

**India:**  
**Water Supply, Sanitation and Hygiene**  
**Moving towards the 21<sup>st</sup> Century**

**The Environment of the Child**  
**in**  
**West Bengal**

**Water Supply and Sanitation Programmes**  
**and**  
**UNICEF's role and contributions**

**UNICEF - Calcutta**  
**September 1998**



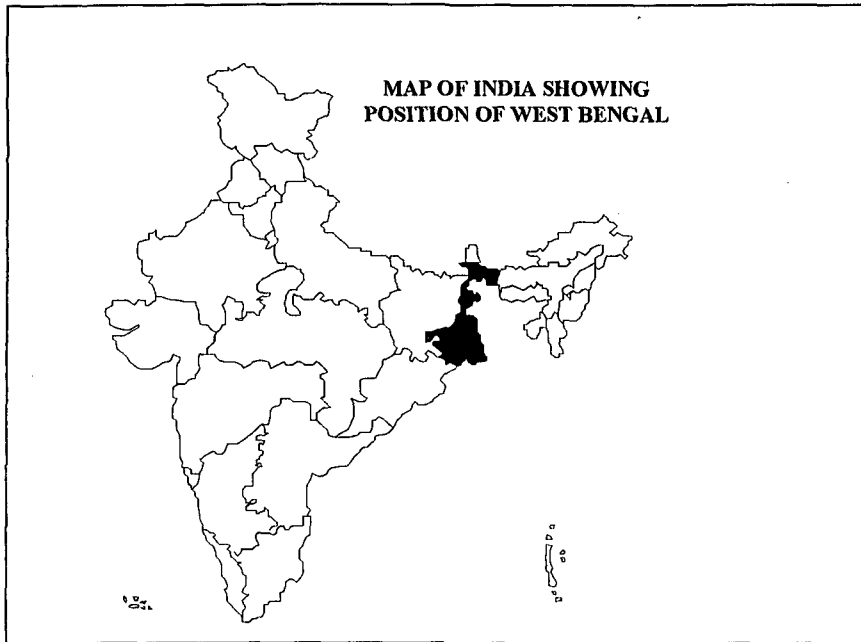
## WEST BENGAL

### 1. Demographic details, socio-economic and health indicators

SI No	Indicators	Status	Source
1	Population	68.1 million	91 census
2	Percentage of India Total population	8 %	- do -
3	No. of rural districts	17	- do -
4	No of development blocks	341	- do -
5	No. of households	12,514,414	-do-
	Rural	8,773,940	-do-
	Urban		
6	Sex ratio (per 1000 male)	917	- do
7	Literacy	57.7	-do-
8	Rural population on percentage of total population	72.5 %	-do-
9	Schedule caste population	23.6%	-do-
10	Schedule tribe population	5.6%	-do-
11	Area	88,752 sq.kms	-do-
12	Malnutrition among children under 4 years of age	55%	NHFS 96
13	Children fully immunized by 2 years	60%	SRS 96
14	Population covered under safe drinking water (rural)	77%	PHED
15	Population having access to household latrine		Census 1991
	Urban	78.75%	
	Rural	12.31%	

With a population of 68 million (1991), West Bengal is the fourth most populous state in India. Situated in the eastern region of India, it covers 78,000 square kilometers. It is bounded on the north by Nepal and Bhutan and the state of Sikkim, on the east by the Goalpara district of Assam and Bangladesh, on the south by the neighbouring state of Orissa and the Bay of Bengal and on the west by Bihar. The north-south length of the state is approximately 600 kilometers from the mountain ranges of the Himalayas to the Bay of Bengal. The east-west spread is about 300 kilometers from the Sundarbans to the Mayurbhanj ranges and the Chhotanagpur plateau.

The topography of the state is mostly flat and featureless, dominated by the alluvial plains of the Gangetic delta region. Only one per cent of the total area of the State in the north is mountainous. The plateau fringe and the upland region along the western border comprise about six percent of the total area of the state. The mountain regions in the north, though small in area, are a part of the world's highest peaks, rising more than 7,500 meters among the ranges located in Sikkim.



The crude birth rate in West Bengal declined from 33 per 1000 population in 1991 to 23.6 per 1000 population in 1995. Similarly, crude death rate declined from 11 to 7.7 per 1000 live births. Although the sex ratio for children less than five years of age is favorably placed at 993:1000, it

shows a progressive decline, reaching 956:1000 for children below 19 as a whole.

There is a strong political commitment to meet social sector goals. The political will created towards meeting social sector goals stands further strengthened by a tradition of community participation and empowerment through *Panchayati Raj* system. There is further scope for strengthening these institutions taking advantage of the 73<sup>rd</sup> and 74<sup>th</sup> Amendment of the Constitution. The strong tradition of local self - government in the state offers a unique opportunity to empower local communities. With a large number of women, now represented in *Panchayati Raj* institutions, the accruing benefits hold promise of reaching to women and children on priority.

## 2. Status of WES programmes

### Access to, and use, of safe drinking water

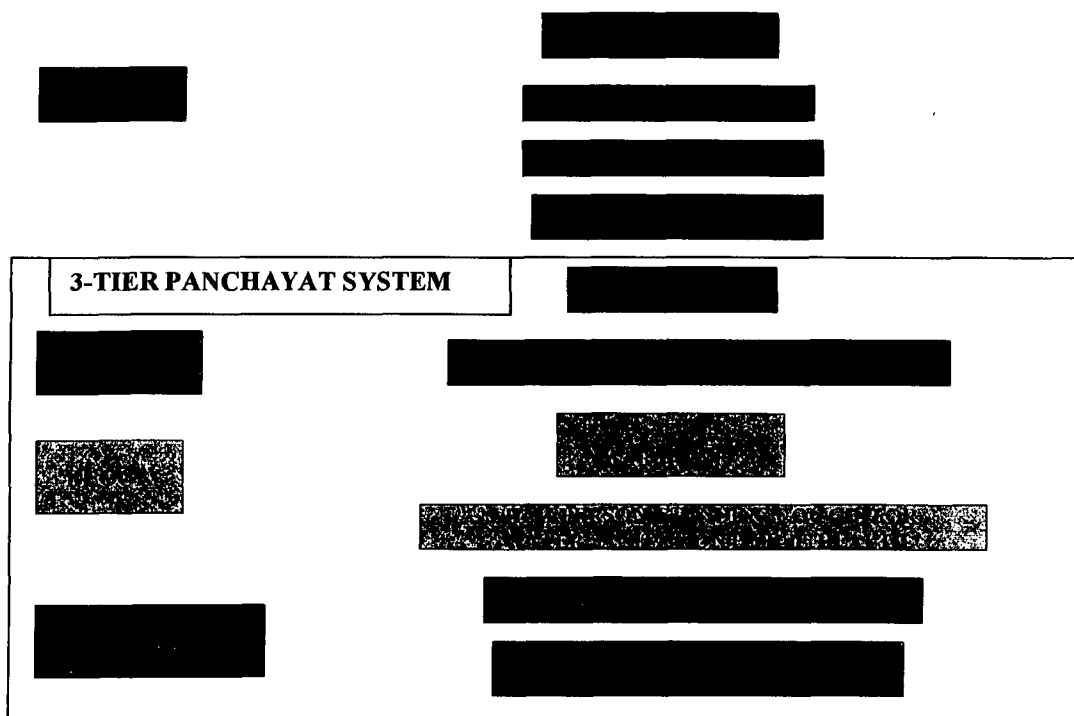
The rural water supply programme witnessed extensive participation of the community through *Panchayati Raj* institutions. A very positive benefit to women and children has been observed in programme implementation. The rural water supply programme in the state is planned by the Zilla Parishad(ZP) at the district level in consultation with the Block samities and Public Health Engineering Department (PHED). District plans of action(POA) are consolidated at the state level by the PHED. Budget allocations, both the share of the Central Government under the accelerated rural water supply programme (ARWSP) and the State Government under minimum needs programme (MNP) is released to the respective ZPs based on their POAs.

Five districts in the western part of the state bordering Bihar, which have hard laterite and rocky formations, along with the hilly region of the north, have been identified as "rig - bore areas". ZPs take the help of PHED for drilling and installation of handpumps under the rural water supply (RWS) programme in these areas. Operation and maintenance of all spot sources, however, are the responsibility of the *Panchayat* system.

The rural water supply programme is implemented in the state through piped water supply schemes (PWS) and creation of spot sources (manually bored or rig bored tube wells fitted with handpumps and open dug wells). While cumulated numbers as on 31 March 1996 for spot sources created through ZPs were 150,081, the number of rig bored tube wells installed by PHED was 26,404. The number of spot sources working as of March 1997 is 79,799 while 17,995 rig bored tube wells are reported to be operational. Total population coverage through all the sanctioned PWS schemes, when completed, will be raised to 23.25% from the present figure of 15.93%. (PHED, GOWB source 1997). Under the rural water supply programme, the norm for coverage is 40 lpcd within a distance of 1.6 km or 30 mtr elevation. By the end of March 1996, it was possible to cover 76.86% of rural population with safe drinking water supply.

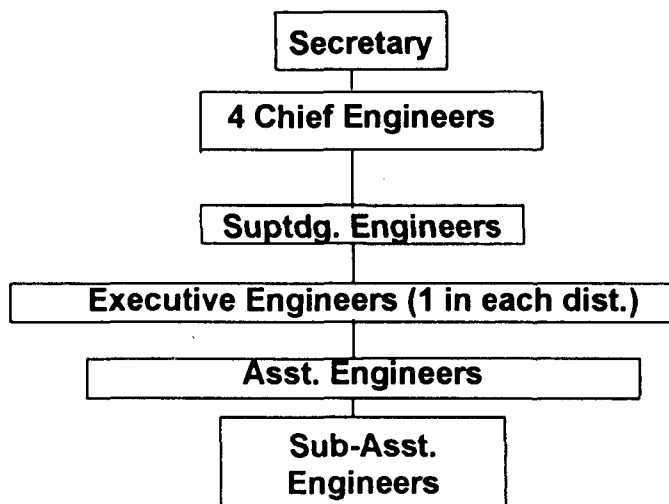
**Institutional Structure for programme implementation** As per rules of business, in the state PHED is responsible for rural water supply whereas the Panchayat Raj and Rural development Department (P&RDD) is responsible for Rural Sanitation Programme. In the districts, Zilla Parishads (ZPs) are responsible for drinking water supply and rural sanitation programme. The piped

**STRUCTURE OF PANCHAYAT RAJ ADMINISTRATION**



water supply schemes are constructed and maintained by the PHED while all other spot sources are maintained by the ZPs (the rig bored tube wells are handed over to ZPs for maintenance after construction by PHED).

## ORGANISATIONAL STRUCTURE OF PUBLIC HEALTH ENGINEERING DEPARTMENT (PHED)



The State of West Bengal has created one Sanitation Cell at the State level within P&RDD which coordinates all activities in the state related to sanitation. At the district level, each ZP has established one Sanitation Cell headed by one Coordinator. This cell works under the guidance of Chairperson, Janaswasthya (public health) Standing Council. They also monitor the functioning of the sanitary marts which are generally established by local NGOs. The state, in principle, has decided that self-sustained sanitation programme would be implemented by the NGOs and they would work under the overall guidance and collaboration of the three-tier panchayat system.

### KEY ISSUES IN THE RURAL WATER SUPPLY SECTOR IN THE STATE

#### Water Quality Surveillance

Water quality surveillance has now evolved as a priority concern under rural water supply programme. The PHED, as of 1997, had four water quality testing laboratories of its own in Malda, Murshidabad, Nadia and South 24 Parganas districts. However the present level of instrumentation and expertise are far from satisfactory. Only a few constituents like iron, arsenic and pH are measured. There is no facility in the PHED laboratories to measure bacterial contamination in water samples. Positive examples of community mobilisation are now being witnessed under water quality surveillance initiatives. A community based water quality surveillance project was initiated in 20 ICDS blocks of Medinipur, with each block covering five or more anganwadi centres. Its main objective is to develop an efficient sustainable rural water quality management system at the grass root level. It is expected that replication of this project will be tried in other areas of the state.

## **Operation and Maintenance**

Under the rural water supply programme, capacity at the community level for repair and maintenance of handpumps is being developed in the state. The positive experience in this regard has been ably demonstrated in Medinipur district where more than 5000 VLOM handpumps have been installed under CDD-WATSAN Strategy and are being maintained by the community. WATSAN committees are formed before installation of the pumps and these bodies take all measures for maintenance of the pumps at village level by the caretakers. These caretakers, mainly women, are identified by the WATSAN committees from the users and trained before installation of the pumps. The successful demonstration of community based handpump maintenance system has convinced the government to replicate the same in other areas of the states.

## **RURAL SANITATION PROGRAMME**

The status of sanitation in the state is not at all satisfactory. As per 1991 census, only 12.3% of the rural population had access to household latrines. Again most of these latrines were also not sanitary. Low priority was given to this sector leading to less allocation of funds. Again, whatever few latrines were constructed, these were also heavily subsidised. This resulted in non usage of the few latrines so constructed. Age old habit coupled with non-availability of low cost options of sanitation facilities and ignorance compelled the villagers to go to the field for defecation.

In 1990, the Government of West Bengal initiated an innovative Intensive Sanitation Programme (ISP) in Medinipur district. This was a unique programme where there was no provision of subsidy and demand for various kinds of sanitation facilities was created first by way of extensive awareness generation. A package of sanitation facilities e.g. smokeless ovens, soakage pits, garbage pits, household latrines, bathing cubicles, etc. was promoted giving stress on hygiene and health education. A range of low cost sanitary facilities, costing from Rs.350/- to Rs. 3500/- is promoted giving stress on upgradation. Once the demand was created, the sanitary facilities were installed at the premises of the villagers by trained masons. An alternate delivery system has also been developed through setting up of production centres where all sorts of low cost sanitary materials are produced with the help of locally available materials and labour. Till now, about 230,000 household latrines and 25,000 other sanitation facilities have been constructed through this programme. The programme is being implemented by Ramakrishna Mission Lokashika Parishad (RKMLP) a leading NGO of the country, with close collaboration of the three tier panchayat system of the district with UNICEF support.

Being convinced fully with the success story of Medinipur, the Government of West Bengal has taken a bold step to spread this type of self-sustained

sanitation programme in other districts of the state. In Hooghly district, the programme is being implemented by the local panchayat whereas in other districts, this is being implemented after establishment of sanitary marts. These sanitary marts are generally established by local NGOs and are run under close collaboration of the local panchayat. In West Bengal the sanitary marts are a bit different. One mart is responsible for all activities related to rural sanitation programme (RSP) in a particular block where it is established. Every mart has its own production centre and once the demand is created, the facilities are provided at the premises of the villagers through trained local masons. Till now, about 200 blocks including Medinipur and Hooghly have been covered under ISP. It is expected that by year 2000 each of the total 341 blocks of this state will be provided with at least one sanitary mart. The performance of the sanitary mart was also found to be quite satisfactory. Though the GOI under central rural sanitation programme allows subsidy to the extent of Rs.2000/- for people below poverty line, the GOWB has lowered it to only Rs.200/- per family.

The programme is gaining momentum every day and the overall coverage is also increasing. The present coverage (1997) of rural population having access to household latrines is estimated to be about 25%.

### **School Sanitation Programme**

Though late, the GOWB has now taken a positive step to provide sanitation facilities in the primary schools of the state. In the meantime, the programme has been initiated in fifteen blocks of five districts. Utmost care is being taken to implement the programme so that the sanitation facilities once provided in the schools are not only maintained by the schools without any external support but also to promote sanitation to the community through the schools. For this, all the concerned government/NGO officials including panchayat functionaries are first oriented. The teachers are also educated. Stress is given on awareness generation through the school to make the students/villagers aware of the total concept of sanitation. The state has developed a guideline for implementation of the programme. UNICEF is closely associated with this programme and is rendering both financial and technical assistance to the government for its smooth implementation. It is expected that by the year 2002, all the primary schools in the state will be covered under sanitation

### **Human Resources Development**

To implement the RSP efficiently, different categories of people like masons, motivators, NGO functionaries, school teachers, ICDS workers, panchayat functionaries, etc. require to be trained regularly. The GOWB has institutionalized training of such type of people through the Sanitation Cell established within the Panchayat and Rural Development Department. Some of

the training/orientation programmes are done centrally whereas others are done at block or district level.

## **URBAN WATER SUPPLY AND SANITATION**

The responsibility for urban water supply and sanitation is lying with the respective municipal bodies. In some areas, the NGOs are now working to support the local governments. The status of sanitation in urban areas of the state is somehow satisfactory ( as per 1991 census, 78.75% population covered with household latrines). However, many of these latrines are not sanitary and status of overall environment including solid waste management particularly, in the market areas , is extremely poor.

On an experimental basis and to meet the urban challenge, a small but path-breaking strategy with a strong public health component has been launched. It is being implemented in Maheshtala Municipal Township with UNICEF assistance. The programme, among others, covers development of community-based water management systems, water quality surveillance by the community and social marketing of sanitary facilities. Areas of support have also been identified under the Calcutta Plan of Action for children to reach sanitation facilities to unserved urban population groups, like those in other than slum areas, street dwellers and floating population.

### **Key problem facing the rural WES sector : Arsenic contamination**

Arsenic contamination of ground water, in particular, seems to be a serious public health concern in the state. It is reported that 61 blocks in eight districts, namely, Malda, Murshidabad, Nadia, Burdwan, Hooghly, Howrah and North and South 24 Parganas have been affected by arsenic contamination in ground water. Contamination level is reported to be as high as 1.8 mg per litre against the permissible limit of 0.05 mg/ltr. About 4 million people are reported to be vulnerable to chronic arsenicosis, keratosis, skin cancer and related effects of arsenic contamination in drinking water sources. Though work is going on to tackle the situation by way of implementing major piped water supply schemes, there is need to formulate one master plan after ascertaining the quality of all sources of water (both public and private) to take care of all problem villages affected by arsenic.

### **Rural Water Supply : risk analysis**

Though at present there is no problem village in the state, the desired goal of supplying 40 lpcd of water to the rural population is yet to be achieved. Moreover, a good number of spot sources remain out of action at any given moment of time for non-involvement of the community in management.



Arsenic contamination in ground water poses to be a major threat to drinking water supply in a vast area of the state. Master plan is yet to be prepared considering the need of each of the problem village. Detection of affected person at early stage and treatment of the patient are yet to be done properly. Mobilisation of resources and convergence of activities of different departments to tackle the menace, is urgently required.

Though presence of fluoride was not a problem in ground water of West Bengal, recently, it is noticed in the water of some of the tube wells in Birbhum district that fluoride is present.

### **Linkages**

While implementing school sanitation programme, it is noticed that there is no proper linkage between Panchayat and Rural Development Department and the Education Department. The allocation made as per Finance Commission is also not spent by the Education Department keeping other involved organisations properly informed.

### **UNICEF-WES SUPPORTED PROGRAMMES**

UNICEF is supporting the GOWB since long in the matter of water and sanitation. The CDD-WATSAN Strategy is being implemented in Medinipur district where interventions related to water, health and sanitation are being provided. Medinipur, is the most populous district in India (8.4 million as per 1991 census) having about 1% of India's population. Under that strategy, community based handpump maintenance system and water quality surveillance are being developed. The minimally trained women caretakers equipped with fast moving spares maintain the handpumps without any external support. This way, the downtime of the handpumps have been reduced considerably. ORS depots are also being established to promote social marketing of ORS. The community managed self-sustained sanitation programme not only influenced the Government of West Bengal to replicate similar strategy for implementation of RSP in other areas but also influenced the GOI to modify the Centrally Sponsored Rural Sanitation Programme (CRSP) guidelines from time to time.

UNICEF is also closely involved and supporting the GOWB in establishing sanitary marts in different districts, developing human resources and IEC activities. To monitor all sanitation activities in the districts, the GOWB has established a Sanitation Cell within Panchayat and Rural Development Department with UNICEF support which is also working satisfactorily.

UNICEF is collaborating with the Government of West Bengal in providing sanitation facilities in the primary schools. The intention of this programme is not only to promote sanitation in the schools but also to promote sanitation to the community through the schools.

In the sector of urban sanitation, UNICEF is also collaborating with Calcutta Municipal Corporation (CMC) and Maheshtala Municipality.

UNICEF is also collaborating with All India Institute of Hygiene & Public Health (AIH&PH) to conduct several studies in the matter of community managed water quality surveillance, solid waste management by vermi-culture, low bored sewerage, pollution travel from leach pits, up-flow filter, usage of traditional water like ponds, lakes, etc. for drinking water supply through HRF/SSF, etc. Based on experience of the prototypes, HRF/SSF is now being installed in some other areas. These HRF/SSF will be a very useful device to supply drinking water after using traditional sources of water like ponds, lakes, etc.

UNICEF has already taken action to collaborate with the Government of West Bengal to tackle the problem of arsenic. One draft POA has already been prepared in this regard which is likely to be finalised very soon.