

ARSENIC MITIGATION IN WEST BENGAL, INDIA: NEW HOPE FOR MILLIONS

David Christiana¹

ABSTRACT

Surface water supplies in the Ganga delta region of India and Bangladesh are unsafe due to multiple contaminants and turbidity. Responding to the dilemma, development aid in the 1960s and 1970s saw thousands of wells drilled, only to inadvertently create another health crisis. Groundwater in the delta region is naturally high in arsenic. Incidents of arsenicosis, cancer, and other arsenic-related diseases have reached epidemic proportions, causing great hardships on the millions of residents affected who want to live productive, healthy lives.

Water For People, and its partner, the Bengal Engineering College (BEC), have installed 107 arsenic filters on wells in communities most affected by high arsenic. The Amal Filter, named after its developer, Dr. Amal Dutta of the BEC, is an effective and inexpensive means to remove up to 95% arsenic in groundwater. Each installation costs \$1,200. The Amal filter uses activated alumina as the filter media. Spent filter media is regenerated and reused. The BEC is now testing the effectiveness of ion exchange resins used in series with the activated alumina.

Most important, the technology is sustainable. The filter's straightforward design and construction, locally available materials, extensive community education, the formation of water committees, and health and hygiene education have been instrumental in the solutions acceptance in the community and ultimate sustainability.

This paper will also discuss the results of the filter's use in several West Bengal communities. Arsenic concentrations as high as 200 micrograms per liter ($\mu\text{g/L}$) have been generally reduced to 10 to 35 $\mu\text{g/L}$. Preliminary results of the ion exchange resin will be presented if available. The filter has had significant impacts on communities as health improves and the overall quality of life rises in West Bengal.

Included in this document is additional information about Water For People and its program in West Bengal, India.

¹ David Christiana is the past Chair and a current volunteer of the Water For People Committee in Arizona. The Committee is comprised of volunteers who raise funds for Water For People projects and perform outreach activities in Arizona to raise awareness of the water and sanitation crisis in the developing world. This presentation describes work performed by others under the auspices of Water For People – India (www.waterforpeople.org) and is presented independently of his employer. Direct inquiries to the author: c/o Arizona Department of Water Resources, 3550 North Central Avenue, Phoenix, AZ 85012, at 602-903-8296, or dchristiana@cox.net.



[Home](#) | [About Us](#) | [Worldwide Programs](#) | [Get Involved](#) | [Events](#) | [Publications](#) | [Contributors](#) | [Contact](#)

India/West Bengal

[Worldwide Programs](#) | [Updates](#)

Background

India is a large, varied country with a growing population of more than a billion people. There is an incredible diversity of wealth, religions, languages, culture, and geography. There is a large divide between rich and poor, with more than 25% of people living below the poverty line. Population growth remains rapid, especially in urban areas where people are migrating from rural communities in search of a better life.

India's diverse economy includes agriculture, handicrafts, and a wide range of modern industries and services. India has enjoyed significant economic growth over the last decade and poverty has been reduced by about 10%. This economic expansion has helped certain regions reach new levels of prosperity while others remain some of the most impoverished in the world.

[Online Donation](#)

[Online Store](#)

[FAQs](#)

Water and Sanitation

Water For People cannot hope to fully address the water and sanitation needs of a country of India's magnitude, but it has made a commitment to make a difference in one of the country's poorest regions, the State of West Bengal.

Access to water and sanitation varies across West Bengal with wide disparities between districts. Water in eight of 19 districts within West Bengal are arsenic-ridden, making it unsafe for more than 5 million people who often turn to nearby ponds shared with livestock. As a result, West Bengal has one of the world's highest levels of water-related illnesses.

The sanitation situation in West Bengal is equally alarming. The few facilities that do exist are poorly maintained, offer no privacy, and are under severe strain from overuse. Responsibility for maintenance of public toilets is often ambiguous, leading to unclean facilities that are rife with disease. Most people simply defecate in fields, rivers, or ponds creating even greater health risks. The absence of sanitation facilities in schools contributes significantly to the dropout rates of female students when they reach puberty.



[Gallery](#)

[WFP Canada](#)

Water For People in India

Water For People began working in India in 1996 with a small pilot effort to help eliminate the threat of naturally occurring arsenic in the water supplies. Water For People partnered with Bengal Engineering and Science University to develop simple, locally manufactured filters that effectively remove arsenic from the water supply at public wellheads. Today, this innovative work continues with more than 110 filters having been installed, providing more than 33,000 people with safe drinking water.

But Water For People's work in West Bengal extends beyond arsenic mitigation. In 2005, Water For People established a more formal presence in India when it opened an office in Kolkata and hired a full-time country coordinator, Rajashi Mukherjee, to facilitate work in the region with the support of four full-time staff members. Water For People-India has committed to help meet the basic water and sanitation needs of thousands of India's poorest rural inhabitants with the development of appropriate and sustainable solutions.

In 2006, Water For People-India managed nine projects in West Bengal, directly benefiting 33,656 people, a dramatic increase of nearly 600% over 2005. The organization has developed plans to increase the sustainable coverage of safe water from 60% to 100% in 20 villages over the next five years.

Sanitation is a top priority for this region and Water For People has committed to covering 90% of the estimated 8,620 toilets needed for these 20 villages by 2011. Water For People will also equip 34 schools with water and sanitation facilities, making it more attractive for the 12,000 children in these villages to attend classes. Water For People will strengthen hygiene education programs to promote measurable changes in hygiene practices that undermine household health.

Arsenic remains a significant problem in West Bengal. Water For People will continue to strengthen its arsenic mitigation program by increasing the rate at which at-risk communities benefit from arsenic-removal technologies.

Working closely with its in-country staff, Water For People has developed an aggressive [strategic plan](#) to make a more meaningful impact in meeting the water and sanitation needs in the West Bengal region of India between 2007-2011. ◀



[Enlarge Map](#)

India/West Bengal At-a-Glance

- ▶ **Population:** 1,095,351,995/80,221,171
- ▶ **Languages:** Hindi and Bengali
- ▶ **Per capita income:** \$3,400/\$5,901
- ▶ **Life expectancy:** 65years/63 years
- ▶ **Under five mortality rate:** 85 per 1,000 live births/unknown

Source: [World Factbook](#) and [UNICEF](#)

Progress Report Water For People-India

- ▶ [Progress Report Mid-Year 2007](#)
- ▶ [A Bengali student improves sanitation at his high school](#)

Changing Lives in India

"I volunteered to help maintain the filter pump located near my house. After the filter was installed, I was elected to my village's water committee. I manage the collection of tariffs, the monitoring of the filter activity and posting of results each day. Now I serve on four water committees. I feel good about myself and the new skills I have learned. Thank you Water For People. Safe water brought us closer together."

Anima Ghosh, Rajballaapur, India





**Fourth Quarter 2006
Country Update for India**

October, November and December 2006

*The following is a list of all
active projects in India.*

INDIA PROJECTS

Project Number: IND 0572

Name of Project: Gangapur and Krishnadaspur Community Drinking Water and Health Hygiene Project

Partner Organization: Sunderban Social Development Center

In a milieu of general illiteracy, poor health conditions and an even poorer economy, Sundarban Social Development Centre (SSDC) was started in 1989 with the aims of reaching out to the marginalized groups of Indian society through community-based activities and ensuring sustainability through their active involvement and participation in this work. SSDC has many years of experience working on water, sanitation and hygiene education issues. Partnerships with agencies like WaterAid have enabled the organization to make good progress in this sector.

Except for SSDC, there are no other NGOs working in the selected villages. SSDC's efforts have been directed to mobilize adolescents and women's groups through programs like savings and credit in self-help groups and preventive health interventions.

Community Description: The Sundarban Islands are among the most remote rural areas in the state of West Bengal in India. The region is covered with rivers and deep forests, and has a collection of many small islands. Geographically it is considered the largest coastal region of India. The area falls under the district of South 24 Parganas, consisting of 29 development blocks with more than two hundred thousand people living in each block. The 'Pathar Protima' Block within these 29 blocks will be covered through this project.

Waterborne disease continues to be a major hazard, caused mainly by inadequate access to safe drinking water, improper sanitation and unhygienic habits. Being an island region, the area is accessible only by boat and is virtually cut off from the rest of the state. This makes communication and transportation extremely difficult and also expensive. This is also the main reason for the region to remain a neglected zone, both by government and private agencies.

Thirty-three percent of the families in the area earn their livelihood from agriculture and most do not own farms but work as farm laborers. Being a saline area (that is, an area in which the water has high salt content), and allowing only a single crop of rice every year, farmers find employment for only six months a year and earn around \$1.50 per day during the agricultural season. Women and children are mainly engaged in collecting (fish) spawns and have to remain neck deep in water for 8 to 10 hours every day to earn an income. Door-to-door fish hawking, biri (leaf cigarettes) making, honey collection, wood cutting in the forest, etc., are some of the other common occupations. Women and female children also go to neighboring towns to work as domestic help. The main language spoken in the area is Bengali (100 percent).

Water collection and storage is the primary responsibility of the women who have to cater to the needs of the family in most difficult situations. Children also help, especially female children, who eventually drop out of school to collect water for the family.

The community depends mainly on individual ponds for washing, cooking and bathing, and due to the virtual absence of latrines, the entire family defecates in open fields. Local quack doctors and traditional healers are the only recourse for health care, even during emergencies.

Community Needs: Lack of sources of safe and accessible drinking water, along with poor sanitation and hygiene practices, are common. The cost of installing tube wells is very high in

this coastal belt, resulting in dependence on the government and other external agencies, the presence of which is negligible in this area. Existing water sources are few, and among these, many remain defunct for long periods of time. Tube wells are spread out, forcing women to travel long distances to collect water. The rural community is vulnerable to various waterborne diseases and is deprived of minimum basic health care, due to the region's inaccessibility.

Project Details: SSDC will install eight bore wells with six hand pumps each in two communities (four in each community). There will be a water committee formed in each community by the user families. The water committee's responsibility will be to collect a water tariff from the users on a monthly basis, to perform operation and maintenance tasks, to assure long-term sustainability and maintain a liaison with the respected NGO and local administration for any future problems that may arise. SSDC will be in charge of overall installation and will hire an independent vendor that will be in charge of the installation. Two banks of spare parts will be developed in the communities to provide parts and equipment needed for maintenance. The NGO will also disseminate information on health and hygiene practices, safe water collection and safe sanitary measures through group sessions, one-on-one meetings, short skit presentations and other methods. In the long term, this information will spread by the local women's self-help group.

Beneficiaries: 300 beneficiaries, or 50 families

Project Number: IND 06014

Name of Project: Pathar Pratima Drinking Water Project

Partner Organization: Sabuj Sangha

Community Description: Pathar Pratima Block in South 24 Parganas is part of the Sundarban region. This deltaic region is subdivided into small and large islands by rivers and riverlets. Vegetated by dense mangrove forests, human habitation exists only on a few islands. Close proximity to the Bay of Bengal has made the soil sticky, alluvial and saline with availability of safe and sweet drinking water existing at depths varying from 1,000 to 1,200 feet. The suggested operational area for the project consists of two villages – Purba Sripatinagar and Paschim Sripatinagar on K-Plot Island. These two villages constitute an island community. The island villages are susceptible to frequent floods and cyclones due to their geographical location.

The island villages have eight self-help groups, eight primary schools, one (co-education) high school and one junior girls school. Fishery and agriculture are the primary income-generating activities of the community. Bengali is the primary language spoken with minor colloquial variations. While the literacy level of parents hovers between illiteracy and basic literacy, their children are better educated – primary to secondary school level.

Socially, the men are considered the main bread earners in the family while the women are the hearth keepers and children attend school. In practice, women and teenaged children are involved in seasonal fish collection to augment the family income.

Community Needs: People frequently fall prey to health problems, as they are compelled to use non-potable water for drinking, untreated water for cooking and washing, and practice open defecation for want of proper sanitation facilities.

Women in the community spend an average of three hours each day collecting water. The current water sources for drinking and cooking are tube-wells, and ponds are the source for other household needs. Water from these sources receives no treatment. With a population 9,400 people in the villages, there are only 15 working tubewells, resulting in 627 people depending on each tube well.

Project Details: The project envisages improved quality of drinking water in the two villages of Purba and Paschim Sripatinagar, located within the Pathar Pratima Block in Sundarban delta regions, which houses some of the largest mangrove forests in the world. The proposed addition of nine tube wells will considerably bring down the unit to population ratio.

The main objective of the project will be to improve the health status of the deprived rural community in these villages. Thus special emphasis will be given to preventive community health and education of children and their families in order to ensure improvement in their quality of life. Health awareness and hygiene training will be an integral part of this project.

The following is a brief outline of activities to be undertaken to achieve the overall objectives of the project.

- Installation of nine deep tube wells for provision of safe drinking water at the nearest point of the inhabitants, so that no woman or child is required to travel more than 200 meters to fetch drinking water.

- Formation of a water-user committee (or WATSAN i.e., water/sanitation) committee at each installation site that will be responsible for overall management and maintenance of the water source.
- These WATSAN committees will collect subscriptions among the users to build up a water sources maintenance fund. The accumulated fund will be kept in a recognized financial institution (i.e., a bank or post office) as a reserve to meet the expenses for upkeep and proper maintenance of the water source.
- Provide hand pump maintenance training to the local youth and women for periodic preventive maintenance and repair of the sources, as and when required.
- Distribute simple tools to the trained people for maintenance of the sources.
- Establish a bank of spare parts within the village. When the tube wells require spare parts, the WATSAN committee will use its maintenance funds to purchase them from the spare parts bank.
- Sensitize the local communities about safe water in relation to health, using a variety of techniques and communication tools that will be suggested by Water For People after training the organization representatives.
- The local administration will play an active role from the planning to execution stage of the program. It will also lend support by mobilizing government resources and help in creating structures for future maintenance of the project.

Beneficiaries: 2,250

Project Number: IND 06027

Name of Project: Dakshin and Uttar Water Project

Partner Organization: Rural Aid



Community Description: Sagar Island is situated in the southern part of West Bengal, bounded by the Hooghly River in the west, Battala River in the east and north and the Bay of Bengal in the south. The island is at the confluence of the Hooghly River and the Bay of Bengal and connected with the mainland by a number of branches of the Hooghly River, with a number of arterial canals in between, through which the tidal waves flow. It consists mainly of flat land, with some low-lying areas. The soil is mainly alluvial and suitable for agricultural activities all year round.

In the southern part of the island, some areas are fully saline, but the rest of the area is conducive to agricultural operations. The rivers in this area are tidal in nature and are used for island navigation. These may be used as drainage and irrigational canals if lock gates are constructed, thereby extending agricultural operations to a vast area. Natural vegetation of this island consists of geon, babul, hental, etc. Jhaw, eucalyptus, sonajuri, khirish and krishnachura are planted by the side of the main roads. The island is mainly in the tropical zone with an annual rainfall of around 2,000 to 2,500 millimeters.

Dakshin Haradhanpur and Uttar Haradhanpur are villages on Sagar island that have a combined population of about 8,000 people. Agriculture is the main activity. Rice, pulses, oil seeds, vegetables and fruits are grown.

The villages cover approximately 1,000 acres, of which less than half have no access to irrigation facilities. The main irrigation source is a canal that is about 2.2 kilometers away from the villages. There are also small ponds that are used for cultivation. Other subsistence employment includes artisan trades like weaving, pottery and animal husbandry.

The primary language spoken in the villages is Bengali. Most of the community members do not attend school past the eighth grade, and female attendance drops sharply even before eighth grade.

Water collection and storage is the primary responsibility of the women who have to cater to the needs of the family in most difficult situations. Children also help, especially girl children who eventually drop out of school for this. In this area, the nearest water source is a two to three hour walk from most homes, and it is not always in working condition.



The community depends mainly on individual ponds for washing, cooking and bathing, and due to the virtual absence of latrines, everyone defecates in the open fields. Local quack doctors are the only recourse for health care, even during emergencies.

Located in the southern most tip of West Bengal these islands are continuously ravaged by floods and cyclones. Water scarcity coupled with high salinity make the drinking water crisis acute. Being a difficult, remote area, very little has been done in terms of upgrading existing water and sanitation infrastructure.

A water pipe line (unsafe for drinking) has been installed on the main road by the PHE, government of West Bengal.



Project Details: The proposed project envisages improved safe drinking water coverage in the two villages of **Dakshin (south) Haradhanpur and Uttar (north) Haradhanpur**. The main objective of the project will be to improve the health status of the deprived rural community in these villages. Thus, special emphasis will be given to preventive community health, in order to ensure improvement in the quality of life. Health awareness and hygiene training will be an integral part of this project.

The following is a brief outline of activities to be undertaken to achieve the overall objectives of the project.

- Installation of 7 deep tube wells for provision of safe drinking water, at the nearest point of the habitants, so that no woman or child is required to travel more than 200 meters to fetch drinking water.

- Formation of a water-user committee (or WATSAN i.e., water/sanitation committee) at each installation site, which will be responsible for overall management and maintenance of the water source.
- These WATSAN committees will collect subscriptions from the users to build up a water sources maintenance fund. The accumulated fund will be kept in a recognized financial institution (i.e., a bank or post office) as a reserve to meet the expenses for upkeep and proper maintenance of the water source.
- Provide handpump maintenance training to the local youth and women for periodic preventive maintenance and repairs of the sources, as and when required.
- Distribute simple tools to the trained people for maintenance of the sources.
- Establish a bank of spare parts within the village. The WATSAN committee will replenish parts used using their maintenance funds.
- Sensitize the local communities about safe water in relation to health using a variety of techniques and communication tools which will be suggested by Water For People after training the organization representatives.
- The local administration (i.e., the Panchayat) will play an active role from the planning to execution stage of the program. It will also lend support by mobilizing government resources and help in creating structures for future maintenance of the project.

Beneficiaries: 2,100



Project Number: IND 06040

Name of Project: Manikjore School Water, Sanitation and Health Project

Partner Organization: Manikjore Seva Sangha (MSS)

Community Description: Manikjore is located in the Gangetic plains. Seventy percent of the population are farmers. Agriculture is dependent primarily on rainfall, and there is very little provision of alternative irrigation. The area is prone to frequent drought and flooding.

The primary language spoken is Bengali. There is widespread illiteracy among women. School dropout is a common feature, especially among girls after the eighth grade.

Water collection and storage is the primary responsibility of the women who have to cater to the needs of the family in most difficult situations. Children also help, especially girl children who eventually drop out of school for this.

The community depends mainly on individual ponds for washing, cooking and bathing. Open defecation is the usual practice for most, especially the children. In some families women use makeshift toilets, mainly for privacy reasons, rather than as hygienic practices. Local quack doctors are the only recourse for health care, even during emergencies.



Community Needs: The primary sources of water in this area are the ponds and canals. Villagers use pond water for all washing activities and for cooking purposes. In summer and during the monsoons they also drink from the ponds, as the nearby tubewells are too far and difficult to access. This makes ailments like diarrhea, gastroenteritis and hepatitis common to the area, sometimes claiming lives in these villages.

Project Details: The following is a brief outline of activities to be undertaken to achieve the overall objectives of the project.

1. Construction of two sanitary blocks along with safe water sources for two schools in two villages located in two blocks of Purba Medinipur District in West Bengal.

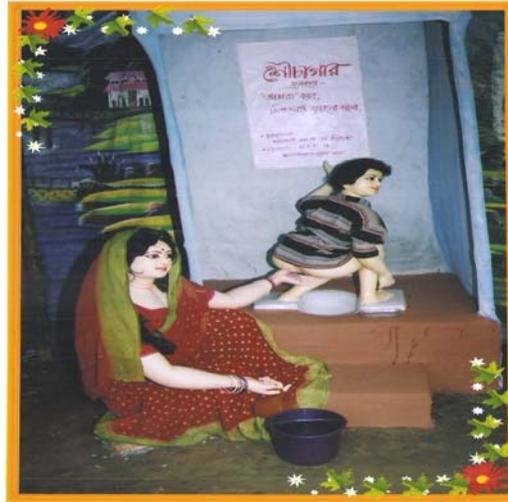
- In each school, a sanitary block will be constructed consisting of seven urinals (four for the girls and three for the boys) and two latrines (one each for boys and girls) in each school. Along with this, there will be two hand-washing stations in each of the sanitary blocks.
 - In both schools, water facilities will be provided and water will be lifted by a submersible pump into an overhead tank for distribution to the sanitary block and the drinking water station.
2. Upgrading the drinking water facilities of one school in one village in Purba Medinipur, West Bengal.
 - In one school, a water source will be created and will be uplifted by submersible pump and then distributed through pipelines in the existing sanitary block, which is already present.
 3. Health and hygiene education in six schools (three where the above infrastructure will be provided and another three schools in the neighboring schools).
 4. Water and Sanitation Committees comprised of teachers and students will be formed in all of the six schools and they will be trained and remain responsible for overall management and maintenance of the infrastructure created and the hygiene education programs.



Project Outline

- a. An orientation program will be organized by Water For People–India for the project staff and the key representatives of the NGO on the project objectives, and an operation strategy with a time frame will be developed.
- b. Two trainings of trainers will be organized for the school teachers (three from each school) and three NGO representatives – one at the start of the project and another as a refresher during the project period, on the use of the health and hygiene manual developed by Water For People–India.
- c. The school children will receive education on safe water, sanitation and health issues by the trained school teachers and a representative of Manikjore. Manikjore will coordinate

this health education program in all six of the schools, for which the project staff will be present during sessions in first few months, and conduct the sessions along with the teachers.



- d. The WATSAN Committee in each school will collect subscriptions from the students on an annual basis, at a nominal rate This will be put into a fund that will be deposited into a public financial institution (i.e., a bank or post office) to pay for expenses for maintenance and cleaning of existing toilets and any new infrastructure that is created.
- e. Members of the local administration will be sensitized about school health and sanitation programs to elicit their support for smooth functioning and long-term sustainability of the initiatives.
- f. All through the year various programs like quiz, sit and draw, poster presentations, etc., will be organized in these schools to create interest among the student groups.
- g. In addition to the new infrastructures, all schools will be motivated to upgrade the existing facilities for water and sanitation and to ensure proper maintenance.
- h. Manikjore will regularly monitor the performance in each school and submit detailed reports to Water For People–India. At the end of the project period, they will be expected to judge the school performances and rank them accordingly.
- i. Planning and execution of all construction activities will be done in consultation with the Water For People–India office and the school authorities following the time frame decided and agreed upon by all stakeholders of the project.
- j. Manikjore will send monthly as well as quarterly program and financial reports to the Water For People–India office with updated information.

Beneficiaries: 3,200

Project Number: IND 06068

Name of Project: BESU Arsenic Removal Project

Partner Organization: Bengal Engineering and Science University

Community Description: The project is located in the following two districts of the State of West Bengal:

- ***Chakdaha and Ranaghat-II Blocks of Nadia District***
- ***Gaighata, Habra-I and Habra-II Blocks of North 24 Parganas District***

The above Blocks have been identified to be arsenic-affected by the state government and BESU has worked extensively in the area for the last 10 years. These districts are located in the Gangetic Plains. Seventy percent of the population are farmers, and the main crop is paddy. Crops are primarily dependent on rainfall. There is inadequate provision of irrigation as an alternative.



Informal networks of community-based organizations are present in most of the areas proposed for the installations. In some of the villages there are village development committees, local youth clubs or market committees.

Most of the communities depend mainly on groundwater for drinking, cooking and washing, and often use pond water for bathing. Most of the households in the area have pit latrines, but the superstructures are often inadequate. In many families, women use makeshift toilets, mainly for privacy reasons, rather than as a hygienic practice. Local quack doctors are generally the only recourse for health care, even during emergencies.

The language spoken in the area is Bengali. Widespread illiteracy prevails among the women in these areas. The school dropout rate is high, especially for girls after class VIII.

The task of water collection for the family is taken care of primarily by the women. Girl children often help their mothers with this task.

Community Needs: According to government estimates, 7.5 million people residing in 36 community-development blocks (6,828 square kilometers) of these two districts are drinking arsenic-contaminated water. Arsenic toxicity causes many fatalities in these districts. Having arsenic-free water will not only save people from symptoms of arsenicosis; but will also gradually improve the health conditions of the patients currently suffering from arsenicosis.

Project Details: The objective of the project is to provide arsenic-free water to people in arsenic-prone districts of West Bengal, India by arranging for appropriate and sustainable treatment of contaminated water at village handpumps.

Arsenic removal filters will be fitted with handpumps that require no electricity or chemical dosing and are very simple to operate and maintain, making them suitable for people in rural settings. They will provide a quick and simple solution to the problem of arsenic-contaminated drinking (and cooking) water in remote villages. Sustainability, both institutional and financial, is another unique feature. Institutional sustainability will be facilitated by the formation of water committees and locally trained field supervisors. Financial sustainability will be ensured by collection of a water tariff from each user family.

The arsenic mitigation project not only attempts to shift villagers' use of unsafe water sources to treated water supplies, but also to pay for the cost to operate and maintain the new system. Given the socio-economic status of the populations and the fact that water had historically been provided to the public free of cost, project implementation required that villagers understand the need for arsenic mitigation from a health standpoint and the costs and benefits of the arsenic removal project. An intensive mobilization campaign (involving community meetings and printed media) will be implemented in the villages to increase public awareness of the health problems associated with arsenic-contaminated water and this will also garner support for the installation of the filter and implementation of a water tariff. Community meetings will be convened to create an opportunity for the first formal, village-wide discussion of arsenic contamination of water. The arsenic removal project will be presented as an option for addressing local arsenic contamination and requirements for participation will be outlined. The desired objective is to support an AMAL filter unit scheme (to be installed) and public use of this water for cooking and drinking.

Decisions regarding operation and maintenance of the filters will be made by the water committees. A general meeting of all the users (tariff card holders) will be convened at the end of each year of operation, where an annual report (including income and expenditures) will be presented. Suggestions for improved operations and maintenance will be discussed.

Beneficiaries: 12,750 people



IND 06074, Ajoya School Water Supply, Sanitation and Hygiene Education Project



Name of partner	SARBODAY SANGHA
Name of project	Ajoya School Water Supply, Sanitation and Hygiene Education Project
Project community name	Ajoya, East Medinipur, West Bengal
Area description	<p>The project is located in three Blocks of Purba (East) Midnapore District of West Bengal, India. This is one of the poorest districts of the State where more than 70 percent of families depend on agriculture and fishing as their main livelihood. A large section of the poor work as daily wage laborers as many do not own any land, or do not own enough land to cultivate it. The villages are prone to frequent drought and flooding. The area can be termed under-developed in all respects, especially with regard to education and health. The dropout rate in schools is high at all levels and very few children reach high school. Lack of proper infrastructure for water and sanitation is one of the main reasons for the high dropout rates. Poor hygiene practices lead to poor health, especially among children, accounting for high mortality and morbidity rates.</p> <p>Bengali is the primary language.</p>
Type of project	School water, sanitation and hygiene project
Hardware components	<p>Tube wells and storage tanks will be installed in three high schools.</p> <p>Drinking water stations with multiple taps will be constructed along with hand-washing stations within the toilet blocks.</p> <p>Toilet blocks will have urinals and latrines with provision of a water system. The construction will provide separate structures for girls and boys to allow privacy.</p>
Software components	All project staff and volunteers will receive orientation training where a detailed plan of activities and responsibilities will be worked out.

	<p>Two to three meetings will be held with the school managing committee to discuss the program components and sustainability of the program. Details of the work plan and the final plan of action will be worked out jointly with the schools.</p> <p>A monitoring team will be formed and responsibilities will be drawn up.</p> <p>A two-day teacher training will be organized where four teachers from each school will be trained on how to conduct the hygiene education classes.</p> <p>All schools will be encouraged to form a health committee comprised of students of class VIII, the heads of the institutions and four trained teachers to oversee the school sanitation and hygiene programs. Four students of class VIII from each school will be trained to conduct the hygiene education program in other classes.</p>
Number of beneficiaries	
Total	
Water	3,254
Sanitation	3,254
Health	1,400
Indicate if the number of beneficiaries for any of the three groups are actually counting the same people	<p>Yes, Those receiving water also receive sanitation infrastructure. 440 students out of the 1,400 (for hygiene education) are among those receiving water and sanitation inputs as well.</p>



Creating Change in West Bengal



*Sudeb Manna, student of Class VII
Chakbhabani M.K.N. High School,
East Midnapore*

Chakbhabani M.K.N. High School of East Midnapore District is a school catering to students mostly from underdeveloped communities, burdened under poverty and deprivation. With the prevailing low literacy levels it is not surprising to see the poor level of hygiene in these communities. Use of pond water for drinking and cooking and open defecation are traditional habits that have been passed down and are considered most natural occurrences.

Coming from such a background, it is to be expected that children would not have much awareness or knowledge about unsafe water, sanitation, and hygiene and its impact on health.

Despite their good intentions the management of Chakbhabani School had not been able to provide safe drinking water and sanitary toilets to its students. The available funds barely kept the school building upright. It could not afford a water source for the children and for sanitation all the school had was a mud and brick built urinal, whose wastes flowed into a hole in the ground behind the structure. Toilets were unheard of and students resorted to open fields around the school. The school did not have even a boundary wall around its compound, which flows out into the adjacent village road and market place. Naturally the school compound has become an easy dumping ground for the garbage from the market place every day.

But things have changed in the past few months. In 2006, Chakbhabani High School approached Water For People–India’s local partner, Manikjore Seva Sangha, requesting the construction of a proper toilet at the school. But soon they realized that it was not just a toilet structure that they had agreed to partner to. The meetings with Water For People–India’s staff, the project workers and hygiene educators from the neighboring partner Sarbodoy Sangha involved much more. The school teachers and administration had to meet and decide on the site of the construction, design the structure and monitor the construction. They had to form a committee with the students and solicit their views about the proposed work in their schools.

Along with this came the training for the year-long hygiene education programs. The issues in the program were not new—who has not heard of washing hands to prevent illness? But the method of delivery and the interesting activities that backed up the classes drew more and more students into the class. Learning had become fun and all the other children the school wanted to be included in the program.

What followed as a result of a few months of hygiene sessions was amazing. Teachers and students jointly conducted awareness generation activities like painting and writing hygiene messages on the school walls, exhibitions, making clay models about improved hygiene practices etc. Within weeks the school had a different look and the students were now proud to belong to the school.

However, all this was inside the school. One problem still remained—they had no control over the ever-piling garbage from the market.

Sudeb Manna, a class VII student, had to cross over the pile of garbage twice every day. The stench made his stomach churn and his young mind revolted against the callousness of the shopkeepers who foiled all the efforts of the school to keep it clean.

One day on his way back home he decided that he had just about had enough. He walked up to a trader who sold baskets made of dried coconut leaves. Termed as 'jhuri' in Bengali, these are quite inexpensive and commonly available in West Bengal. Sudeb approached this trader, explained his plan of keeping the school compound clean and appealed to him to donate a few of these baskets. The sincerity in the boy's appeal moved the trader. He willingly donated the baskets. Sudeb placed these baskets at the edge of the school compound and went around the market appealing to every trader to throw their wastes in the baskets and not all over.

The changes were soon visible. Sudeb's classmates soon joined his venture and closely monitored the situation. When they found something dirtying their school environment they themselves picked up the broom and began sweeping and cleaning the school campus. All the garbage in the baskets, were also cleared periodically.

Impressed by the enthusiasm of the boys, a local Eco-Club has come forward to help and two garbage vats have now been installed within the school campus. The vats are cleaned every month. The market trader has promised the school a regular supply of baskets, free of cost, for as long as they need.

Sudeb's contribution to his school is commendable. He has proven that even one small effort can bring about big changes, if done with conviction. He is an example for other students of his school to emulate.



**Water For People—India
Country Strategy**

2007 – 2011

Final Draft

**Submitted for Consideration by the International Programs Committee
December 14, 2006**

Glossary

ARWSP	Accelerated Rural Water Sanitation Programme
BEC	Bengal Engineering College
BESUS	Bengal Engineering and Science University Shibpur
CAP	Comprehensive Action Plan
CPI—M	Communist Party of India—Marxist
CSO	Civil Society Organisations
DFID	Department for International Funding
GoWB	Government of West Bengal
GP	Gram Panchayat
IEC	Information Education Communication
IMF	International Monetary Fund
IT	Information Technology
KAP	Knowledge Attitude Practice
lpcd	Litres per capita per day
MDG	Millennium Development Goals
MNP	Minimum Needs Programme
MoWR	Ministry of Water Resources
NGO	Nongovernmental Organisation
NWRC	National Water Resource Council
O&M	Operation and Maintenance
PRA	Participatory Rural Appraisal
PRI	Panchayati Raj Institutions
PRSP	Poverty Reduction Strategy Paper
RSP	Rural Sanitation Programme
SWOT	Strength Weakness Opportunity Threat
TRYSEM	Training of Rural Youth for Self Employment
USA	United States of America
UT	Union Territory
VCHP	Volunteer Community Health Promoter

Contents

Section	Title	Page
	Introduction	1
1	Review of Water and Sanitation in India	2 – 4
1.1	Demographic, Economic and Socio-political Situation	2
1.2	Water Resources, Water and Sanitation Coverage and Challenges	2
1.3	Government Agencies	2
1.4	Policies and Working Methods	3
2	Water For People	4 – 6
2.1	Global Strategy	4
2.2	History in India	5
3	Review of Water and Sanitation in West Bengal	7 – 11
3.1	Demographic, Economic and Socio-political Situation	7
3.2	Sector Agencies	8
3.3	Geographic Divisions of West Bengal	9
3.4	Water Resources, Water and Sanitation Coverage and Challenges	10
4	Analysis of Options for Water For People in India	11 – 15
4.1	Options for Working in Partnerships	11
4.2	Options for Field Programmes	12
4.3	Options for Geographical Coverage of Field Programmes	13
4.4	Balance Between Water, Sanitation and Hygiene	14
4.5	Balance Between Peri-urban and Rural Work	14
5	Objectives of this Country Strategy	15 – 26
5.1	Building Sector Capacity	15
5.2	Field Programmes	19
5.2.1	Increase Access and Coverage to Improved Water Supply	21
5.2.2	Address Poor Sanitation	22
5.2.3	Contiguous Coverage Between Schools and Communities	22
5.2.4	Improve Hygiene Practices and Infrastructure	23
5.2.5	Increase Coverage of Arsenic-free Water	25
5.2.6	Broaden Technical Options	25
5.2.7	Enhance Community Involvement in Water and Sanitation Programmes	26
5.3	Advocacy and Policy Work	26
6	Finance	26 – 27
6.1	Indicative Annual Expenditure Budgets 2007-2011	26
6.2	Indicative Annual Income Budgets from Various Sources 2007-2011	27
7	Monitoring the Implementation of this Country Strategy	27 – 28
7.1	Monitoring and Reporting on the Work	27
7.2	Reviewing and Replacing This Strategy in Due Course	28

INDIA



WEST BENGAL



Introduction

Water For People is an international nongovernmental organisation (NGO) with its main office in Denver, Colorado USA. Its vision is a world where all people have access to safe drinking water and sanitation; a world where no one suffers or dies from a water- or sanitation-related disease. Water For People has been active in India since 1996, supporting arsenic-removal filter installations in West Bengal through a partnership with the Bengal Engineering and Science University-Shibpur (BESUS). Its programme in India, known as Water For People—India, passed through a transitional stage during 2005 and 2006 marked by changes in staff, governance arrangements, and the transition to a holistic programme to address integrated water and sanitation needs of the rural poor solely in West Bengal. At the same time, Water For People's main office has improved the clarity of strategic planning of its international programmes and introduced more stringent requirements for the standards to be followed by the management of each international programme.

These changes, both in India and at the main office, logically suggested that Water For People—India should prepare a country strategy for its work plan in West Bengal. This document has been developed during the period of May-December 2006 with this objective in mind.

This strategy was prepared through a participatory process led by the Water For People—India country coordinator, Rajashi Mukherjee. Internal stakeholders (Water For People—India staff) and external stakeholders (international and local NGOs and local Indian government officials) were involved throughout the process. This country strategy draws inspiration from the global Water For People Strategic Plan for 2007-2011. Water For People's main office staff and Board of Directors have also been involved at various stages.

The country strategy shows that Water For People—India will develop from being a small NGO supporting various individual projects to a significant player in the water sector in India with a coherent strategic work programme. The goals are set on the basis of a situation analysis of secondary information about the status of water and sanitation in West Bengal as well as primary data collected through surveys and participatory rural appraisal (PRA) exercises with select communities and local partners. The strategy paper also reflects findings from Water For People—India's operational presence in West Bengal after its first year and a half of operation.

This document will guide the work of Water For People—India during the time period 2007-2011. It is not a rigid blueprint, but a reasoned explanation of Water For People—India's principles and priorities with indications on how these may be implemented. Its principal audience is Water For People—India's own staff and actual or potential partner organisations, while its secondary audience is Water For People's Denver staff, Water For People—Canada, actual or potential donors, as well as Water For People's Board of Directors.

Water For People—India welcomes comments and suggestions about this document and its implementation.

1. Review of Water and Sanitation in India

1.1 Demographic, Economic and Socio-Political Situation

Ranked at 127 on the Human Development Index, India is a democracy of more than 1 billion people comprised of multiple ethnic groups, religions, languages and cultures, with an annual population growth rate of 1.8 percent. The country is organised into 28 states and 7 Union Territories differing considerably in terms of socio-economic development. Seventy-four percent of the total population live in rural areas or villages while the remaining 26 percent reside in urban towns and cities, spreading over 3,287,263 square kilometres. India has the fourth largest economy with a growth rate that is among the highest in the world and has established itself as a global leader in information technology. Since it gained independence from Britain almost 60 years ago, India has dramatically improved its literacy, health and life expectancy rates. However, despite the strides the country has taken in addressing poverty levels the gap between classes continues to widen.

1.2 Water Resources, Water and Sanitation Coverage and Challenges

Official figures show that between 69 to 74 percent of India's rural population take their drinking water from protected sources, leaving 26 to 31 percent of the population un-served. Statistics from the urban areas show that 91 to 93 percent of India's urban population has access to drinking water from protected sources.

Despite these seemingly high coverage levels, water quality problems abound throughout India as aquifers are undermined by high usage, poor management and increasing contamination. Water quality problems include:

- Fluoride (66 million people in 17 states are estimated to be at risk)
- Excess arsenic in groundwater (nearly 13.8 million people in 75 blocks are reported at risk)
- Varying iron levels
- Presence of nitrates and heavy metals
- Bacteriological contamination
- Salinity

Rural sanitation coverage is only approximately 20 percent throughout India, meaning the vast majority of Indians practice open defecation. In recent years, there have been efforts to install sanitation facilities in rural areas, but years of habit and deep-rooted prejudices have come in the way of these efforts. Absence of hygienic practices is the root cause for various water-related diseases and incidence of diarrhoeal cases. In addition to the health hazard, lack of sanitation facilities causes great inconvenience to people, particularly to women, in both rural and urban areas.

1.3 Government Agencies in India

The Ministry of Water Resources (MoWR), formed in 1985, is the government agency responsible for water in India. At the time of writing this country strategy, the MoWR was funding a total of 26 major water projects in West Bengal.

The National Water Resources Council (NWRC) adopted the National Water Policy in September 1987. The National Water Resources Board was constituted in September 1990 (with Secretary, Ministry of Water Resources, as Chairman, Chief Secretaries of all the states/UTs, Secretaries of concerned Union Ministers and Chairman, Central Water Commission, as members), in order to review the progress of implementation of the

stipulations of the National Water Policy, for reporting to the NWRC and also initiate effective measures for systematic development of the country's water resources.

The National Water Resources Council has adopted the revised National Water Policy as "National Water Policy – 2002" and passed a resolution to this effect in its fifth meeting held on April 1, 2002.

The Poverty Reduction Strategy Paper (PRSP) approach, initiated by the International Monetary Fund (IMF) and the World Bank in 1999, results in a comprehensive country-based strategy for poverty reduction. PRSPs describe a country's macro-economic, structural and social policies and programs to promote growth and reduce poverty, as well as associated external financing needs. PRSPs are prepared by governments through a participatory process involving civil society and development partners, including the World Bank and the IMF. They aim to provide the crucial link between national public actions, donor support, and the development outcomes needed to meet the United Nations' Millennium Development Goals (MDGs). A similar PRSP does not exist for India and there is no rank or priority for water and sanitation amongst all other development issues, which is problematic for the sector.

1.4 Policies and Working Methods

The government of India had set the objective to provide potable drinking water to all rural habitations in the country by the year 2004. The stipulated norms of supply would be 40 lpcd of safe drinking water within a walking distance of 1.6 kilometres or elevation difference of 100 metres in hilly areas, to be relaxed per field conditions applicable to arid, semi-arid and hilly areas. At least one hand pump/spot-source for every 250 people is to be provided.

The comprehensive action plan (CAP) prepared on the basis of information furnished by the state governments envisaged attaining this objective. The primary responsibility for providing drinking water and sanitation facilities in the country rests with the state governments, and more specifically, the local bodies in the urban areas.

Water supply and sanitation were added to the national agenda during the first five-year planning period (1951-1956), and progressively larger allocations have been made by the centre into state budgets in the various five year plans. However, not all such efforts have succeeded in achieving the set goals, and large sections of the country continue to remain outside the purview of clean water and hygienic sanitation facilities.

A new National Water Policy was adopted in 2002, according primacy to drinking water, as in the earlier policy. In line with the 73rd Constitutional Amendment, there is an increasing recognition that centralized, government controlled and supply-driven approaches need to be changed to more decentralised, people-centric and demand-responsive approaches. This has led to the revamping of the Accelerated Rural Water Sanitation Programme (ARWSP) and the inception of the Sector Reforms Programme. Launched in 1999, this major paradigm shift in thinking and policy incorporates the following principles:

- (a) Adoption of demand-responsive approaches based on empowerment, to ensure full participation in decision making, control, and management by communities,
- (b) Shifting the role of governments from direct service delivery to that of planning, policy formulation, monitoring and evaluation, and partial financial support, and
- (c) Partial capital cost sharing, in either cash or kind or both, and 100 percent user responsibility for operation and maintenance.

The Accelerated Rural Water Supply Programme (ARWSP) has also been expanded to initiate inter-sectoral linkages and will draw on resources of the Minimum Need Programme (MNP) to meet some of the operation and maintenance (O&M) costs and the Training of Rural Youth for Self Employment (TRYSEM) programme to impart training, so that trained manpower can be mobilised locally for the maintenance of the assets. Major repairs and replacement/rehabilitation projects will be allowed as Tenth Five-Year Plan schemes and the provision of adequate support will continue until all rural habitations are provided with satisfactory and sustainable options. The plan allots responsibility of O&M entirely to the Panchayati Raj Institutions (PRI) and user groups. However, it also concedes that the financial and administrative authority has not yet been devolved to the PRIs to the extent needed.

The government of India has been emphasizing the need for taking up community-based rural water supply programmes, and now has decided to open up the reform initiatives in the rural drinking water supply sector throughout the country. This programme is called Swajaldhara. The key elements are (i) demand driven and community participation approach; (ii) panchayats/communities to plan, implement, operate, maintain and manage all drinking water schemes; (iii) partial capital cost sharing by the communities up front in cash; (iv) full ownership of drinking water assets with Gram Panchayats; and (v) full operation and maintenance by the users/panchayats. (*Swajaldhara Programme, government of India*).

Likewise, keeping in view the relatively poor sanitation coverage and the experiences of the central government, the Rural Sanitation Programme (RSP) that came into being from April 1, 1999 advocates shifting from a high subsidy to a low subsidy regime that incorporates the following:

- (a) Increased household involvement and demand responsiveness
- (b) Provision for the promotion of a range of toilet options to promote increased affordability
- (c) Strong emphasis on information education and communication (IEC) and social marketing
- (d) Provision for stronger back-up systems such as trained masons and building materials through rural sanitary marts and production centers
- (e) School sanitation as an entry point for encouraging wider acceptance of sanitation by rural masses

Rural sanitation will not be restricted to construction of latrines only, but is being promoted as a total package consisting of safe handling of drinking water, scientific disposal of wastewater, safe disposal of human excreta including child excreta, solid waste management, domestic sanitation and food hygiene, personal hygiene and village sanitation.

2. Water For People

2.1 Global Strategy

Water for People supports locally sustainable drinking water, sanitation and health and hygiene interventions that improve the quality of life of vulnerable communities in developing countries.

Water For People abides by the following guiding principles:

- It believes in the dignity of all people and that access to safe drinking water and effective sanitation are basic human rights.

- It believes drinking water, sanitation and hygiene problems are most effectively solved using local resources. Local communities must be the driving force in all of its programmes to make sure solutions are sustainable.
- It believes in the power of partnerships. It searches out trusted partners that share its vision and work together to build long-term relationships based on trust.
- It keeps its promises and manages its resources effectively and efficiently.

Water For People's four overall goals by 2011 are the following:

- To grow to provide sustainable water and sanitation services to at least 1,000 new people per day
- To enhance and replicate its successful international programmes model to increase its impact within existing programme countries and double its programme countries from 5 to 10
- To develop its financial resources to support the rapid growth in its programmes, to achieve a 2011 annual revenue of \$12 million
- To strive to exceed a goal of 85 percent of revenue applied to international programmes and to be consistently ranked in the top tier of NGOs by independent third-party evaluators

This global strategy provides a common vision to which Water For People—India is wholly committed. Water For People—India's Country Strategy is designed to follow these guiding principles and to contribute to these overall goals.

2.2 History in India

Water for People began working in India in 1996 in partnership with Bengal Engineering and Science University—Shibpur, (BESUS), formerly known as Bengal Engineering College or BEC, to design and install domestic and wellhead arsenic-removal units in West Bengal. Activities in India began under the close guidance of Dr. Arun Deb, a former professor at BEC as well as a former member of the Water For People Board of Directors. In February 2005, two people were hired to start an office for Water For People—India. Subsequently the programme hired a technical officer and an accountant.

Both historically and strategically, Water For People has worked in close partnership with local communities and local governments and a range of nonprofit organisations to ensure sustainable access to safe drinking water and sanitation facilities. It has stressed the need for all stakeholders to have a clear understanding of the overall goals and objectives of the programme, and the differing roles and responsibilities that each partner should shoulder to ensure sustainable services at the community level.

As to governance, Water For People—India has a short but interesting history. Upon raising enough funds to start an official country program in March of 2005, Water For People U.S.A. investigated the best options for registering Water For People—India. Two options were presented: 1) Forming a trust with an Indian board of directors that could absorb funds from anywhere in the world and, 2) Forming a liaison office without a board of directors that could absorb funds solely from Water For People U.S.A. Water For People U.S.A. decided that it was critical for the program to have the capacity to absorb funding from sources outside of Water For People U.S.A., and thus chose the trust option. Within six months of operation, it was apparent that the lines of governance responsibility were not clear, which made it difficult to establish strategic policy control over the work of the country coordinator.

To reconcile the situation, Water For People U.S.A. and the board of trustees in India met in April and June of 2006 to resolve the ambiguous governance status by transforming the board of trustees into an advisory committee for Water For People—India. Water For

People—India applied for registration as a liaison office in March 2006 and has received two letters from the Reserve Bank of India that the application is in process. The application is presently with the Ministry of Finance, awaiting clearance from the Ministry of Home Affairs and three other ministries. However, this option still presents obstacles due to the strict parameters set by the Indian government regarding transfers of programmatic funding. As such, Water For People U.S.A. has been consulting an auditing firm in Mumbai, India to proceed with investigating alternative registration/governance possibilities. It is anticipated that this issue will be resolved by 2007.

What began as a small pilot project to remove arsenic from community wells in West Bengal is now a full-fledged programme. Water For People—India now supports:

- Approximately 20 communities per year with arsenic-removal filter installations. This means that every year over 6,000 people gain access to safe, clean, potable drinking water. Communities contribute for this service and raise funds for maintenance and upkeep of the water filters. Awareness building on safe practices and hygiene education accompany the filter installations, to ensure sustainability of the project interventions.
- Community-based water supply and sanitation projects addressing the needs of rural communities in the Sundarban Islands, which are among the most deprived and vulnerable regions of the State. Interventions have begun in two Blocks of South 24 Parganas District, and will spread over 15 villages in five Gram Panchayats in the coming five years.

By the end of 2006, about 81,275 people will be covered with access to safe drinking water through tubewells or other surface/rain water options, such that no home is more than 200 metres away from the water source and the number of people depending on a single drinking water source is reduced from 473 to no more than 250. Capacity-building exercises will enhance local skills to maintain the structures, raise contributions, manage their accounts and liaise with local government to ensure long-term sustainability of the water sources. The local government as well as the beneficiaries currently contribute approximately 10 percent of the total cost of the water structures. At present, only 21 percent of the households in these 15 villages are covered with sanitation.

- Thirty-four government high schools with an intensive hygiene education programme in eight blocks spread over two districts of West Bengal. Of these, six schools (totalling approximately 8,000 students) received toilet blocks, hand-washing and drinking-water stations. In each school, a water/health committee has been constituted comprised of teachers and student representatives and members of the school committees who coordinate activities promoting improved school environment and better habits amongst children. A school hygiene fund receives contributions from the parents and teachers annually and supports maintenance of water and sanitation structures in the school.

The following section focuses on the developmental challenges of West Bengal, followed by an overview of the strategies that Water For People—India will employ to address these challenges.

3. Review of Water and Sanitation in West Bengal

3.1 Demographic, Economic and Socio-Political Situation

West Bengal is the fourth most populous state in India with a population of over 80 million people recorded in 2001. Accounting for about 2.7 percent of India's total area (88,752 square kilometres) but about 7.8 percent of the country's population, this state ranks first in terms of population density with 904 people per square kilometer per the 2001 census. Situated in the eastern region of the country, the boundaries of the state are Nepal, Bhutan and the Indian state of Sikkim to the north, Goalpara District of Assam and Bangladesh to the east, Orissa and the Bay of Bengal to the south, and Bihar to the west.

About 72 percent of the people in West Bengal live in rural areas. The proportion of the population below the poverty line in 1999-2000 was 31.85 percent. Scheduled caste (18,452,555 people), scheduled tribes (4,406,794 people) and minorities, together account for more than half of the state population and constitute the three poorest groups in rural West Bengal.

A significant part of the state is relatively challenged economically and also tends to be less advanced in terms of human development. These include large parts of the six northern districts (Darjeeling, Jalpaiguri, Koch Behar, Malda, Uttar Dinajpur and Dakshin Dinajpur), the three western districts (Purulia, Bankura and Birbhum) and the Sundarbans area of the two 24 Parganas Districts in the south of the state.

Despite being located in the rich and fertile Indo-Gangetic region, West Bengal is one of the poorest states in terms of development indicators as indicated above. Large sections of the state's rural population and a considerably high number of people living in the urban areas do not have access to safe drinking water. Being one of the poorer and more densely populated states in the country, available resources are never enough to serve the rising millions in West Bengal. The state has made progress, but rising disparities have left more and more people outside the purview of the benefits of development. The most affected have been the rural poor (72 percent of the state's population) who for generations continue to lack access to basic amenities of dignified living. Disease rates are highest amongst this group, and lack of awareness about health and hygiene makes them potentially vulnerable to easily preventable and curable ailments like diarrhoea and polio.

In recent years, there has been a significant deterioration in the fiscal situation in West Bengal. The current revenue receipts of the government of West Bengal (GOWB) are inadequate to meet the state's developmental goals. The unfavourable fiscal position is squeezing out GOWB's pro-poor and developmental expenditures in recent years, and this is likely to threaten the progress of poverty reduction in the long term.

Kolkata, the capital of West Bengal, has a strong base of Indian communism as West Bengal has been ruled by the Communist Party of India—Marxist (CPI—M) dominated Left Front for three decades now, the world's longest-running democratically-elected Communist government. The city's economic recovery gathered momentum after economic reforms in India were introduced by the central government in the mid-1990s. Since 2000, information technology (IT) services have revitalized the city's stagnant economy. The city has also experienced a growth in the manufacturing sector. Following similar moves elsewhere in the country, the state government changed the city's official name from *Calcutta* to *Kolkata* in 2001

3.2 Sector Agencies

Multilateral and Bi-lateral Agencies

There are a number of multi and bi-lateral agencies operating development programmes in both urban and rural West Bengal. Projects for water and sanitation are usually part of integrated programmes targeting the poor and vulnerable. Many of these work closely or even via the local and central government, and others provide funds to local NGOs. However, as of yet, there is not a holistic programme in place that coordinates all these efforts, often allowing for duplication or repetition of unsustainable project interventions. The following is a list of some of the major multilateral agencies contributing to water and sanitation interventions in West Bengal:

- UK Department for International Development (DFID)
- Asian Development Bank (ADB)
- World Bank
- Australian Aid (AUSAID)
- USAID
- United Nations Development Programme (UNDP)
- United Nations Children's Fund (UNICEF)
- United Nations Refugee Agency (UNHCR)
- The Bay of Bengal Programme Inter -Governmental Organisation (BOBP-IGO)
- European Commission Food and Agriculture Organization (FAO)
- The Global Fund
- International Finance Corporation (IFC)
- OPEC Fund for International Development
- OPEC Fund Public Sector Lending to India

Civil Society Organisations

Despite a rich tradition of West Bengal Civil Society Organisations (CSOs) being very active around social culture and literary pursuits, until recently, the broad-based political organisation and the leftist movement allowed little space for growth of an independent civil society movement for pro-poor development. As a result, politics have dominated and shaped the development of civil society in every area. However, since the early to mid 1990s the institutional environment appears to be shifting from a total state domination of development activity to an acceptance of the contribution of other development actors, specifically for addressing poverty reduction.

The emerging government of West Bengal's readiness to engage with CSOs has resulted in constructive partnerships for delivery of development programmes with several government departments that have adopted the strategy of using CSOs as an extension of the government to reach the 'hard to reach,' diverse and widely spread out poor social groups (scheduled castes, scheduled tribes, minorities and women). However, in the current context of development in West Bengal, CSOs have limited engagement in substantive policymaking processes of the state. Further, only a trusted few NGOs engage, on a limited basis, in the state's policy-making process. This is partially due to the fact that traditionally NGOs have not seen themselves as change agents, but as implementers. It is also because capacity for strategic pro-poor policy advocacy is under-developed.

In West Bengal, the Districts with poor development indicators (one of them being the Sundarban Islands in South 24 Parganas) also have a very low density of CSOs. Existing organisations need to be strengthened in order that they may evolve as true representatives of the poor and marginalised. This would enable them to participate directly in the

development process and thereby create opportunities for making the local governance processes responsive to the development priorities and needs of the vulnerable.

3.3 Geographic Divisions of West Bengal

There are 18 districts in West Bengal divided into two major regions -- North Bengal and South Bengal.

North Bengal		South Bengal	
<ul style="list-style-type: none"> • Darjeeling • Jalpaiguri • Kooch Bihar • North Dinajpur 	<ul style="list-style-type: none"> • South Dinajpur • Malda • Murshidabad 	<ul style="list-style-type: none"> • Birbhum • Bardhaman • Nadia ** • North 24 Parganas • South 24 Parganas 	<ul style="list-style-type: none"> • East Medinipur • West Medinipur • Bankura • Purulia • Howrah, • Hugli
<p>**Names in bold indicate present operational Districts of Water For People—India</p>			

West Bengal is comprised of six distinct geographical landscapes:

1. **Darjeeling Himalayan Hill Region** – Situated on the northwestern side of the state, this area belongs to the eastern Himalaya range. Darjeeling District along with the Siliguri division comprises the entire region. The outset of the Hill Region juts abruptly up from the Terai Region sloping up from the south with the river Teesta dividing it into two parts.
2. **Terai Region** – Located at the base of the Himalayas, the Terai is a belt of marshy grassland and forests that begin from the Yamuna River in the west and extend all the way to the Brahmaputra River in the east. Above the Terai belt, lies the Bhabhar, a forested belt of rock, gravel, and soil eroded from the Himalayas, where the water table lies from 5 to 37 metres deep. The Terai zone lies below the Bhabhar, and is composed of alternate layers of clay and sand, with a high water table that creates many springs and wetlands.
3. **North Bengal Plains** – This region starts from the south of the Terai region and continues up to the left bank of the Ganges River. This geographical area contains the southern parts of Jalpaiguri and North Dinajpur Districts, and bars some extreme northern regions, South Dinajpur, Malda and Cooch Behar Districts.
4. **The Rarh Region** – This region intervenes between the western plateau, the highlands and the Ganges Delta. Portions of the Murshidabad, Birbhum, Bankura, Bardhaman and Purba Medinipur Districts constitute this region. The region is about 50 to 100 metres above sea level and is believed to have been created from the soil from the Deccan Plateau, explaining the predominance of red laterite soil. The silts of the soil are coarse, making it unsuitable for agriculture, as the alkalinity is high and the presence of organic material is comparatively low.
5. **Western Plateau** – These are the highlands that form the eastern border of the Chhotanagpur plateau. The soil here is mainly solid, hard, red laterite whose covers have mostly a thickness of a few metres but occasionally they can be much thicker. The districts covered by the plateau are Birbhum, Bankura, West Midnapur and part of Bardhaman and the main rivers are the Haldi, Rupnarayan, Damodar, Mayurakshi and Ajoya.
6. **Gangetic Plain** – This is an area about 220 miles (355 kilometres) wide along the Bay of Bengal and covered by the network of streams forming the mouths of the Ganga and Brahmaputra Rivers. The districts included in this region are Murshidabad, Nadia, North

24 Parganas and Hoogly as well as the Sundarban Coastal Region. The Sundarbans make up the world's largest mangrove ecosystem stretching across coastal India and Bangladesh over the northern part of the Bay of Bengal. A cluster of islands with an approximate area of 240 square metres (3,600 square kilometres), the Sundarbans form the largest block of littoral forests. There are thousands of streams, creeks, rivers and estuaries, and the area experiences a full monsoon season from June to October. The average annual rainfall is between 65 and 70 inches (165 and 178 centimetres). At high tide, the entire territory of the forest floats on water. There are no paths or walkways, and boats are the mode of all travel.

3.4 Water Resources, Water and Sanitation Coverage and Challenges in West Bengal

Access to water and sanitation varies across the State of West Bengal with wide intra-district disparities. Official statistics portray an optimistic situation with regard to water access, but ground realities indicate otherwise. Large sections of people, especially in the rural areas, have little or no access to clean, safe drinking water. In addition, eight out of 19 districts within West Bengal are arsenic ridden, making the existing water sources unsafe for human consumption. People resort to nearby ponds and wells for domestic consumption as well as the water needs of their livestock. It is not surprising that West Bengal shares one of the highest ranks in the number of people affected by water-related diseases every year.

The following table delineates areas of ground water pollution in the southern districts of West Bengal where Water For People—India has focused its efforts to date.

Pollutant	District	<u>Areas of occurrence within Districts</u>
Salinity	South 24 Parganas	Sundarban Region - Kakdwip, Diamond Harbour, Sagar, Pathar Pratima, Gosaba
	East Medinipur	Contai
Arsenic	South 24 Parganas	Baruipur, Lakshikantapur
	North 24 Parganas Nadia Murshidabad Malda	90 percent of the total area
	Hoogly Bardhaman Kolkata	Balagarh Purbosthali, Katwa Southern part of Kolkata
Flouride	Birbhum West Medinipur Bankura Purulia	Detailed report not yet available

The poor sanitation situation in West Bengal is also critical. The few facilities that do exist are under severe pressure and generally overused. Responsibility for maintenance is sometimes ambiguous leading to unclean toilets that are not maintained. Most families simply defecate in fields or in rivers and ponds that, as stated above, become a source of risk for communities. The absence of a water source near existing toilets further compounds the problem. In public places like markets and schools, toilets have temporary and weak superstructures or are often without doors, defeating the purpose of providing privacy for users and thus limiting their use. The absence of sanitation facilities in schools also contributes significantly to the drop-out rates of female students when they reach puberty. Thus, sanitation remains one of the biggest challenges in West Bengal. Government targets

of total sanitation coverage have shown improvements on paper but have not ensured the use of the toilets being installed.

Inadequate government resources are often stated as the reason for poor coverage of water and sanitation facilities in West Bengal. Lack of maintenance by the government authorities as well as lack of ownership by the user communities has only exacerbated the situation. Government apathy has translated into the following:

- Drinking water supply systems having outlived their life span or have become defunct
- Poor maintenance of hand pumps and power pump systems
- Sources drying up due to depletion of groundwater level
- Sources becoming quality-affected
- Insufficient emphasis on sanitation
- Lack of sanitation facilities
- No assurance that existing or newly installed toilets are being used or maintained
- Rejection of model being promoted by government

Progress in the water and sanitation sector in West Bengal is impeded by the following:

- Politicians see water as a short-term political tool to win popularity or votes and favour certain places or regions. They devise various funds and mechanisms that function separately from the mainstream government programme.
- Historically, people have depended on the government for maintenance. Recent changes in government policies have not been accompanied by adequate training and motivation of communities to exercise ownership and maintenance of water and sanitation services.
- Cultural and deep-rooted attitudinal practices often stand in the way of safe practices and adoption of improved technical options. Such beliefs have served to perpetuate age-old practices and have placed investments on household sanitation and hygiene low on the priority list. Government programmes for raising awareness are poorly designed and inappropriately delivered.
- Agencies offer communities a limited choice of technology and promote quick and cheap solutions, which have short-term impact, but are neither technically appropriate nor psychologically satisfying for the communities. In the absence of exposure and information about technical options, the communities do not make informed choices and are often viewed as stubborn and resistant to improvements by the change agents.
- Agencies working in the sector do not coordinate well with each other at the local level or with other relevant government departments to enable a systematic and holistic approach to address the needs of communities.

4. Analysis of Options for Water For People in West Bengal, India

4.1 Options for Working in Partnerships

Water For People's global strategy is to work through partners and not as a direct implementer. A partnership is a long-term relationship between two parties that may have different characteristics but treat each other as equals working together to achieve a common goal, unlike a contract which is a single transaction in which one entity undertakes to carry out specified work funded by another.

Under Water For People's global strategy, Water For People—India has the option to change some or all of its relationships from short-term contracts to long-term partnerships. Each partnership would achieve a long-term programme of field work, not just a single

project. Each would involve the commitment of Water For People—India to build the partner's capacity both in implementing the field programme and in supporting functions such as informing the public, training people, monitoring and evaluation, fundraising and advocacy. As Water For People—India will not be in India forever, the ultimate goal of the partnership is to grow the capacity of our local partners to implement sustainable water supply, sanitation and hygiene initiatives without the ongoing support of Water For People—India. Water For People—India therefore works to build the technical, programmatic, administrative/managerial and fundraising capacity of its local partners. The structure of a partnership aims to be 'horizontal' where one partner is not dominant or has more decision making power. This is based on the understanding that all partners bring capacity, ideas and vision to a partnership and as such, partners equally share program risks and successes.

4.2 Options for Geographical Coverage of Field Programmes

Water For People—India has the option to continue concentrating its developmental efforts in West Bengal over the period 2007-2011. The following are sound reasons to limit activities to one Indian state:

- 1) Water For People—India has a 10-year history of work and partnerships in West Bengal.
- 2) India is home to over 1 billion people and West Bengal has 80 million people alone. Therefore, it is essential that Water For People—India focus its resources for the next five years in just one state.
- 3) A large proportion of West Bengal's population live without the basic amenities of water and sanitation.
- 4) West Bengal has the largest number of districts that have been officially declared as arsenic affected and the ongoing arsenic removal programme offers a scope for expansion.

Choosing a project area within West Bengal is a challenging task as local situations and official statistics demand interventions in a wide spread of locations. Initially, the southern districts were selected which are characterised by three natural segments:

- The **first** where economic prosperity has been achieved through intensive agriculture, using groundwater to the maximum extent possible. In many regions of this segment no further exploitation of groundwater is possible.
- The **second**, comprised of the western districts, are dry, rocky, undulating laterite regions, allowing a high run-off rate of rainwater, and very low groundwater recharge. It is a drought-prone region where boring tubewells for drinking water is generally difficult and expensive. This region is in urgent need of enhancement of groundwater reserves and raising the aquifer levels, through water conservation, greater percolation and suitable recharge of groundwater.
- The **third** segment consists of the coastal districts, which have benefited from very good precipitation over the years, but due to the presence of numerous rivers and rivulets having proximate access to the Bay of Bengal, rainwater easily gets into the river system and ultimately the ocean, making the water unfit for human consumption.

In its first year of operation, community-level interventions were initiated in the saline coastal belt of the Sundarban Islands in South 24 Parganas District for the following reasons:

- The region is characterised by a difficult terrain frequented by floods and cyclones.
- The area has been neglected by government and nongovernmental agencies and shares the lowest rank in terms of standard development indicators in the state.

- Water For People's initial intervention in the area has received an overwhelming response from the communities and local Panchayat.
- There are at least three promising local NGOs working in this area with which Water For People—India could partner on a long-term basis.

The table below outlines the areas within West Bengal where Water For People—India currently works.

**OPERATIONAL AREAS OF WATER FOR PEOPLE—INDIA
PRESENT AND PROPOSED**

DISTRICT IN WEST BENGAL	Government Records**			
	Total population (2001)	Population density	Female literacy	Population with access to adequate sanitation
Present and future Water For People—India operational areas:				
A. Water and sanitation projects				
South 24 Parganas	6,909,015	694	59.73	11.3
Medinipur	9,638,473	685	64.63	9.1
B. Arsenic removal filters installed				
Nadia*	4,603,756	1,172	60.6	25.4
North 24 Parganas*	8,930,295	2,181	72.13	39.4
C. Additional proposed needy areas				
Purulia	2,535,233	405	37.15	8.1
Bankura	3,191,822	464	49.8	10.0
Jalpaiguri	3,403,204	547	52.9	17.7
Kolkata (urban)	4,580,554	24,760	77.5	75.2
*Also Water For People proposed areas				
** Source: Human Development Report, 2004				

Since the inception of Water For People—India's community and school programs, the geographic selection of interventions has been focused, allowing for a natural transition to expand its work within three specific areas. As Water For People—India has invested a significant amount of time and energy to create partnerships in these areas it is logical for the organisation to limit its geographic focus to one southern district. It is also strategic to continue support for arsenic removal programmes in the two districts where the incidence of arsenic contamination is most prevalent. In this way, Water For People—India will be able to maximize its efforts to facilitate 100 percent coverage over time and to build the capacity of the NGOs and the local Panchayats to coordinate support for community, school and arsenic removal programs. Depending on the availability of resources, other drought prone and hilly regions of the state may be added in subsequent years.

4.3 Options for Field Programmes

In order to develop a logical framework for this country strategy, an extensive baseline study and sector strength, weakness, opportunity, threat SWOT) analysis was initiated in mid-2006

by Water For People—India and its partner organisations. The exercise was conducted in select locations of Water For People—India's operational areas to assess the potential for holistic and long-term interventions. The study combined a range of quantitative and qualitative techniques to arrive at an information baseline for existing water and sanitation coverage and needs. It includes data on health and infrastructure facilities, resource mapping (including social capital), knowledge, attitude, practice (KAP) related to water and sanitation, and information related to current planned government and nongovernmental programs.

The results of this work have strengthened Water For People—India's understanding of the issues and needs that it will address as part of its programme, and will allow the programme to make some key strategic decisions on where and how it should work. The information will be updated periodically as the programmes in the field evolve.

As most of the southern region of West Bengal is created by the natural process of siltation of soil drawn by the river system, the water available in the upper aquifer of the sub-soil is highly saline and unfit for human consumption without costly treatment. Avenues for surface water treatment and storage need to be explored as an alternative to relying on groundwater aquifers, which is both difficult and expensive to exploit. Water For People—India is aware of the fact that it cannot rely solely on tubewell implementation for long-term sustainability.

Water For People—India would like to consider supporting continued community level interventions that are complemented by intensive water, sanitation and hygiene education programmes in local schools, with the following objectives:

- Providing better infrastructure in local schools to promote a healthier environment for students
- Promoting hygienic habits amongst children and using them as change agents to motivate their families to adopt better practices
- Selecting responsive communities where demand is generated through the children for community-level interventions in water and sanitation.

4.4 Balance between Water, Sanitation and Hygiene

Water For People—India recognises that the major benefits to people's health and quality of life come from a combination of improved water, sanitation and hygiene and thus, has consistently aimed to support holistic interventions. However, as communities differ in terms of need, priorities and resources, entry-level interventions are based on local needs and may include a single component or all three pieces. Another determining factor is the capacity of the partner NGOs to execute the proposed work. As a capacity-building organisation, Water For People—India intends to strengthen local organisations as well as local government so that they are able to plan and execute water, sanitation and hygiene education programmes independently. The strategic planning process gives Water For People—India the opportunity to ensure that water, sanitation and hygiene are equitably balanced in all of its work.

4.5 Balance between Peri-urban and Rural Work

Today, the country's population living in cities is approximately 285 million and this figure is on the rise. It is expected that approximately half of India's population will be living in cities by the year 2030. In India, cities contribute almost 60 percent of India's GDP. With better infrastructure and more city services economic growth could be even higher and more employment opportunities created for urban residents (USAID, August 4, 2006). As such, Water For People—India will not be able to avoid engaging in urban water and sanitation issues.

Water For People—India hopes to begin work in urban locations in 2008. There are many large funding and aid agencies working for urban infrastructure development in Kolkata and surrounding municipal areas. Water For People—India intends to work in tandem with these agencies and has begun dialogue with some of them to explore possible areas of collaboration, with a focus on Water For People—India helping where it can. Water For People—India does not foresee managing large urban infrastructure projects as this is beyond its capacity. Rather, the program will work to ensure that large infrastructure improvements benefit the poor, have impacts in areas of hygiene, and include areas of the cities that are generally neglected.

5. Objectives of this Country Strategy

5.1 Building Sector Capacity

Water for People—India is committed to partnerships with Indian NGOs, state and local governmental institutions, local and state universities, local private sector and local communities in West Bengal. Although the community beneficiaries belong to the most deprived in the state, strategic interventions will be made to ensure their participation is both in cash and kind, in order to instil a sense of ownership among all community members and to enhance the prospects for project sustainability. Water For People—India will strive to mainstream all its activities with the overall policies and programmes of the country, eliciting maximum mobilisation of resources from local and national government bodies. Water For People—India views itself as a catalyst and a capacity building organisation, whose aim will be to create comprehensive and replicable models for improved water and sanitation facilities for the most deprived people within its geographic scope.

Water For People—India will focus its efforts on building its own capacity as well as the capacity of the following water and sanitation sector agencies:

- Local Indian NGOs
- Local universities
- Local government
- Local primary and secondary schools
- Local private sector

In order to be effective, Water For People—India requires the following staff and capacity in place:

- Country coordinator – Responsible for overall programme execution and finance, managing internal and external capacity building, sector coordination, government relations,
- Office coordinator – Responsible for all office management, reporting, documentation
- Programme coordinator – Responsible for coordinating field programmes
- Hygiene coordinator – Responsible for coordinating hygiene education programmes
- Accountant – Responsible for maintaining transparent and accurate accounts for Water For People—India

At the time of writing the strategy, all but the office coordinator were in place.

Local NGOs

Local NGOs, working in remote locations, with a good presence in the local communities and a proven track record, are some of the qualities Water For People—India looks for before deciding on a partnership arrangement. Preliminary information about the NGO is collected and a field visit made to check out the degree of need in the proposed area and

the ability of the NGO to cater to these needs. Water For People—India insists on contributions from the communities and the NGOs, with the amount varying depending on the situation. Water For People—India recognises that the local NGOs will require support to build their capacity to ensure future independence and empower them to mobilise other smaller NGOs in the operational areas into a network of local agencies. As such, Water For People—India will support building skills of local NGOs in the following areas: management/finance, fundraising, community software (community management, committee formation), demand creation, sanitation support, health and hygiene focused on behaviour change, and basic engineering.

During the years 2005 and 2006, eight such NGOs were supported through partnerships for the projects listed in the table below:

Name of Organisation	Location of the Project	Type of Project	People Served
<u>Community drinking water and sanitation projects</u>			
Rural Aid	South 24 Parganas	Community drinking water, hygiene education, community pay and use toilet	3,250
Sundarban Social Development Centre	South 24 Parganas	Community drinking water, hygiene education	2,750
Sabuj Sangha	South 24 Parganas	Community drinking water, hygiene education	2,250
		Sub - total	8,250
<u>School sanitation and drinking water projects</u>			
Sarboday Sangha	Medinapore	School drinking water, sanitation, hygiene education	3,700
Satmonisha Santi Sangha	South 24 Parganas	School drinking water, sanitation, hygiene education	2,370
Nishtha	South 24 Parganas	School drinking water, sanitation, hygiene education	4,225
Manekjore Seva Sangha	Medinapore	School drinking water, sanitation, hygiene education	3,934
		Sub total	14,229
<u>Arsenic mitigation programme:</u>			
Bengal Engineering and Science University Shibpur	Nadia, North 24 Parganas	22 Arsenic removal filter installations during 2005 – 2006	11,500
		TOTAL	25,729

Water For People—India would like to continue working with all eight local NGO partners until the end of 2008 and focus on at least four key NGOs (in the projected operational areas) for the duration of this country strategy.

Local Universities

Water For People's partnership in the arsenic mitigation programme, with BESUS dates back a decade. BESUS has supported the programme with systematic technological upgrades of arsenic removal filters and has monitored the functionality of all 117 filters installed to date. BESUS is presently working out its own strategy for partnership in the arsenic programme, and along with Water For People—India, hopes to set up an independent service agency that will take over the majority of the operation and

maintenance responsibilities that BESUS currently executes. Water For People—India's role will be to support BESUS in its capacity to scale up and replicate its program so that it can increase its service exponentially. All necessary training and capacity building of the agency will be done jointly by Water For People—India and BESUS in such a manner that the transition is smooth, causing minimum inconvenience to the end users.

Local Government

As stated earlier, Indian government roles and responsibilities are shifting. The jurisdiction of the government is moving from direct service delivery to indirect support to communities. The primary responsibility for water and sanitation will no longer be national or state government, but rather local government. Areas of local government responsibility include planning, sector coordination, project supervision, reporting, policy formulation and enforcement, monitoring, and partial financial support. Water For People—India will support building the capacity of the local government in each of these areas to ensure sustainable service for the communities.

The majority of Water For People—India supported interventions in the next five years will focus on three blocks within one district of West Bengal. Hence, Water For People will liaise with the block level administration and work to mainstream its activities with them. Under each block are the Gram Panchayats (GPs), assemblies of local government representatives. Micro plans for water, sanitation and hygiene promotion interventions, involving the communities and the partner NGOs, will be drawn up for the following six Gram Panchayats:

Block	Gram Panchayat	Partner NGO	Village	Total Population	
Pathar Pratima	1. Banashyam nagar	SSDC	Gangapur	2,908	
	2. G-Plot		Krishnadaspur	2,414	
			Satyadaspur	3,081	
			Daspur	500	
			Sub total	8,903	
	3. Achintanagar	Sabuj Sangha	Pashim Sripati Nagar	5,835	
			Purba Sripatinagar	3,587	
			Achintanagar	5,230	
			Kamdevpur	2,703	
			Bishnupur	2,202	
		Laksmipur	3,038		
		Sub total	22,595		
Sagar	4. Dashpara - Sumatinagar	Rural Aid	Bankinnagar	3,367	
			Sumatinagar	4,123	
			Mritunjoynagar	2,785	
			Uttar Haradhanpur	3,500	
			Dakshin Haradhanpur	4,500	
		Sub total	18,275		
Bishnupur 1	5. Julpia	Nishtha	Pirkhali	2,385	
			Hanta	1,265	
			Panarala	1,200	
	6. Andharmanik			Paikhala	1,180
				Kolmikhali	2,363
				Sub total	8,393
			Total	58,166	

The challenge will be to support efforts towards more decentralisation that will:

- Build local government capacity to plan and coordinate activities in their areas of jurisdiction
- Support local government efforts in areas of monitoring and evaluation
- Enhance the transparency and amount of money local government allocates to water supply and sanitation by using Water For People—India finance as a leverage on these funds

The government of West Bengal has considerable responsibility for water supply and sanitation, including but not limited to issues of finance, ongoing maintenance support, planning and quality control. Government input is weak in many of these areas. As such, Water For People—India will work with local government GPs to do the following:

- Increase coverage in their areas of jurisdiction
- Reduce down-times on broken water points (for reasons for which they are responsible) to less than two days
- Enhance coordination and planning in their areas
- Ensure that communities receive improved water supplies and sanitation facilities, acceptable per government standards

Local Primary, Secondary and High Schools

To date, Water For People—India has initiated hygiene education in 34 high schools and infrastructural improvement in water and sanitation in six of these high schools in two districts. By 2008, Water For People—India hopes to provide new or upgraded water and sanitation facilities to all 34 schools to complement the hygiene education program that each school has integrated into its curriculum. At least three years of concerted inputs for hygiene promotion will be done in one or two classes in each of these schools. School teachers receive innovative training to disseminate hygiene messages and representatives of students and teachers form committees to ensure that hygiene education is translated into action and that contributions are raised to facilitate proper upkeep of the structures created.

The government of West Bengal has recently introduced a subject on environmental education in the syllabus of classes 6 through 10 that covers several issues on water, sanitation and hygienic practices. Future Water For People—India school programmes will aim to complement/supplement the government's efforts. This has meant a change in strategy of Water For People—India's school programmes and in the coming years its programme will be extended to more students in a single school and will be concentrated in one block of South 24 Parganas District. Additionally, all schools located in the regions where community programmes are operational, will be covered with drinking water and sanitation facilities and imparted education in hygiene practices.

Local Private Sector

Sustainable water supply and sanitation will only occur if the private sector is strong enough to provide materials, spare parts and technical expertise to help communities when problems emerge that they are unable to resolve themselves. As such, Water For People—India will support building local private sector capacity in the following areas: drilling, hand pump installation, quality control, budgeting, stock issues as well as business planning and management to ensure that a vibrant private sector is in place to do the following:

- Provide critical spare parts to communities when they are required at a cost that allows the private sector to profit reasonably, and ensures that all poor communities can afford critical spare parts.
- Support sanitation development long after "sanitation projects" are completed. This will require a sustainable sanitation service that allows people without sanitation to access latrines.
- Provide critical technical support to communities ensuring that water and sanitation investments are sustained.

5.2 Field Programmes

Strategically, it is important for Water For People—India to concentrate its efforts in one state (West Bengal) and focused areas within that state in order to demonstrate that this approach to water and sanitation challenges in India is sustainable, scalable and replicable.

In the years 2007-2011, Water For People—India envisages continuous work in the following areas:

Community Drinking Water and Sanitation Programs

2007 – 2011 – South 24 Parganas District

- One district
 - South 24 Parganas
- Three blocks

- Pathar Pratima – Sabuj Sangha and Sundarban Social Development Centre (NGOs)
- Sagar – Rural Aid (NGO)
- Bishnupur 1 – Nishtha (NGO)
- Six Gram Panchayats (listed above)
- 20 villages (approx. 58,166 people)
- Four partner NGOs (Sabuj Sangha, SSDC, Rural Aid, Nishtha)

School Drinking Water and Sanitation Programs

The goal for 2007 - 2008 will be to reach the following:

- Two districts
 - South 24 Parganas (to continue after 2008)
 - East Medinipur
- Eight blocks
 - Diamond Harbour 2
 - Baruipur
 - Bishnupur 1 (to continue after 2008)
 - Khejuri 1
 - Khejuri 2
 - Nandigram
 - Bhagabanpur
 - Patashpur
- 34 (30 percent) of 154 government high schools (in the eight blocks) and an additional three schools in Bishnupur 1 (approximately 3,000 students)
- Sanitary blocks with toilets and drinking water and hand-washing stations for approximately 38,000 students
- Hygiene education in classes 7 and 8 to approximately 12,000 students in 2007 – 2008 in 34 high schools that includes an additional 500 students for 2008 in Baruipur
- Four partner NGOs

During 2009 – 2011 school programmes will include:

- One district
 - South 24 Parganas (to continue after 2008)
- Three blocks
 - Pathar Pratima
 - Sagar
 - Bishnupur 1
- Six Gram Panchayats
- 26 primary schools (6,750 students)
- 28 secondary and high schools (23,500 students)
- 30,250 students
- Sanitary blocks with toilets and drinking water and hand-washing stations in at least 80 percent of these primary and high schools
- Over the period of three years, hygiene education will be imparted to approximately 6,750 new students of primary schools and approximately 10,000 new students in secondary and high schools
- Four partner NGOs

Arsenic Removal Community Drinking Water Programs

During 2007 – 2011 arsenic removal programmes will include:

- Two districts
 - North 24 Parganas
 - Nadia District
- Five blocks
 - Habra 1
 - Habra 2
 - Gaighata
 - Chakda
 - Ranaghat 2
- 100,000 people
- 50 new filters per year (from 2008 onwards)

Water For People—India's ultimate goal is to make concentrated and holistic interventions, to bring about noticeable differences in the quality of life for people who live in these communities. As such, its field programmes will focus on the objectives listed from 5.2.1 – 5.2.7.

5.2.1 Increase Access and Coverage to Improved Water Supply

The government of India regulations for sufficient access to water are as follows:

- a) Maximum of 50 families or 250 people per tubewell
- b) Tubewells located within a distance of 1.6 kilometres from residences
- c) Provision for at least 40 litres of safe drinking water per capita per day

This would be reasonable if the tubewells were both located at a central convenient point in the village and well-maintained and functioning properly. However, in the regions where Water For People—India proposes to work, neither of these criteria is applicable. Limited access to water sources increases the time needed for collection, forcing women to travel great distances and young girls to drop out of school to help with collection. Fewer sources mean increased pressure on a single source, leading to frequent breakdowns, with the repair time averaging nine to 10 days for small repairs and much longer for major breakdowns.

When the hand pumps are out of commission, the immediate alternative water sources are ponds, which are heavily polluted. During the summer months, most ponds dry up and in areas where there are multiple cycles of agriculture, the groundwater recedes even faster. In saline regions, the heavy rains cause flooding accompanied by saline water from the sea. Many parts of West Bengal, both rural and urban, are prone to flooding. For months, the areas remain waterlogged and ponds and fields overflow into people's homes, bringing with them water filled with numerous pollutants, including pesticides used in agriculture. Alternatively, during the summer months, in the hills and dry districts the difficult topographic conditions make the scarcity more severe. Water-related diseases and skin infections become a regular occurrence in such communities.

- To address this problem, Water For People—India will support the increase in sustainable coverage of safe water from 60 percent to 100 percent in 20 villages of West Bengal over five years, through the provision of 48 tubewells (water for an additional 12,000 people), rainwater harvesting, piped water supply and pond water purification programmes (for the remaining unserved population). Ultimately, the entire population of approximately 58,166 people will be covered with access to safe water through tubewells or other surface/rainwater options

through this intervention with sustainable systems in place for operation, maintenance and finance for water supply infrastructure.

- Community interventions will include infrastructural inputs for water and sanitation at an estimated per capita cost of \$18.50 (according to 2006 calculations). These will be complemented with village level hygiene education programmes.

5.2.2 Address Poor Sanitation

In a country where, despite all government and private efforts, 80 percent of households are outside the purview of hygienic sanitation coverage, it is imperative that Water For People—India address this challenge.

The total requirement for toilets in the operational area of 20 villages is estimated to be 8,620 based on the current population in the villages. During 2007-2011 Water For People—India aims to cover at least 90 percent of the required amount. This means that the five-year intervention will raise the existing coverage of 20 percent to about 93 percent by facilitating the following:

- Provision for 7,100 household toilets for 39,000 people through direct financial support
- Provision for an additional 400 household toilets for 2,200 people through a loan recovery system (from households provided with loans to install toilets in the initial years)
- Sustainable systems in place for operation, maintenance and finance for sanitation infrastructure

5.2.3 Contiguous Coverage between Schools and Communities

Community-based programs will build on Water For People—India's successes with school sanitation and hygiene education. It is Water For People—India's intention that the children are given complete coverage of safe drinking water and sanitation at home as well as in the school.

Presently the school programme is restricted to 34 government high schools (approximately 38,000 students are enrolled) in eight blocks spread over two districts. Water For People—India envisages supporting these schools with provision for drinking water, toilet and hand-washing facilities along with hygiene education for another two years.

As children from operational GPs also enrol in schools outside their GPs but within the same block, high schools in all the three blocks of South 24 Parganas will be covered with improved water and sanitation facilities and hygiene education. Thus, Water For People—India plans to facilitate hygiene education coverage at all educational institutions, i.e., primary, secondary and high schools, in all the GPs, in the areas where community programmes will be operated. The objective of this is twofold:

1) Children receiving education in improved hygiene practices will pass on the messages to their families, thereby creating a demand for better facilities at home. This will also serve to influence change in behaviours and practices of other members in the children's family and create habits that will be passed on to their own children when they grow up to be parents themselves. Water For People—India is conscious that initiatives at school will fail if the children return home and are unable to enact what they have learned at school.

- 2) In the communities where Water For People—India intervenes, all schools will be well equipped with water and sanitation facilities, making them more attractive for the children to attend classes.

The per capita cost of this is estimated to be around \$4 U.S. (based on 2006 calculations).

5.2.4 Improve Hygiene Practices and Infrastructure

Water For People—India and its partners will strengthen the hygiene component of all of their programs leading to measurable changes in the key hygiene practices that undermine household health. As proper hand washing can reduce the incidence of diarrhoea by 45 percent (WHO statistics), it will serve as the primary indicator for measuring impact of hygiene interventions. Efforts will therefore be targeted at schools and at households to maximize effectiveness. The program is outlined as follows:

Community Program

At the community level, the primary focus will be on faecal-oral transmission and four related hygiene practices:

- Personal hygiene (proper hand washing with appropriate techniques and times and regular nail cutting)
- Safe handling of water (collection, transport, storage and consumption)
- Safe disposal of human, solid and liquid waste (provision of household latrines, solid waste pits, soak pits and kitchen gardens)
- Food hygiene (proper washing techniques, food storage, adequate cooking times)

Over a period of two years, at least one adult (preferably a woman) from each household (out of 20 villages in six GPs in five blocks) will focus on the above hygiene practices. Field staff members from four partner NGOs will visit the communities and disseminate the above messages using posters, flip charts, flash cards, demonstrations and motivational activities. In all villages, at least two volunteer community hygiene promoters (VCHPs) will be trained to disseminate information about safe water, sanitation and hygiene practices directly to the communities to promote behaviour changes at the household level over a two year period. In addition, after one year, the VCHPs will be trained on other health care services such as: pre-natal care, first aid, prevention of communicable and infectious diseases, and child and family welfare so that the VCHPs can remain in each respective community as an important resource after the withdrawal of the project.

School Program

School sanitation and hygiene education focuses on the responsibility to provide children with an effective and healthy learning environment. It includes the provision of facilities that children need for sanitation, hand washing and water supply and the support to children to develop attitudes, knowledge and practices for effective hygiene.

At the school level, the primary focus will be on faecal-oral transmission and three related hygiene practices:

- Personal hygiene (proper hand washing with appropriate techniques and times and regular nail cutting)
- Safe handling of water (collection, transport, storage and consumption)
- Safe disposal of human, solid and liquid waste (provision of school latrines, solid waste pits, soak pits and school gardens)

The goals of the school programme are as follows:

- Children will adopt improved hygiene practices to prevent water and sanitation related diseases.
- Female students will have a better environment to continue their education.

Measurable Objectives

1. 12,000 (approximately) students in 34 schools (2007 – 2008) have received at least three improved hygiene behaviour messages every year
2. 5,000 (approximately) student families have adopted at least one of the above improved hygiene behaviours (2007 – 2008)
3. Increase in female student attendance in school over five years
4. Sustainable systems in place for operation, maintenance and finance for sanitation infrastructure
5. Continuation and expansion of hygiene promotion in 34 schools (2007 – 2008)

Water For People—India will develop a manual for the partner NGOs to effectively disseminate hygiene messages to the children, incorporating this program into the existing environmental science course in the school curriculum for classes 5 through 10. Primary school children, classes 1 through 4 will receive a separate hygiene curriculum, focused purely on hand washing and nail cutting. Teachers will communicate the three key hygiene messages using play-way methods, once a week.

One of the major components of this program will include the provision of water and sanitation facilities for each school, to complement hygiene education. In order to measure the impact of the above hygiene messages in the families of students, parent interactions at school, regular monitoring of infrastructure and practices at the household level will be conducted for at least 30 percent of students in participating schools.

Arsenic Mitigation Program

The arsenic program will have the following two components:

1. Dissemination of health-related effects from arsenic-contaminated water
2. Focused behaviour changes related to safe water handling -- water collection, transport, storage and consumption.

Goals for: 2007:

- A health manual will be developed for the partner field staff members that will include detailed information on safe water handling and arsenic-related health problems along with preventive measures.
- At least 2,400 adults will be educated on arsenic-related health problems.
- Information will be disseminated to at least 62 water committee members and 31 caretakers responsible for the respective operation and maintenance of 31 individual arsenic removal filters. One third of the total number of committee members will be women.
- Information will be disseminated to at least 2,500 children in two schools on arsenic-related health problems and safe water handling.
- Evidence that at least 50 percent of the targeted group has adopted improved safe water handling practices in each arsenic removal filter community per year.

Partner field staff will disseminate the above messages via pictures, posters and motivational activities to at least one adult from each household through bi-monthly household visits. In addition, a bi-monthly meeting will be conducted with the members of the water committees responsible for operation and maintenance to educate them regarding arsenic-related health problems. Initially Water For People—India will train the partner field staff members as well as the water committee members, but subsequently the partners and local women or men will conduct the trainings and serve as a resource for the water committee to motivate the users and non users. Water For People—India, in conjunction with BESUS, will prepare a health manual on arsenic that will be updated periodically.

5.2.5 Increase Coverage of Arsenic-free Water

As indicated above, arsenic is a significant problem in West Bengal. Water For People—India will continue to strengthen its arsenic removal programme through the following:

- Increase the rate at which at-risk communities benefit from arsenic removal technologies (from a current baseline of 20 units per year to 50 per year).
- Monitor the water quality at the collection point to ensure that all units supported by Water For People—India continue to provide water to households within government arsenic quality limits.
- Document the results of partner work and verify that at least one other agency has replicated the work supported by Water For People—India in West Bengal, as the need for arsenic removal systems is far beyond what Water For People—India can support.

In 2007, Water For People—India will partner with Bengal Engineering and Science University Shibpur to increase coverage of arsenic-free water from 4 percent to 4.86 percent in North 24 Parganas and Nadia Districts.

5.2.6 Broaden Technical Options

In their pursuit to fulfil target requirements for coverage of water and sanitation, the government and other agencies generally promote quick and cheap solutions. While having short-term impact, these options are often neither technically appropriate nor psychologically satisfying for the communities. In the absence of exposure and information about technical options, the communities do not make informed choices and are often viewed as stubborn and resistant to improvements by the change agents.

A classic example of this is the toilet model being promoted under the total sanitation programme. Undoubtedly this is the cheapest option for the poor villager who is being pressured by the promise of a subsidy to purchase the toilet. However, the squatting plate being distributed by the government comes without a superstructure and in some cases an unattractive cement pan. The recommended depth for the toilet is only four feet and no education has accompanied the installation to dispel fears of bad smell and unhygienic conditions. The soil, with its high content of clay, is not suited to support the heavy cement plate. And frequent rodent attacks make the latrine non-functional. All this combined has led to rejection of the sanitation programme and relegated it to simply meeting targets for distributing squatting plates, which remain unused or put to other uses by the community.

To address this, Water For People—India will support the introduction of new technologies that are locally appropriate and acceptable to both government and local communities. This will require considerable work, and will include everything from field testing to public policy advocacy. Evidence of success will be that technologies promoted by Water For People—India will be included in future government policy and programming.

5.2.7 Enhance Community Involvement in Water and Sanitation Programmes

A sense of ownership for water and sanitation structures is a key factor that often leads to proper maintenance and sustainability of water supply and sanitation interventions. As a majority of the plans for water and sanitation are made in a top-down manner by donors and government without the involvement of the end users, they often fail to foster a spirit of ownership among local communities. Furthermore, the welfaristic model followed by government and various aid agencies often creates an atmosphere of dependence and undermines sustainability.

Water For People—India and its partners will demonstrate increased involvement and ownership of water supply and sanitation facilities by:

- Demonstrating a reduction in water point “down time”
- Showing marked improvements in areas of use and hygienic maintenance of sanitation systems

5.3 Advocacy and Policy Work

Water For People—India and its partners and networks will share their field experiences with other agencies involved in water and sanitation and advocate for sector coordination and capacity building in order to facilitate scaling up and replicating water, sanitation and hygiene education programmes in line with Indian government regulations.

6. Finance

6.1 Indicative Annual Expenditure Budgets 2007-2011

Water For People’s global strategic plan states that it plans to grow in existing programme countries, including India. Annual expenditure is a simple indicator of that growth.

Water For People—India’s expenditure budget for 2006 is \$254,000. By 2011, Water For People aims to have 10 country programmes spending 85 percent of \$12 million, i.e., \$10 million. The five existing programmes will need to be in the vanguard of this spending increase. Therefore, Water For People—India could reasonably aim to increase its annual expenditure to \$900,000 by 2011. There is certainly enough demand in India to spend this sum, especially since Water For People—India will be broadening its range of work to include policy and research work in addition to field programmes.

Financial growth from 2006 to 2007 will be fairly slow, as the new staff members are recruited, new projects are planned, and existing projects are completed. Growth over the following few years can be faster as the staff and systems will be able to cope with spending the budget well in accordance with this country strategy. The indicative annual expenditure budgets could then be:

Year	Expenditure Budget
2006	254,000
2007	350,000
2008	475,000
2009	600,000
2010	775,000
2011	900,000

In 2006, around 67 percent of the total budget was devoted to direct project (field) expenses. By 2011, this will increase to 77 percent, bringing the overhead expenses of Water For People—India down to 23 percent.

6.2 Indicative Annual Income Budgets from Various Sources 2007-2011

The main source of Water For People—India's funds will be Water For People's main office in the U.S.A... Per the government of India regulations for liaison offices, Water For People—India cannot raise in-country funds. However, bilateral funding is possible whereby other funding agencies, government and the communities, contribute funds towards water and sanitation projects initiated by Water For People—India.

This process is already begun and in all ongoing Water For People—India projects through which the local government and the beneficiaries are contributing 10 percent of the direct project expenses. Contacts are being made with potential aid agencies, sector departments, corporate and voluntary sector donors in India. Water For People—India aims to develop fundable projects to continue to raise local funding to at least 10 percent (of total direct and indirect expenditure) from funding sources in country by 2011. This aim is reflected in the tabulation below.

Year	Income from main office	Income in-country
2006	254,000	20,000
2007	350,000	25,000
2008	475,000	30,000
2009	600,000	50,000
2010	775,000	75,000
2011	900,000	90,000

In order to do this, Water For People—India will do the following:

- Research the donors that have funds available in country and/or in the region to give to international NGOs,
- Learn about their priorities in water and sanitation,
- Match those priorities to Water For People—India's portfolio of work,
- Document measurable evidence of the success of Water For People—India's existing projects,
- Prepare project proposals for funding (these are likely to be replications of successful existing Water For People—India-funded projects rather than completely new projects),
- Periodically host potential donors, either from North America or India.

In addition to Water For People—India's own in-country fundraising, Water For People's global strategy states that its country offices will promote and support the efforts of its in-country partners in seeking financial support for their projects and initiatives. Water For People—India will do this as part of its capacity-building work.

7. Monitoring the Implementation of this Country Strategy

7.1 Monitoring and Reporting on the Work

It is part of Water For People's global strategy to strengthen its monitoring and evaluation processes and to develop a reporting system to measure performance against objectives. Water For People—India will comply fully with this system.

Water For People—India will develop systematic and practical monitoring and evaluation procedures that will ensure efficient and effective implementation of high-quality water, sanitation and hygiene programmes with measurable and sustainable impact. This is part of Water For People—India's core work, not an added-on element.

The monitoring procedures will consolidate into a structured management information system (MIS) that will allow periodic monitoring and review of the work and its impact and offer scope for course correction. The system will be so designed as to include the communities/recipients of inputs from Water For People—India to evaluate the benefits and improvement in their quality of life. Water For People—India sees this as an important prerequisite of sustainable programmes and an input to foster a sense of ownership among the stakeholders. Development of the MIS will be an ongoing and bottom-up approach, facilitated by capacity building of partners for effective monitoring and reporting.

The number of people served with sustainable water, sanitation and hygiene services will be the most important indicator. Sustainability will be measured by considering the following: adequate quantity, quality, functionality, use, management of water and sanitation inputs and hygiene interventions.

Water For People—India's monitoring will be compatible with, and integrated into, the government's national monitoring system for water and sanitation, which is currently being established (2006). It will use the national standards for water quality, water quantity, service level, health impacts, etc.

Water For People—India will report the results of this monitoring annually, both within India, to its partners, and to the government and outside India to its head office and donors. It will also commission external evaluations of its work at appropriate intervals in compliance with Water For People's global evaluation policy.

7.2 Reviewing and Replacing this Strategy in Due Course

A five-year strategy gives a clear and confident sense of direction. But needs and external circumstances change, so no strategy should be fixed rigidly for a long period. This country strategy will be reviewed by a consultative process during 2008 or 2009 in order to revise it as needed and to start to develop the next country strategy to guide Water For People—India in the years 2012 onwards.

The next strategy will be decided in sufficient time to enable a smooth transition from one to the next.