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TITLE: **India: Idol immersion activities and their management in water bodies -**
Describes effects on water quality due to the Hindu religious custom of immersing idols of deities in water and efforts made to persuade the stakeholders to adopt alternate practices

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ABSTRACT

Description

Construction of idols of holy deities for worship every year and their immersion in water at the end of worship forms a traditional part of Hindu religion. The idols have grown in numbers and size over the years and urban water bodies are facing an increasing nutrient load. For example, the Bhopal Upper Lake, the main source of potable water for Bhopal city, received more than 15000 Ganesh (370 tonnes) and 1300 Durga (99 tonnes) idols in 2000.

Idols are made of clay, but non-biodegradable thermocol and paints containing heavy metals are also used. The immersion practice leads to degradation of water quality and siltation. Parameters like turbidity, Biological Oxygen Demand and Chemical Oxygen Demand became higher on immersion. Increase in heavy metal concentration is low at present, but it is apprehended that continuance of immersions might change this.

Changes in sensitive religious issues can lead to active opposition. It was felt necessary to use the regard that the citizens had for the lake to build a consensus in support of change. The Bhoj Wetland Project was under implementation with the aid of Japan Bank of International Cooperation (JBIC) to preserve the Upper and Lower lake of Bhopal (called Bhoj Wetlands). In 1999, the project launched an extensive campaign through the media and a large number of NGOs to increase awareness among people of the need to save the quality of the potable water of the Upper Lake. Competitions with prizes were held for promoting the construction of smaller and environment friendly idols.

An alternate immersion site, well connected with roads, was developed on the spill channel of the Upper Lake. The flow of the spill channel being towards the outflow, the pollutants would not flow back into the main body. To build a consensus amongst opinion makers, local legislators, corporators, NGOs and leaders of religious communities were taken to the site, their suggestions recorded and approval obtained. The communication and education programmes continued between 1999 and 2002 and resulted gradually into a complete shift to the new site by 2002. This is now the accepted practice.

Lessons learned and replicability

A viable way for inducing acceptance of sensitive decisions is by using a two pronged strategy of an extensive communication and education campaign for generating awareness amongst the populace and arousing their latent feelings on water pollution issues and enlisting support of community leaders by involving them in decision making.

Importance of case to IWRM

Illustrates how a sensitive religious issue concerning water pollution can be tackled by running a stakeholder awareness campaign and creating an environment of consensus building.

Tools used:

C4.2 Communication with stakeholders
C5.3 Consensus building
C4.3 Information and transparency for raising awareness

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Keywords: Consensus Building, Water Bodies Pollution, Religious Activities

MAIN TEXT

1. Background and Problems

The Upper and Lower lakes of Bhopal, constructed respectively in the 11th and 18th century, are typical examples of urban water bodies. While the Upper lake has been a major source of potable water for the people of Bhopal for over a century, the Lower lake remains a source of raw water for the urban development which mushroomed around it as well as on the north eastern fringe of the Upper lake during the last few decades. Till the middle of the last century, the water of Upper lake did not require any treatment before supply for drinking purposes. However, increased anthropogenic activities around these lakes resulted in deterioration of water quality of the lakes. While the Lower lake became eutrophic, only certain pockets of Upper lake have reached the level of eutrophication. The Upper lake still contributes about 40% of water supply to the city. Hence protection of this vulnerable resource from pollution for sustainable use is of great importance.

Idol Immersion is a cause of water pollution peculiar to India with its large number of adherents to the Hindu religion. Construction of idols of holy deities for worship every year and their immersion in water at the end of worship forms a traditional part of Hindu religion. This practice has been a feature of traditional Hindu worship in India since times immemorial. The well known Buda Talaab of Raipur, Hanumantal of Jabalpur, Pichola Lake of Udaipur, Hussain Sagar of Hyderabad, Ukal lake of Hubli and the Upper and Lower lakes of Bhopal are examples of water bodies which are being used for idol immersion. Out of these the Upper lake of Bhopal happens to be a source of potable water to the people. The immersions take place mainly after the worship of the deities Ganesh and Durga, both occurring during September-October. Idols have grown in numbers and size over the years and urban water bodies are facing an increasing nutrient load because of immersions. For example Bhopal Upper Lake, the main source of potable water for Bhopal city, received more than 15000 Ganesh (370 tonnes) and 1300 Durga idols (99 tonnes) in 2000.

Idols are made of clay but non-biodegradable thermocol and paints containing heavy metals such as chromium, nickel, cadmium and lead are also used. The immersion practice leads to degradation of water quality as well as siltation. Parameters like turbidity, BOD and COD became higher on immersion; increase in heavy metal concentration is low at present, but it is apprehended that continuance of immersions might change this. These would be consumed by fishes and in turn by human beings.

Ceremonial worship or ***Pooja*** is celebrated in the months of September/October every year to offer prayers and seek the blessings of Lord Ganesh, who is considered to be the god of wisdom, and Goddess Durga, who is protector from all evils. Earlier the number of locations where this festival was celebrated remained limited to very few installations at residential colonies. As time has passed, these locations have increased in number. More and more colony youth groups have become active and have started installing idols at various centers during the celebration days.

Ganesh worship in earlier times was limited to the installation of the statue of the lord itself, but now thematic ***Jhanki***s - temporary public places where the statue is installed with new concepts, new themes, new formations in combination with depiction of a short mythological story or social message - have also started and are a form of competition and rivalry between groups. The same is the case with the worship of the Goddess Durga and the number of ***Jhankis*** has grown in numbers, size and combinations. Many creative and thematic ***Jhankis*** are created during the celebration days, increasing the material refuse load, which ultimately finds its way into the water bodies.

Immersion of idols in water bodies is an important religious custom that culminates the Durga or Ganesh festival celebrations. The religious significance attached to this customary traditional practice is that the residue of idols, representing gods and goddesses, need to be cooled in water bodies alone as a mark of respect to the deities and their power, as idols of god and goddesses cannot be left unattended on the land because the deity's idol may be subjected to misuse and may invite displeasure of the god. Continuing the traditional practices and religious customs, all the committees participate in a procession at the end of the festivals, which ultimately ends at a water body where the idols are immersed, in the last ritual before the sending off the idols personified as gods. These immersion places are chosen mainly on account of their accessibility to the public.

The reasons for the immersion of idols in the water bodies could be summarized as follows:

1. Water is the only medium that has the capacity to gradually disintegrate the idol without destruction or subjection to flames.
2. Water is the pure medium to cool the powers of idols.
3. Keeping idols open in dry places does not allow disintegration easily and hence can be subjected to misuse.
4. Clay idols can get damaged easily, and keeping disfigured idols is considered inauspicious.

On account of immersion, materials like clay, bamboo, grass, wooden, metal, jute, colors, paints, cloths, flowers, essence sticks, incense, camphor, ash etc. are released to the water bodies. Added clay results in siltation of the lakes while immersed biodegradable materials contaminate the quality of the lake water. The magnitude of siltation to the Upper Lake is evident from Table-1 below.

Table 1: Immersion of Ganesh & Durga idols in Upper Lake (Weight in MT)

Festival	1998		1999		2000	
	Nos.	Weight	Nos.	Weight	Nos.	Weight
Ganesh	10076	129.70	7704	167.90	15531	369.96
Durga	859	129.30	1608	125.30	1301	99.17

The environmental impact on the water quality as per the 1999 data is shown in Table-2,3,4 & 5 below.

Table 2 : Impact of Ganesh idol immersion on water quality of Upper Lake (Year 1999)

Parameter	Pre Immersion	During	Post Immersion
pH	8.1-8.3	8.5-8.7	8.7-8.9
Turbidity	19-29	18-21	38-45
D.O.	8-14.2	9.6-17.6	2.8-13.6 ↓
Alkalinity	96-114	86-114	102-130
Chloride	15.7-16.9	9.4-10.2 ↓	18.5-16.1
Total Solids	144-167	156-172	137-144
BOD	13.2-28.8	20.4-34.4	13.2-36.4
COD	10-80	20-80	120-180

Table 3 : Impact of Durga idol immersion on water quality of Upper Lake (Year 1999)

Parameter	Pre Immersion	During	Post Immersion
pH	7.7-9.0	7.8-8.9	8.2-9.0
Turbidity	38-45	39-44	30-42
D.O.	2.8-13.6	1.8-14.2	4-8 ↓
Alkalinity	102-130	118-124	100-130
Chloride	15.5-16.1	12.5-14.1 ↓	15.8-18.8
BOD	13.2-20	10-13.8	7.6-20.4
COD	130-260	160-290	180-300

***All units except pH & Turbidity are in mg/l**

Table 4 : Heavy metal concentration (μG/*L*) at Upper Lake during Ganesh idol immersion(Year 1999)

Heavy Metal	Pre Immersion		During Immersion		Post Immersion	
	Surface	Bottom	Surface	Bottom	Surface	Bottom
Ni	BDL	BDL	BDL	4	BDL	4
Cr	4	6	5	8	8	18
Mn	102	240	112	326	116	340
Pb	246	526	340	704	460	648

Table 5 : Heavy metal concentration (μG/*L*) at Upper Lake during Durga idol immersion (Year 1999)

Heavy Metals	Pre Immersion		During Immersion		Post Immersion	
	Surface	Bottom	Surface	Bottom	Surface	Bottom
Ni	BDL	4	BDL	6	BDL	8
Cr	4	7	4	8	6	8
Mn	106	240	126	246	136	262
Pb	240	320	252	328	286	328

BDL = below detecting limit

2. Decision and Actions Taken

Religious issues are extremely sensitive ones and hence it was felt necessary to use the regard that the citizens had for the lake to build a consensus in support of change. The Bhoj Wetland Project was under implementation with the aid of Japan Bank of International Cooperation (JBIC) to take action for preserving the Upper and Lower lake of Bhopal (called Bhoj Wetlands). Since 1995 a comprehensive action plan, called the Lake Bhopal Conservation and Management project, for the conservation and management of the twin lakes of Bhopal, which were under environmental stress on account of pollution, was being implemented by the State government. In 1999, the project launched an extensive campaign through the media and a large number of NGOs (namely Sahyog, involved with environmental, child and women welfare; Hope & Faith Educational Society, involve with promotion of education, self help group and environmental management; SEWA, spearheading campaign for environmental improvement and child welfare; Shuruwat, mainly working in the field of environment; Forest Welfare Society, advocating conservation of bio-diversity and human welfare) to increase awareness among people of the need to save the quality of the potable water of the Upper Lake. Competitions with prizes were held for promoting the construction of smaller and environment friendly idols. Articles appeared in the papers about the danger to the lake and to the health of the populace. A large number of entries were received for this competition showing the increased awareness of the people.

In the case of Bhopal, since the Upper Lake was a source of potable water as well, it was essential to try to shift the activity away from the traditional immersion site, Sheetal Das ki Bagiya, since immersion activity could not be stopped. This would entail alternative immersion sites nearby so that the public would agree to use the new sites provided to it. However, this needed an attitudinal shift for accepting alternate sites. It was a matter of understanding and acceptability by religious heads to compromise with sentimental values and show a willingness to break traditional practices. The reasons for not accepting alternative sites largely depended on the mental rigidities of the committees. These rigidities would sometimes find vague expressions with unreasonable explanations for their non-acceptance.

At that time the spill channel of the Upper Lake near the city was being deepened and widened as one of the project components by removing silt for ensuring the designed efflux. An alternate immersion site was identified at Prempura on the channel, well connected with roads. The flow of the spill channel being towards the outfall, the pollutants would not flow back to the main body. The accumulated silt due to idol immersion would be flushed out when the gates of the lake were opened during the rainy season to remove excess water from the lake. The prospective idol immersion site was proposed to the government and their clearance obtained. The identified site was developed by using the excavated silt and stones for constructing an immersion bay at minimum extra cost. A 200-meter long Prempura immersion bay was constructed where sufficient water was available round the year for idol immersion purposes. The site was provided with proper electricity facilities, approach road and vehicle parking. Besides this, platforms for big idols and cranes were constructed for the convenience of people. The construction work was completed just before the Durga idol immersion in 1999. To build a consensus amongst opinion makers, local legislators, corporators, NGOs and leaders of religious communities were taken to the site, their suggestions recorded and approval obtained.

Yearwise action taken by the Project to facilitate diversion of idol immersion from its traditional site Sheetal Das ki Bagia in Upper lake are as below:

1997

i) A compressive Awareness Programme to stop idol immersion in Upper lake was launched. The programme included Seminar, Workshops, Group meetings, discussion etc.

1998

i) Monitoring of idol immersion and water quality at various locations of Upper & Lower lakes was started.
ii) Selected NGOs were involved in creating public awareness.

1999

i) Alternate idol immersion site at Prempura completed.
ii) Local legislators, corporators, NGOs, leader of religious communities and festival societies of various localities were taken by the new site for idol immersion and their suggestions recorded and approval obtained.
iii) Provisions for prizes were made to promote small and environmental friendly idols.
iv) Idol immersion at Prempura Ghat started during Durga festival.

2000

i) Publicity through newspapers, radio, television and display boards at strategic locations was made to sustain public awareness in favour of small & environment friendly idols. NGOs were also involved.
ii) Monitoring & scientific analysis of impact continued.

2001

i) Public hearing on the issue of diversion of idol immersion in traditional site in Upper lake was organized to invite opinion of various walks of life.
ii) Intensive awareness campaign in 23 city wards and 17 villages around Upper & Lower lakes during the festive months was organized through 30 NGOs selected on the basis of their performance in previous years.
iii) Environment friendly idols, which were immersed in Prempura Ghat, were selected for awards.

2002

i) It became a successful year, when the idol immersion at Sheetal Das ki Bagia was totally stopped. City Administration, Bhopal Municipal Corporation and various NGOs played significant roles in the success.
ii) Puja committees transported the idols to the Prempura ghat for immersion willingly.
iii) The Project continues to contribute for the cause through concerted awareness campaign, honoring environment friendly idols, monitoring idol immersion and their impact on water quality etc.

3. Outcomes

The above efforts of the project resulted in diversion of a significant number of idols to the new Prempura site which otherwise would have been immersed in the traditional sites. From 1999 to 2001 the diversion % remained more or less static though there was an increase in awareness amongst the public. In 2002, a large number of public figures, including the mayor, corporators and legislators, and organizations came forward in support of the project and joined the efforts in persuading the Pooja groups to divert the immersions to the alternate site provided The media also provided adequate publicity to these efforts. The participation of different communities and political groups ensured that the matter would not be given a communal or political colour. This resulted in the welcome outcome in 2002 and not a single Ganesh idol and very few Durga idols was immersed in the Bhopal Upper lake. This is now an accepted practice with the people of Bhopal themselves functioning as a pressure group for ensuring sustainability of the efforts. The magnitude of the success is evident from Table-6 below.

Table-6 : Diversion of Idol from Upper lake to Prempura Ghat (Weight in MT)

	Ganesh						Durga							
Year	2000		2001		2002		1999		2000		2001		2002	
Location	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.
Upper Lake	11282	288.00	12952	153.53	-	-	1035	74.56	812	62.00	713	51.56	-	-
Prempura	4249	81.96	1766	29.80	9970	103.50	573	50.74	489	37.17	407	34.65	851	65.97
Total	15531	369.96	14718	183.33	9970	103.50	1608	125.30	1301	99.17	1120	86.21	851	65.97
% Diversion	27.36	22.15	12.00	16.25	100.00	100.00	35.63	40.49	37.59	37.48	36.34	40.19	100	100

Another interesting facet has been the reduction of idol immersion both in number and in weight over the years which shows the attitudinal shift of the public to smaller sized idols on account of the increased awareness. Now

Prempura is the accepted immersion site.

4. Lessons learned and replicability

A viable way for inducing acceptance of sensitive decisions is by using a two pronged strategy of an extensive communication and education campaign for generating awareness amongst the populace and arousing their latent feelings on water pollution issues and enlisting support of community leaders by involving them in decision making.

5. Contacts

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