sri Amar Das also visited Haridwar twenty two times during his lifetime.

Evidently, among other locations on the bank of the Ganga, Haridwar has profound significance particularly for the Hindus which translates into a strong belief and a set of customs and rituals that are woven around it.

Allahabad

Allahabad is another ancient and important holy place along the Ganga way down in the plains which finds several references in the Vedic scriptures. Its original name Prayag – meaning 'place of offerings', is derived from its being located at the confluence of three holy rivers, viz., Ganga, Yamuna and the mythological Sarasvati. The point of confluence is known as Sangam which accords a special religious significance and hence taking a holy dip is considered auspicious among the Hindus. As mentioned earlier, it is also one of the four sacred locations where Mahakumbh is held once every 12 years, and besides Haridwar it also hosts an Ardh-Kumbh once every six years.

Varanasi

Varanasi is perhaps the most venerated, mystical and popular of all the cities located on the banks of river Ganga. It is considered as the cultural capital of India and attracts thousands of Hindu pilgrims and visitors from all parts of the world. Varanasi has been a traditional centre of learning of *Sanskrit*, religion, philosophy and astrology. According to scriptures it is believed to be the eternal seat of Lord Shiva and therefore every Hindu aspiring for salvation longs to spend his/her last days here and be cremated on the bank of Ganga. Varanasi is famous for its *ghats* – the stone lined stepped banks of the river and buildings with classical architecture, one of which represents *Mahashmshana* or the 'great cremation ground' where the legendry King Harishchandra is said to have worked as a menial labour.

Given this belief, it is not surprising to find a constant influx of dead bodies from the hinterland and round the clock cremation being performed on this *ghat*.

Gaya

In the mid-reach of Ganga, the town of Gaya in Bihar is another place of religious and spiritual significance where thousands of devout Hindus congregate to its revered *ghats*. According to scriptures, it is believed that oblations for ones ancestors when offered at this place facilitate overcoming their sins and their transmigration to higher planets.

Ganga Sagar

Ganga Sagar on the east coast of India in the state of West Bengal is the mouth of the River Ganga where its journey ultimately comes to an end as it merges into the Bay of Bengal. Given its geographical significance, Ganga Sagar is the final destination in the chain of holy places which are located on the bank of the river. On the occasion of *Makar Sankranti* i.e., 14th January when the Sun moves from the southern hemisphere to the northern hemisphere, Ganga Sagar hosts a large fair when couple of lakhs of pilgrims from across the country congregate.

5. Important Rituals on the River Banks of the Ganga

Hindu religion, among others, is recognised by a very wide range of rituals associated with every occasion – be it prayers to particular Gods or demigods, festivals, special events in family or congregations to celebrate specific community level functions, etc. Water, considered as one of the five constituting elements of the human body (*panch-mahabhut*⁴), plays a central role, and what could be more auspicious than the proximity to the holy *Gangajal*.

The rituals along the course of Ganga are varied, distinct and draw tens of millions of people every year. The historical origin of these rituals dates back thousands of years and the faith and belief are rooted deep into *vedic* scriptures which in turn accord special status to the River Ganga – as a mother and thereby as a sacred entity. These rituals and festivals have evolved over time and have impacted Ganga and her devotees in numerous ways and have also been impacted in their turn. In this context, this section attempts to capture in brief the beliefs and the significance of some of the main *samskaras*, rituals and festivals typically performed / celebrated along the bank of River Ganga.

⁴Earth, water, fire, air and ether.

Mundan Samskara

Mundan or Chudakaran Samskara⁵ is the eighth of the sixteen *samskaras* that a Hindu is supposed to undergo in his/her lifetime. It is the first hair cut for a child and involves tonsuring before the first or after the third birth anniversary and is based on the belief that hair from the birth represent link to undesirable traits of the previous life which need to be severed. It is a typical ritualistic ceremony performed on holy places such as Rishikesh, Haridwar, etc. Besides tonsuring for the young ones, typically grown ups also resort to shaving of their heads on various occasions while visiting holy places. The hair thus removed is symbolically offered to the river – in this case River Ganga.

Antim Samskara/ Antyeshti

Antim Samskara or cremation is the last of the sixteen *samskaras* that (the soul of) a Hindu is supposed to undergo/embrace upon death. It is a ritualistic process where in the mortal remains of an individual are consigned to the flames. Significance of cremation is far beyond the mere disposal of a dead body in hygienic method – the main objective is to sever the link between the gross body and the astral/ subtle body and thereby facilitate onward journey/ transmigration of the departed soul to heavenly planets. This is based on the belief – as stated in Bhagvad Gita, that the soul is indestructible which continues its journey in a cycle of birth and death according to accumulated *karma*, and therefore cremation (as compared to burial or disintegration in the open) is considered to be the most effective form for this disengagement. Typically river banks are preferred places for cremation and accordingly Kankhal in Haridwar and Manikarnika Ghat in Varanasi are two such well known locations (with several legends woven around them) in the country. Cremation is followed by immersion/disposal of the ashes and the remains, if any into the river.

Immersion of Ashes

According to Hindu scriptures Ganga descended on the Earth in response to the penance performed by *Bhagirath* (hence the name *Bhagirathi* for the river in its early stage) who persevered to secure salvation for 60,000 of his ancestors. Therefore since aeons Hindu society has come to believe that a soul would get *moksha* /salvation (freedom from the cycle of birth and death) if the ashes are immersed into Ganga and it will continue to reside in heavenly planets as long as the ashes remain submerged under its holy waters. This custom is known as '*asthi visarjan*' and Hindu families from across the length and breadth of India as well as among the diaspora aspire to perform it ideally in Haridwar or any other location along its banks.

⁵ The *Samskāra* are a series of sacraments, sacrifices and rituals that serve as rites of passage and mark the various stages of the human life and to signify entry to a particular *varnashram*. Basically all these rituals are of the nature of purification and they are believed to remove sins (*pāpa*) and/or bestow good qualities (*gunas*). These *samskaras* or rituals along with special occasions/ festivals are conducted year round on the banks of the Ganga.

Jal Samadhi

For a *sadhu* or a *sanyasi* (a renunciate) it is believed that his/her soul is already liberated (*mukta atma*) and hence unlike a householder (*sansarik/ baddha atma*) upon death the body need not be cremated, instead it can be released into a water body or even buried. The custom of releasing the dead body into a river is known as *Jal Samadhi* where the intention is to serve some purpose even after death whereby lesser species could feed on the body.

Tarpan

The word '*tarpan*' is formed from the root word '*trup*' which means satisfying others. *Tarpan* represents symbolic offerings of water and flowers to the God, the Sun, sages, and ancestors seeking their satisfaction and in return blessings for the individual. Typically this is performed on the banks of holy rivers and other water bodies at pilgrimage centres.

Snan

A dip in the Ganga anywhere along its course, but especially at the holy places listed earlier is believed to offer riddance from sins (*karmic debt*) of this and the previous lives. This belief alone attracts a large number of pilgrims and tourists alike to the banks of the Ganga round the year. Significance of a holy dip is believed to be far more on special occasions e.g., *Makar Sankranti*, solar eclipse, *Mahakumbh*, etc. and accordingly footfalls during such occasions is many fold as compared to normal days.

Aarti

Aarti is a routine ritual which is performed daily or several times in a day and which represents paying obeisance to the deity. It can be an elaborate ritualistic process accompanied by offerings of sacred fire, water, flowers, incense and of course blowing of conch, bells, cymbals and drum beats, etc. At many places along Ganga e.g., Rishikesh, Haridwar and Varanasi an elaborate *Aarti* is performed every evening which has also emerged as a major draw for the pilgrims, tourists and *sadhus* and sages alike. Besides the head priests, individuals also perform the same ritual and release the little lamp and floral offerings into the river.

Shraadh

According to Hindu scriptures it is believed that depending on its *karma* a soul after departure from its human form could wander into different realms and could suffer. Based on this belief, the religious/ social custom of *shraadh* has evolved for expressing one's respectful obeisance to ancestors, satiate their desires, if any and alleviate sufferings of the soul(s). This is performed during special days in a year and could involve a range of rituals at home as well as on the bank of the river or other water bodies.

Other special rituals that are performed round the year on the *ghats* of Ganga especially in Haridwar comprise prayers to save oneself from *Pitra Dosh*, *Kalsarp Yoga*, *Shani Dosh*, *Manglik Dosh*, *Balarisht/Alpayu Yoga*, *Mrityu Yoga*, etc.

6. Issues and Concerns

The engagements of investigation team with a very wide range of respondents, stakeholders and the discussions in focused groups brought out a number of interesting socio-cultural aspects related to River Ganga and the Indian society in general. This section attempts to capture key issues and messages and narrows down on some of the possible elements of the evolving overall strategy to address the problem of the National River.

Association of People with River Ganga

Association of Ganga with socio-cultural aspect is well established and there cannot be any debate on this subject. Even communities that do not perform any rituals at its banks consider River Ganga as sacred. Every festival, every ritual, every aspect of a Hindu's life is associated with Ganga who, it is believed, as the all encompassing mother descended to the earth for purifying and nourishing the lives of the people. The sanctity of the socio-cultural activities is as old as the river itself.

However, during the discussions with various stakeholders, particularly the pilgrims, intriguingly it was found that in some sections of the society the well established sanctity of the river as the giver and the mother may be diminishing. This could be attributed to ignorance about the scriptural injunctions and general drifting of the society away from the age old customs, traditions and beliefs.

In this context, the need for soul searching i.e., to analyze whether River Ganga should be considered as a religious and/or spiritual entity or merely as another geographical and hydrological feature of the Indian subcontinent or even as a commodity is well recognised. This earnestness emerges from the fact that the perception which will develop will then eventually define the approach to address the complex issues affecting the ecosystem of River Ganga.

Changing Perspective of Pilgrims

A sea change appears to have come in the perception of the pilgrims as regards importance to performance of particular rituals vis-a-vis the wellbeing of the river. It is noted that pilgrims and visitors alike are very particular and highly sensitive about the recognised auspicious days/dates and the time for congregation on the banks of the river to take the customary holy dip, but are not at all concerned or virtually insensitive about the possible adverse impacts of their activities on the health of the river – either from aesthetics or water quality point of views. This incongruity in perception could be attributed to general

lack of respect for the spiritual entity or the belief that the river has capacity to absorb almost everything thrown into it - be it immersion of ashes, disposal of hair, offerings of flowers, or clothes, photos, *kanwars*, etc. as discussed in previous section. On the material dimension this uncaring behaviour could be attributed to the perceived vast difference in the flow of the river and insignificant scale of an individual's transgression or purely lack of awareness and concern.

Although people performing such acts can see that their 'offerings' do not blend with the river water and instead constitute a form of pollution (physical/aesthetic, if not chemical or biological) but because their thoughts are fixed on the ongoing rituals, perhaps they do not perceive their act as transgression. Secondly, this could also be attributed to typical 'mob behaviour', as there are people of all backgrounds with significant disparity in level of education, awareness, concern and commitment towards natural heritage and environment. Evidently the underlying belief that the river descended on the earth to wash away sins of its people and absorb everything is overwhelming and resistance to think otherwise is very high. In this context, it is interesting to note the findings of a survey wherein almost 60% of respondents representing *ashrams* and other religious institutions do not perceive performance of rituals as polluting activity and do not approve any modifications in established practices. On the other hand, among the tourists apparently over two third perceive rituals on river banks as polluting activities and over three fourth may be willing to adopt modifications/ alternative practices, if introduced through appropriate mechanisms/ channels.

Nature of rituals and increasing popularity

Rituals have more or less remained the same but over the years their popularity and participation of devotees has increased due to, among others, increasing population, enhanced accessibility through improved affordability and means of transportation and larger financial allocation from governments, civil society and religious institutions. It is not that religious orientation of people has increased but also it has become a trend and the positive expectations of people have been increasing. Secondly, for a large part of the Indian society tourism/vacation has always been construed as a visit to a centre of pilgrimage. For example it is estimated that footfalls during *Kanwar Yatra*, *Kartik Poornima*, *Kumbh Mela* and *Amavasya Snan* have gone up by over 15 times during last two decades; and during 2006 to 2010 pilgrim influx has increased three times. A decade ago *Kanwar Yatra* (performed during the *Shravan mas* – July/August every year) to Haridwar would get about 2-3 lakh pilgrims every year but now it has crossed a million mark. Allahabad *Kumbh* in 2013 reported the biggest congregation of humans on the earth perhaps since the beginning of inception of human life on the planet i.e. more than 30 million people on the day of *Shahi Snan* - one of the main holy baths and the total number of visitors during the entire Mela (stretching almost over 2 months) was reported to be around 70 million. Haridwar *Kumbh* in 2011, reported around 50-55 million visitors, while some other agencies

reported around 70 million visitors. A major credit goes to the large organizations and ashrams who have increased the popularity of the religious places manifold, so much so that Haridwar and Rishikesh alone have received an estimated 250 million people during last decade. Some of the major *ashrams* attracting large number of visitors are Patanjali Yogpeeth, Premnagar Ashram, Shantikunj, Jairam Ashram, at Haridwar and Geeta Ashram, Shivanand Ashram and Parmarth Niketan at Rishikesh.

Intriguingly, the local administration agencies count only those persons as tourists/pilgrims who stay overnight but do not take into account the day visitors. The latter category typically coming from nearby areas can be very large which adds to the pressure on the infrastructure and administrative system. Thus the above numbers could be an underestimate and may not enable realistic assessment of the problem⁶.

Challenge of the Carrying Capacity

The exponential rise in the number of pilgrims has not been accompanied with commensurate increase in infrastructure, especially for access to the river front, basic services and the capacity of the host urban local bodies. Evidently this leads to a massive congregation in small areas around locations of religious/ historical significance which invariably poses significant risks to human life (due to stampede and other similar problems) and is a huge challenge for local administration and security agencies. It is not surprising that the latter two agencies have expressed concerns on this parameters. Interestingly rest of the stakeholders comprising, among others, priests, local traders, petty merchants, hotel and restaurant operators, etc. are happy with increasing business and rising incomes. Apparently there is a consensus on the need to regulate footfalls through strong administrative and legal measures, as simplistic measures through awareness, deterrence, etc. will not dissuade rising multitude of pilgrims who are driven purely by faith.

Unregulated growth of hotels, Ashrams and Dharmshalas

Evidently this large growth in the number of pilgrims has led to unregulated growth of hotels, *ashrams* and *dharamshalas* which offer places for overnight stay to the weary tourists/ pilgrims/ visitors. There are issues related to town planning, land use, safety, access, supporting infrastructure, etc. which have not received the required level of attention, particularly in the fragile setting of the hilly region beyond Rishikesh.

⁶No detailed and structured data is available with the local administration authorities in relation to any event.

Sanitation and Public Health

Needless to mention that the challenges of sanitation and solid waste management remain unaddressed due to, among others, limited resources, infrastructure and capacity on the part of the concerned urban local bodies/ *panchayats*. Under such a situation it would not be surprising if the general level of environmental sanitation and public health are severely compromised as the holy river doubles up as the ultimate receptacle of sewage and municipal solid waste. This deficit in infrastructure represents **breach of faith** as millions of pilgrims on the downstream at Rishikesh and Haridwar collect supposedly holy *Gangajal* which is seemingly laden with sewage and solid waste.

Other issues

Increased construction activity in the region has led to high demand for building materials and this has led to unregulated and illegal mining of sand and boulders on the banks of the river. This has in turn made adverse impact on the river morphology and its interaction with the flora, fauna and the habitation along the banks.

Another issue that emerged during the discussions pertains to the inadvertent damage inflicted to the *Bhoj Patra* trees (*Betula utilis*/ Himalayan birch) by the pilgrims going to Gangotri and Goumukh.

7.Options for Workable Solutions

Given the disparate perceptions among diverse stakeholders and complexity of issues - particularly related to the behaviour of millions of pilgrims thronging its banks, it is rather challenging to identify and evolve a set of agreeable and workable solutions in the realms of culture and sociology in the short- to medium-terms. Nonetheless, the investigators have attempted to explore a set of options that could be considered in the larger frame of the strategy that is to be proposed for improving water quality of the River Ganga and attaining the objectives of *aviral* and *nirmal dhara*. These are broadly classified in social, institutional and technical/infrastructural categories and summarised in the paragraphs that follow.

Social measures

A host of issues that emerge out the analysis pertain to socio-cultural aspects/ practices and hence the solutions as perceived or proposed by the stakeholders are presented first hereunder.

Awareness Generation

There is a strong felt need to undertake a sustained and widespread campaign through all media and channels to sensitise the society at large on the spiritual and religious significance and the natural heritage of the River Ganga. The campaign should attempt to

revive the spirit of the Mother or Goddess Ganga and hence the feeling of reverence towards the sacred river.

Pilgrims visiting the river banks and other shrines in the hills also need to be sensitised through appropriate means as regards the code of conduct (spiritual and otherwise) while in a fragile or sensitive environmental setting. This also applies to non-pilgrims who are visiting as tourists, trekkers, for river rafting or other entertainment activities.

Gangajal Mahima

Profound significance of *Gangajal* is well recognised and the same should be leveraged to convey range of messages for preserving the sanctity of the river. Likewise this very belief should be used to motivate devotees to perform some of the rituals at homes with the *Gangajal* rather than undertaking arduous journey all the way to the banks of the river. However, the latter is easier said than done.

Community Participation

There is a need to identify and organise diverse stakeholders, take into account their interests and accordingly ensure their participation in addressing the issues. Secondly, there is a need to mobilise participation of the communities (comprising all age groups and affiliations) living along or in the vicinity of River Ganga. To this effect a well defined, coordinated and sustained programme under an appropriate institutional mechanism needs to be implemented whereby effective results in terms of change in perception and behaviour can be derived.

It is also advised to explore assistance at the local level from opinion leaders, religious leaders, voluntary organisations, etc. Further, the practice of *Kar Sewa* as followed by the Sikh community needs to be promoted at local level with the help of NGOs and CBOs.

Community Organisation

In order to enhance community participation on a sustained basis, there is a need to organise the community (evidently at mass level) along certain common threads e.g., school clubs, youth clubs, units of National Social Service in undergraduate colleges, village committees, trader communities, priest community, *ashrams*, *Ganga Sevak Sabha*, etc. In order to create such wide range of 'community based organisations' centred on the theme of Ganga, evidently there is a need to build capacity (in the form of, among others, trained, experienced and dedicated social workers) at the local and state government levels.

Innovation in Social Practices

Some social organisations such as Shanti Kunj in the Narmada basin have demonstrated positive results in modifying behaviour of communities and pilgrims through innovative

approaches which represent alternatives to the traditional rituals. Such initiatives need to be documented, disseminated/ replicated and popularised in the Ganga basin and other river basins in the country as well.

Institutional Measures

A set of institutional measures that emerge from the discussions with stakeholders are summarised hereunder. These pertain to local bodies as well as state and central agencies as regards introducing new approaches, regulations and systems.

Capacity Building of Local Bodies

Given the large influx of pilgrims and tourists alike, evidently the urban local bodies of Rishkesh and Haridwar and those of the smaller towns and villages in the hills are not prepared to respond to the challenges. There is a need to build capacity of the local bodies on diverse aspects for, among others, planning, monitoring, supervision, community engagement, mobilisation, facilitation, awareness creation; creation of requisite infrastructure and extending services, etc.

Realistic Assessment of Tourist Inflows

In order to assess realistic pressure on the infrastructure, the local agencies need to also account for the day visitors and accordingly change the method of enumeration. In addition to considering those staying overnight at a particular station, they also need to take into account total entries and exits from a town.

Entry Regulations

Recognising the threat to public safety and security due to unusually high density of floating population on certain important occasions on selected *ghats* of River Ganga, there is strong need to adopt unconventional institutional measures (administration and security) to regulate entry of pilgrims. These measures must take into account, among others, the carrying capacity of the town/ location and the administrative capacity of the local bodies. To dissuade people on special occasions, entry fee/ taxes, higher vehicle parking charges, etc. need to be explored.

Regulation on Construction Activity

There is a strong need to control construction activity on or near the banks of the river. Similarly there is need to ensure appropriate environmental safeguards at the time of planning and implementation of such works so that sewage and solid waste are not disposed of into the river.

It is also imperative to carry out monitoring of diverse sources of water pollution from urban, commercial and industrial activities and take appropriate and timely preventive

measures. To this effect inspectors from state and local agencies need to be deployed for taking timely action.

Regulation on Sand Mining

Increased construction activity has created a local industry of mining of sand and boulders from the bed and banks of the river which is having adverse impacts on the local ecosystem. There is a need to appraise the issues objectively and scientifically and adopt appropriate safeguards as well as offer alternate sources of building materials. Local agencies/ micro-entrepreneurs involved in sand mining should be properly rehabilitated by offering alternate livelihood opportunities.

Regulation of Other Activities

It is observed that a number of camping sites on the bank of the river have developed which cater to a different group i.e., adventure tourists. Likewise it is noted that a large number of vehicles which drive into the towns of Haridwar and Rishikesh are often washed on the river banks. Although small, these activities lead to localised pollution of the river and need to be suitably controlled.

Infrastructure and Services

Deficit in terms of infrastructure and services is one of the major bottlenecks affecting local environment, sanitation and the river water quality. Some of the proposed solutions are listed hereunder.

Diffusing Pressure on the Ghats

Given the challenge of large number of visitors on selected *ghats* it is recommended to develop more *ghats* and facilities to perform diverse rituals. Alternative to '*Har-ki-pairi*' and other historical *ghats* will help in diffusing the pressure on the infrastructure and prevent chances of any mishaps. All agencies need to coordinate to plan, develop and then motivate pilgrims to use them.

Public Conveniences

There is an urgent need to construct high quality public conveniences at suitable/convenient locations to cater to the rising number of visitors of all background. It is also of paramount importance to ensure high level of maintenance and services so that the facilities are put to intended use over the designed life period. Lack of public conveniences is resulting in indiscriminate and open defecation which affects sanctity of the locations as well as public health.

Sewerage and Solid Waste Management

There are two aspects to this problem of sewage and solid waste disposal – one on the *ghats* and other across the town/city. As regards the activities on the *ghats*, it is recommended to lay, where feasible, appropriate sewer lines to collect sewage and wastewaters from hotels, restaurants, other small establishments and divert them to the citywide system. Likewise for the solid waste, it is imperative to install adequate number of collection bins on the *ghats* and engage service providers (through the local bodies or CBOs) for regular timely removal of the waste. Evidently, pilgrims also need to be informed of the available facilities and services and to be motivated to use them.

Although it does not necessarily fall within the mandate of this study, but strengthening of the city/town wide infrastructure/ system for sewage and solid waste collection, treatment and disposal is imperative. Needless to say that the capacity of the concerned local bodies also should be augmented if commensurate benefits need to be derived on a sustained basis. In this respect it is appropriate to recommend promotion of the practice of home composting in front/back yard of houses, wherever feasible, so that load on the municipal system and the receiving environment is minimised.

Afforestation and Watershed Management

Mining and deforestation in the catchment area of the river are known to be causing significant impacts on the local environment as well as on the river. In order to prevent or mitigate such impacts there is strong demand for, among others, initiating afforestation and watershed management activities which will in turn generate jobs for the unskilled and improve local economy.

Regulation of Flows Downstream of Hydel Projects

In the upper reaches of the river system its continuity is known to have been broken due to construction of a number of hydel projects. A section of the respondents have expressed concerns on this issue and have proposed release of water in dry weather to ensure certain minimum flow whereby people living in those stretches can continue to relate with the river and perform their traditional customs and rituals

Conclusions

Ganga is a source of emotional, physical, spiritual and economic prosperity. *Aviral* and *nirmal* Ganga can only help in achieving all these aspirations of the people who come to its banks or who live in its basin or along its banks. It is important to understand the spiritual aura of global significance of this river and the aspirations of its people. Given this cultural heritage and the recently assigned status of 'National River', it is imperative that the national policy and planning must accord highest priority for restoring the holy river to its old glory. While the people may have resigned to the current state of poor quality of water of the river in the plains and discontinuity in the upper reaches, there is a strong desire for improvement.

Further, given the relative magnitude of pollution loads from point sources viz., urban sewage and industrial effluent discharges vis-à-vis the floral and other offerings during rituals, the latter is not perceived to be significant. Given the tens of millions of renewing actors spread over a large area with vastly disparate educational background and environmental construct, physically it may be extremely challenging, if not impossible to correct the behavior of pilgrims. When the belief dimension is added to these considerations, there is strong resistance to change.

Notwithstanding the challenges, there is a need to allocate adequate resources for anchoring sustained campaign for sensitizing people across the country about the unique natural, cultural and spiritual heritage and bringing a sense of pride for having the one and only 'National River' for the billion plus people.