

A Walk along the Ganga¹ (3-5 class periods)

Suggested Curriculum Areas: Social Studies/Global Studies and the Living Environment

Goals:

1. To expose students to Indian culture including Hindu social customs, traditions, and religious beliefs and practices. (Social Studies Standard 2)
2. To introduce students to water resource issues in India. In what ways have human decisions and activities had an impact on the Ganges ecosystem? (Living Environments, Key Idea 7)
3. To introduce the students to internet and library research skills.
4. To encourage students to think critically about an issue from a variety of perspectives.

Background Information for Teachers

- PowerPoint: “Ganga: River and Ritual in Hinduism”
- Handout: River Ganga, Varanasi India Information sheet
- Articles and book chapters:
 - Alley, Kelly. 1994. Ganga and Gandagi: Interpretations of Pollution and Waste in Banaras. *Ethnology*. 33(2): 127-145.
 - Eck, Diana. 1982. *Banaras: City of Light*. New York: Knopf. (especially Chapter 5: The River Ganges and the Great Ghats)
 - Pandey, Brijesh. 2012. Ganga Polluted. *Tehelka Magazine*.
http://archive.tehelka.com/story_main53.asp?filename=Ne160612GANGA.asp
- Video: Rose Apple Tree Island (2012) (<http://vimeo.com/41653955>)
- Video: “Ganges” (BBC, 2007)
 - A beautiful documentary about the ecology and cultural importance of the Ganges River.
 - This video can be ordered from the BBC. There are short clips at <http://www.bbc.co.uk/programmes/b007wjwz/clips>. You can also find it on YouTube.
- Website: National Ganga River Basin Authority: <http://cpcb.nic.in/ngrba/about.html>
 - The website for the government agency responsible for managing the Ganges watershed.
- Website: Sankat Mochan Foundation: <http://sankatmochanfoundationonline.org/>
 - Sankat Mochan Foundation is a well-established and well-known non-governmental organization (NGO) working to clean up the Ganges.

¹ This activity was developed by Emera Bridger Wilson, Syracuse University. Parts of it were modified from The Upper Parramatta River Catchment Trust. 2002. *River Ganga Virtual Field Trip*.
<http://www.uprct.nsw.gov.au/PDF/Field%20Trips/10%20-%20Ganges%20River%20Varanasi.pdf>

Lesson Outline

This activity would work well as a collaborative activity between Social Studies and Living Environment classes, but it could also be used independently in either course.

Social Studies

This activity can be modified for use at the 6th grade or High School level.

- Introduce the basics concepts and history of “Hinduism” and the importance of the Ganges to Hindus. Discuss the Ganges cultural importance in healing, cleansing of sins, and securing salvation after death. Introduce the students to the concepts of *dharma*, *karma*, and *moksha*.
- Discuss the anthropogenic threats to the Ganges. How are these similar to or different from other human-nature interactions throughout the world or in history?
- After giving the students the “Walk along the Ganges” worksheet and handout, allow students to work in groups to answer the questions. If appropriate, have them focus on particular questions. Encourage them to think about what additional resources they could use to answer the questions adequately. You may want to have them come up with a list of additional resources.
- Discuss possible solutions in class or have them write an essay about the tension between cultural practices and environmental degradation.

Living Environments

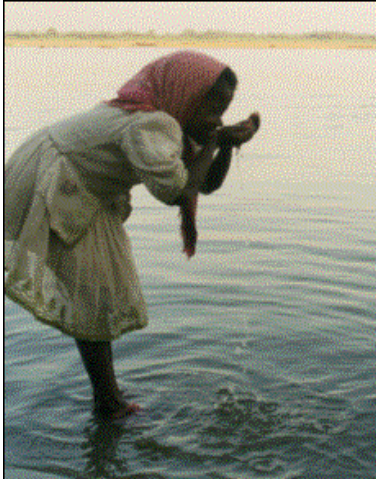


- After giving the students the “Walk along the Ganges” worksheet, discuss the causes, pathways and impacts of surface water pollution. Introduce concepts such as point and non-point pollution.
- Introduce students to the ways in which scientists measure water quality (dissolved oxygen, turbidity, nutrient concentrations, and fecal coliform counts).
- Allow students to work in groups to answer the questions on the worksheet. If appropriate, have them focus on particular questions. Encourage them to think about what additional resources they could use to answer the questions adequately. You may want to have them come up with a list of additional resources.
- Discuss possible solutions for the problem. Ask students to develop a scientific experiment or technological approach to deal with river pollution or to develop an awareness campaign that is culturally relevant.

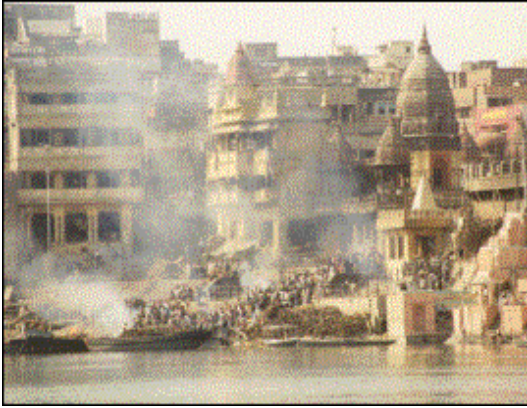
Alternate Activities

- The “Decent of Ganga” and other Hindu stories about rivers and water could be used to compare and contrast different mythological themes in Greek, Roman, and Indian culture (as well as oral folk traditions in other parts of the world).
- Hindu calendar art could be the focus of an art project to examine the ways in which the divine and/or nature is represented in art.

A Walk along the Ganga

This is a “virtual” field trip to the city of Varanasi in India. The trip takes you along the 7km stretch of River Ganga, experiencing the joys and challenges of this ancient city.

	<p>Stop 1 – Child drinks from the river</p> <p>A young girl takes a drink of water from the river at Tulsi Ghat, at the southern edge of the city. The fecal coliform reading for Tulsi Ghat on this day was 60,000 colony forming units (CFU) per 100ml.</p> <ol style="list-style-type: none">1. What is the Environmental Protection Agency (EPA) standard for drinking water quality?2. What are the potential health impacts of drinking this water?
	<p>Stop 2 – Tulsi Ghat – Morning Prayers</p> <p>Every day around 60,000 people come to pray at the banks of the river. The city can be seen stretching off into the distance.</p> <ol style="list-style-type: none">3. What is the religious significance of the River Ganga at Varanasi?
	<p>Stop 3 – Tulsi Ghat - bathing</p> <p>The use of soaps and detergents is a minor source of pollution.</p> <ol style="list-style-type: none">4. What impacts could soaps and detergents have on the water quality of the river?



Stop 4 - Manikarnika Ghat

One of the two most important cremation ghats in Varanasi. It is said that the fires on the ghat have not gone out for centuries. Here people bring their dead for cremation. The ashes are then placed into the river.

5. What do Hindus hope will come from their ashes being placed into the river?



Stop 5 - Raw sewage

Millions of liters of raw sewage flows into the river each day – the most disturbing impacts sewage flow into the religious bathing areas. The fecal coliform count at Shivalla Ghat on this day was 150,000 cfu/100ml.

6. What are the dangers associated with bathing in water contaminated with sewage at this level?



Stop 6 - Buffalo bathing

Thousands of buffalo are brought to the river each day to be bathed.

7. What are the likely impacts of the cattle wallowing in the river?



Stop 7 - Swatcha Ganga Research Lab

The lab was established in 1992 to monitor the river water quality in the city of Varanasi. Since then more than 30,000 tests have been conducted. The lab has played an essential role as a public watchdog, highlighting the serious public health and ecological impacts of sewage on river water quality. There is also a government water monitoring program which does not conduct fecal coliform testing.

8. In what ways is the role of a non-government monitoring program important?



Stop 8 - River Keepers

The River Keepers program is an initiative of the Sankat Mochan Foundation "Swatcha Ganga" (Clean Ganges) Campaign. Every day 12 young volunteers travel along the riverfront collecting solid waste, plastic bags and flower garlands.

9. What could be done with the waste collected by the river keepers?



Stop 9 - Ghat Purohit Sangam

In February 2002, Hindu priests lit candles to commit to caring to for the river. While they used to have advise religious bathers that the river is Goddess and they can throw whatever rubbish they like into the river and She will clean it, now the priests say that the River is our Mother – how can we throw garbage in her face?

10. In what way can religious philosophy and practices be reimagined in order to protect the environment?

E5 - Ganges River, Varanasi

Varanasi City

Varanasi, Kashi, Benares. This city with three names is among the oldest living cities in the world. Varanasi is the city that grew along the banks of River Ganga in the stretch between the Assi and Varuna Rivers. A spiritual city called Kashi in the scriptures and widely known as Benares, the city was renamed as Varanasi after India gained independence. The city is a centre for religion, history, culture and learning.



Kashi

To the people of Hindu faith, the 'spiritual city' known as Kashi lives in a permanent state of purity, where the *jyotirlinga* or column of light joins heaven to earth. It is known as the city of the Hindu God Shiva. Kashi is seen as the ford across *samsara* , the river of life. To the Hindu, the ultimate guarantee of *moksha* or salvation comes from dying in Kashi.

River Ganga

The river flows some 2,500 km from the Himalayan Mountains to the Bay of Bengal. The Ganges Basin is inhabited by nearly 400 million people, making it the most populous river basin in the world. The basin measures about 1 million square kilometres and has a mean annual flow of over 400,000 million cubic kilometres. It includes part of the territories of India, Nepal, Bangladesh and Tibet.

The 7km stretch through Varanasi is the only part of this journey where the river turns back towards Her source. Here Ganga is known as *Gangamaiyya* , Mother, Goddess who nourishes the very soul of Kashi, nurturing its life and gathering up its dead. It is said that the river fell in love with the city and nearly turned back here. The half loop northwards creates the curved bank where the ghats stand today. The flood plain on the opposite bank of Ganga has never been inhabited and stays as a sandy waste, used for growing watermelons during the dry season.

To Hindus (the main religious group in India) the Ganges River has special significance for religious rites. Every day more than 60,00 people come to bathe and pray in the river along the religious bathing areas in Varanasi. They sip *Ganga Jal* (water) as an act of religious purification. Hindus believe that if their ashes are placed in the river after cremation that they will go to Nirvana (Heaven).

Pollution

- About 80% of the pollution of River Ganga in Benares is caused by sewage. Sewage flows untreated into the religious bathing areas through many overflows and leaks.

- The disposal of human and animal bodies into the river has drawn much attention from tourists and pilgrims. Many people cannot afford the cost of cremation. However this pollution source has less severe impacts than the huge volume of sewage.
- In addition there are many other minor non-point sources of pollution such as:
 - Disposal of solid waste, plastic bags and flower garlands,
 - People using soaps and detergents for washing (many homes have no running water) ,
 - People toileting directly onto the ghats (there are few public toilets),
 - Buffalo washing and wallowing in the river
 - Industrial effluent from small scale sari dying and brass making factories.

Swatcha Ganga (Clean Ganges)

- Public education through specially designed, culturally consistent programs including plays, concerts, debates, painting competition and conventions etc.
- River water quality monitoring through the Swatcha Ganga Research Laboratory at Tulsī Ghat. The SGRL was established in 1992 with support from Swedish Nature Foundation (SNF).
- Preparing and proposing appropriate technology and suitable alternatives for waste water interception and treatment of sewage in Varanasi using Advanced Integrated Wastewater Ponding System (AIWPS) – supported by Friends of the Ganges USA and USAID.
- Mobilising, involving and working with local government in cleaning Ganga.
- Establishing the Swatcha Ganga Environmental Education Centre at Tulsī Ghat, in partnership with Oz GREEN Australia. Activities of SGEEC include
 - Environmental education programs in schools
 - Health and environmental programs in villages – village environmental action planning
 - Installation of clean drinking water sources in villages affected by sewage effluent.
 - Community education and World Water Day “human chain”.
- Web magazine (Ezine) to create global awareness about environmental issues especially those pertaining to Ganga – supported by Swedish International Development Agency (SIDA) – www.cleanganga.com
- Creating a workforce of volunteers to work along the religious bathing areas (ghats), cleaning garbage and flower garlands and persuading people from pollution causing habits such as washing clothes, dumping garbage and toileting on the ghats – supported by Swedish International Development Agency (SIDA).

Links and Resources

Swatcha Ganga video – available from Oz GREEN (ozgreen@ozgreen.org.au)

Oz GREEN Newsletters:

- March 2002 “India 10 Years On”,
- March 2000 “Swatcha Ganga” Special Edition

Oz GREEN website: www.ozgreen.org.au

- Friends of the Ganges
- Swatcha Ganga Chattrā Sangam Report, January 2002 (Clean Ganga Student Congress)
- Swatcha Ganga Ghat Purohit Sangam Report, February 2002 (Clean Ganga River Priests Congress)

Sankat Mochan Foundation – Swatcha Ganga Campaign website: www.cleanganga.com
 Channel Nine – “60 Minutes” program, April 1997 “River Keepers”

Ganga: River and Ritual in Hinduism

Emera Bridger Wilson
South Asia Center,
Syracuse University

[Ramayana Clip](#)

Water and the Holy in South Asia

- ◆ Approaching the Divine
 - *Snan* (Hinduism, Sikhism)
 - *Ghusl* (Islam)
- ◆ Water as embodiment of the Divine
 - River as Goddess
- ◆ Gift of the Divine
 - Nectar of the Gods
(*Amrit*)



VERY Brief Primer on Hinduism

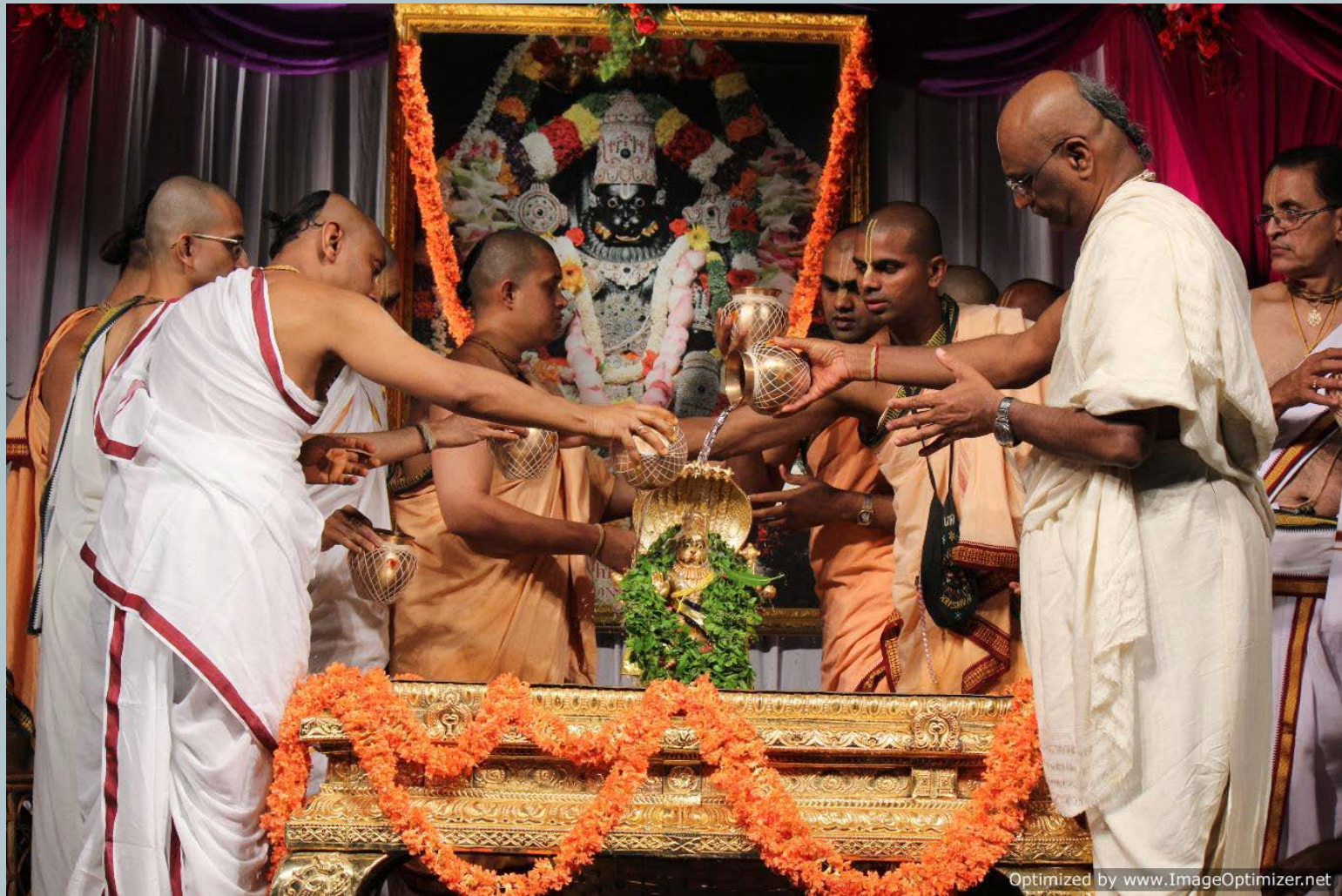
- ◆ 80% of Indians are Hindus
- ◆ “Hinduism” a bit of a misnomer
- ◆ A faith that believes in one unifying God (Brahman) that is expressed in many different forms
- ◆ Very diverse set of practices and beliefs



Water in Hindu Ritual



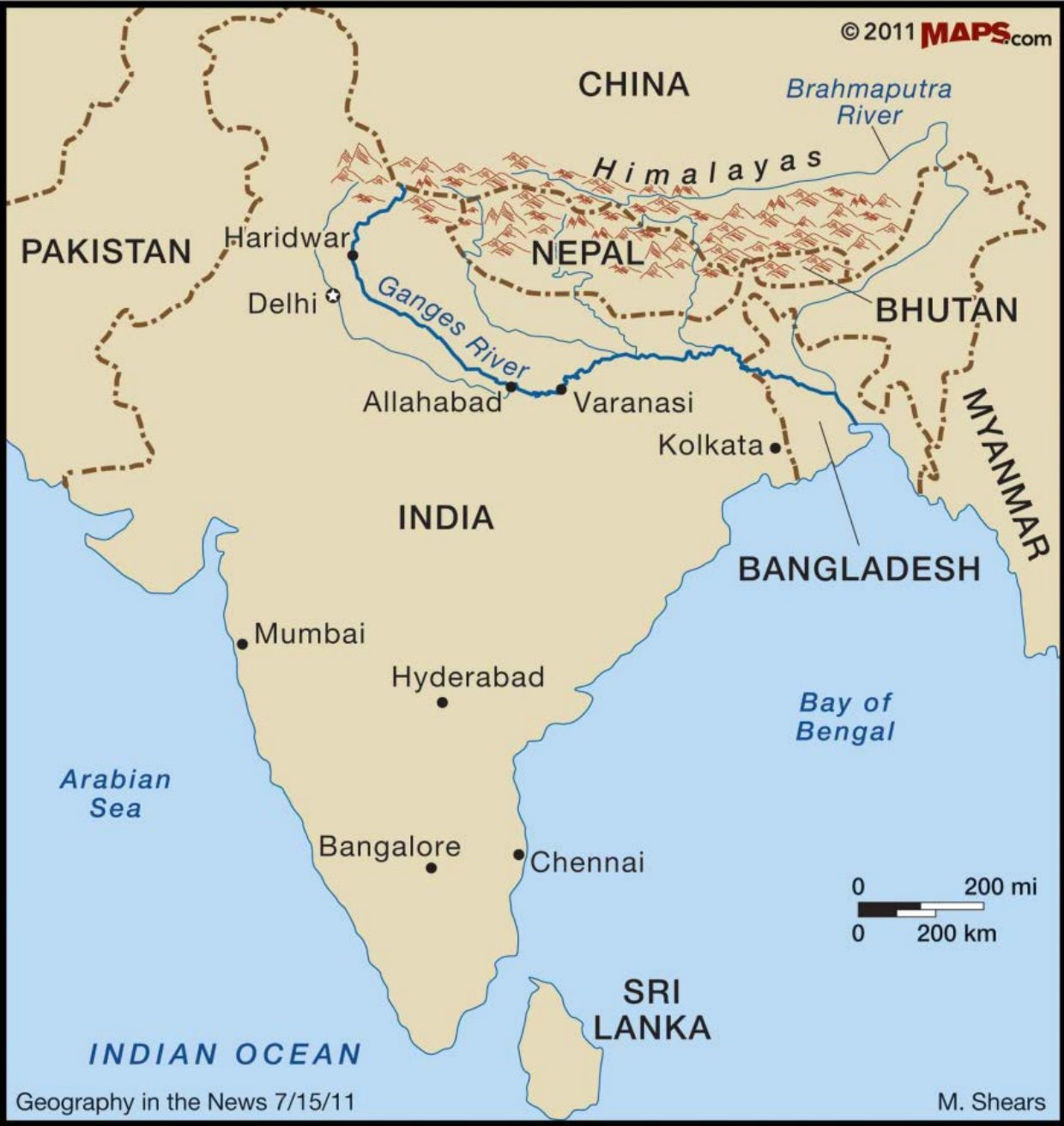
Water in Hindu Ritual



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Ganga Jal





Descent of Ganga



<https://www.youtube.com/watch?v=F1T7TG2OK3w&NR=1&feature=endscreen>

http://hindupoornima.com/yahoo_site_admin/assets/images/Ganga_Urpathi.4171802_std.jpg

Worship of Ganga Ma



<http://gkamesh.files.wordpress.com/2012/05/ganga-devi-2.jpg>

http://www.trekearth.com/gallery/Asia/India/North/Uttar_Pradesh/Varanasi/photo384540.htm

<http://hinduexistence.files.wordpress.com/2011/01/sagar6.jpg>

Worship of Ganga Ma



Death and Liberation



💧 <http://www.bbc.co.uk/programmes/p009b9fb>

Everyday Life on Ganga

- 💧 What kinds of different activities do you notice in this [video](#)?
- 💧 Both religious (sacred) and non-religious (profane) activities take place on the river

HOLY RIVER UNHOLY MESS

2
6

GANGA

THE STANDARD PARAMETERS FOR COLIFORM* LEVELS IN RIVER WATER ARE

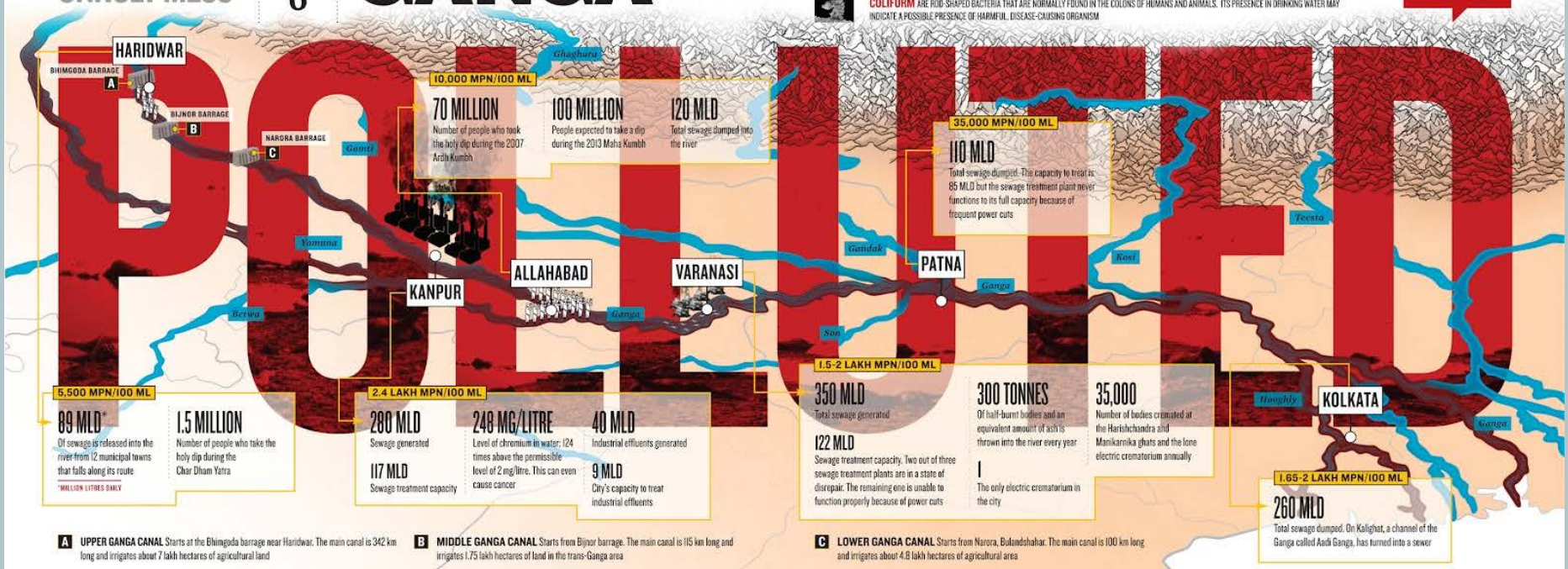
<50 MPN*/100 ML FOR DRINKING <500 MPN / 100 ML FOR BATHING

MPN: MOST PROBABLE NUMBER

READ THE FIRST PART
OF THE SERIES
GANGA 'DAMNED'

www.tehelka.com

COLIFORM ARE ROD-SHAPED BACTERIA THAT ARE NORMALLY FOUND IN THE COLONS OF HUMANS AND ANIMALS. ITS PRESENCE IN DRINKING WATER MAY INDICATE A POSSIBLE PRESENCE OF HARMFUL, DISEASE-CAUSING ORGANISM



₹1,100 CR OFFICIALLY SPENT BY THE GOVERNMENT OF INDIA TO CLEAN UP THE GANGA

₹20,000 CR SPENT TO CLEAN UP THE RIVER, ACCORDING TO THE COUNSEL FOR THE CENTRAL POLLUTION CONTROL BOARD

90-95% AMOUNT OF WATER DIVERTED FOR IRRIGATION PURPOSES, LEADING TO LOW FLOW OF THE RIVER AND EXACERBATING POLLUTION

2.9 BILLION LITRES DAILY SEWAGE DISCHARGED INTO THE GANGA, ACCORDING TO GOVERNMENT OF INDIA FIGURES

The Ganga Paradox

- ◆ Ganga is always ritually pure
 - It rids people and objects of ritual impurities
- ◆ But it is heavily polluted by sewage, industrial, and agricultural pollution
- ◆ Devout Hindus believe that due to Ganga's power, *gandagi* (waste) does not harm Her
 - “Mother Ganga cleans up after her children”
- ◆ Some Hindu scientists claim Ganga has special physical qualities that make her less susceptible to pollution
- ◆ NGOs seek to use religion to change the mind set
 - Respect Ganga Ma! Don't dump your waste in her!!
- ◆ Government inefficiency/inaction seen as major roadblock to change

Ganga is Everywhere

- 💧 “Hindus Find a Ganges in Queens, to Park Rangers’ Dismay” (NYT, 21 April 2011)



Hindu devotees make offerings on Jamaica Bay beach in New York