



SUMMARY

2011

WORKING TOGETHER
TO HELP PROTECT THE
WORLD'S FRESHWATER
RESOURCES

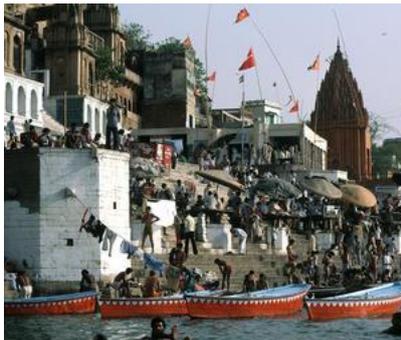
HSBC 

The world's local bank

Freshwater

THE LIVING GANGA PROGRAMME

ABOUT THE GANGES



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The mighty Ganges, which flows for 2,525 km from the Himalayas to the Bay of Bengal, is an emblem of India's rich culture and ecology. Its basin covers roughly 26% India's land area and is home to 400 million people. It also contains over 140 fish species and is home to the world's only population of mangrove-inhabiting tigers.

However, the Ganges is also highly polluted and over exploited. Huge volumes of water are taken for irrigation whilst untreated sewage and toxic effluent are dumped into it routinely. Currently 2 billion litres of untreated human waste enters the Ganges every day. Unsustainable hydropower represents a major threat with new developments affecting the flow of the river.

ABOUT THE LIVING GANGA PROGRAMME

In 2007 the Ganges became one of the focal rivers for the HSBC Climate Partnership. WWF set out to demonstrate that scientific research, practical action on the ground and policy work can help to restore the river.

The Living Ganga Programme focuses on the first 800km of the river system, from Gangotri to Kanpur. WWF has worked with industry, city authorities and communities to show how water can be saved,

pollution can be reduced, and hydropower developed in a sustainable manner. We have also been actively working to increase the populations of threatened species who will benefit from a cleaner river.

In 2009 the Central Indian Government set up the National Ganga River Basin Authority (NGRBA) to meet the formidable challenge of restoring the river and produce a basin wide management plan. Because of our work under the HSBC Climate Partnership WWF has been asked to contribute to this process offering potential solutions for biodiversity, environmental flows and pollution reduction. The information below explains what WWF has been able to do thanks to HSBC's commitment to securing freshwater resources and tackling climate change.

ENVIRONMENTAL FLOWS

WWF India brought together experts to develop a groundbreaking methodology to determine how much water needs to flow down the river to keep it alive. In addition to taking account of ecological and geomorphologic water requirements, the approach includes livelihood, spiritual and cultural needs. These include an evaluation of the volume of water required for ritual purifications and the needs of indicator species such as the Ganges river dolphin.

The Government of India now recognises the importance of environmental flows and has invited WWF to coordinate this aspect of the forthcoming Ganga River Basin Management Plan. The plan will consider what needs to be done at a policy and operational level to ensure a healthy flow in the Ganges.

POLLUTION FROM INDUSTRIES

WWF has worked with the Sugar & Distillery and the Pulp & Paper industries to demonstrate how water and energy savings can be made and pollution reduced, whilst saving money. In 2011 selected companies are implementing best practice strategies to mitigate their impacts on the river. Prior to these pilot projects WWF led a series of training events to educate managers on the day-to-day activities that can reduce water waste. Also in 2011, WWF launched the 'Green Chemistry' training course for the tannery industry in and around Kanpur – so far 40 students have been trained in better management practices for the tannery industry.

POLLUTION FROM SEWAGE

WWF has piloted a process known as bioremediation, in Kanpur, where sewage eating bacteria was added to an open sewer which drains into the Ganges. The micro-organisms clean the water which becomes odourless and clear by the time it reaches the river.

Following successful pilot projects by WWF in three sites, the Central Pollution Control Board is taking up bioremediation projects in seven other locations – including 4 sites within the Ganga basin. These pilots will be fully funded by the National Ganga River Basin Authority.



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BIODIVERSITY

The endangered Ganges river dolphin, an indicator of the river's health, was declared India's National Aquatic Animal in 2009. Following this WWF worked with the Ministry of Environment and Forests to develop the Ganges River Dolphin Action Plan 2010 – 2020. We have interacted with local communities, showing them the benefits of using of compost instead of chemical fertilisers in agriculture to reduce pollution which affects dolphin habitat.

We have also been working with the Indian Government to reintroduce gharials, critically endangered freshwater crocodiles into the river. In 2009, 195 captive gharials were released in the Upper reaches of Ganges. Surveys have shown that the gharials are growing and developing well.

VULNERABILITY ASSESSMENT

In 2011, we produced an innovative report that assessed the vulnerability to climate change of people, livelihoods and ecosystems in the Ganges river basin. Recommendations from the report include the need to integrate climate vulnerability and risks into development policies, and to formulate a climate adaptation policy. This report led to pilot climate change adaptation projects initiated in two highly vulnerable districts of Uttar Pradesh to demonstrate how, for example, the agriculture sector can better manage water resources

HYDROPOWER

We have highlighted a series of 'critical stretches', which explain where biodiversity needs to be conserved and where hydropower projects can be located with minimal impact. The approach has been developed and tested for the Kali river basin and a report will be published to show the methodology. Another report is being finalised, which describes hydropower development and its impacts in Uttarkhand.

ENERGY EFFICIENCY

A large amount of energy is used in pumping wastewater as well supplying clean water. We have been working with the city of Kanpur to help identify how energy efficiency can be improved in their water management system which will enable attractive financial savings. Audits, recommendations and training of engineers and utility providers have been carried out. The authorities are now implementing the recommendations and monitoring the results in terms of energy and financial savings.

FOR MORE INFORMATION ABOUT WWF INDIA'S LIVING GANGA PROGRAMME

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