THE NATIONAL RURAL WATER SUPPLY AND ENVIRONMENTAL SANITATION PROGRAMME IN INDIA

FIRST PROGRESS REPORT
(May 1995 to November 1996)

PBA Reference No. SC/95/0241
Government of The Netherlands

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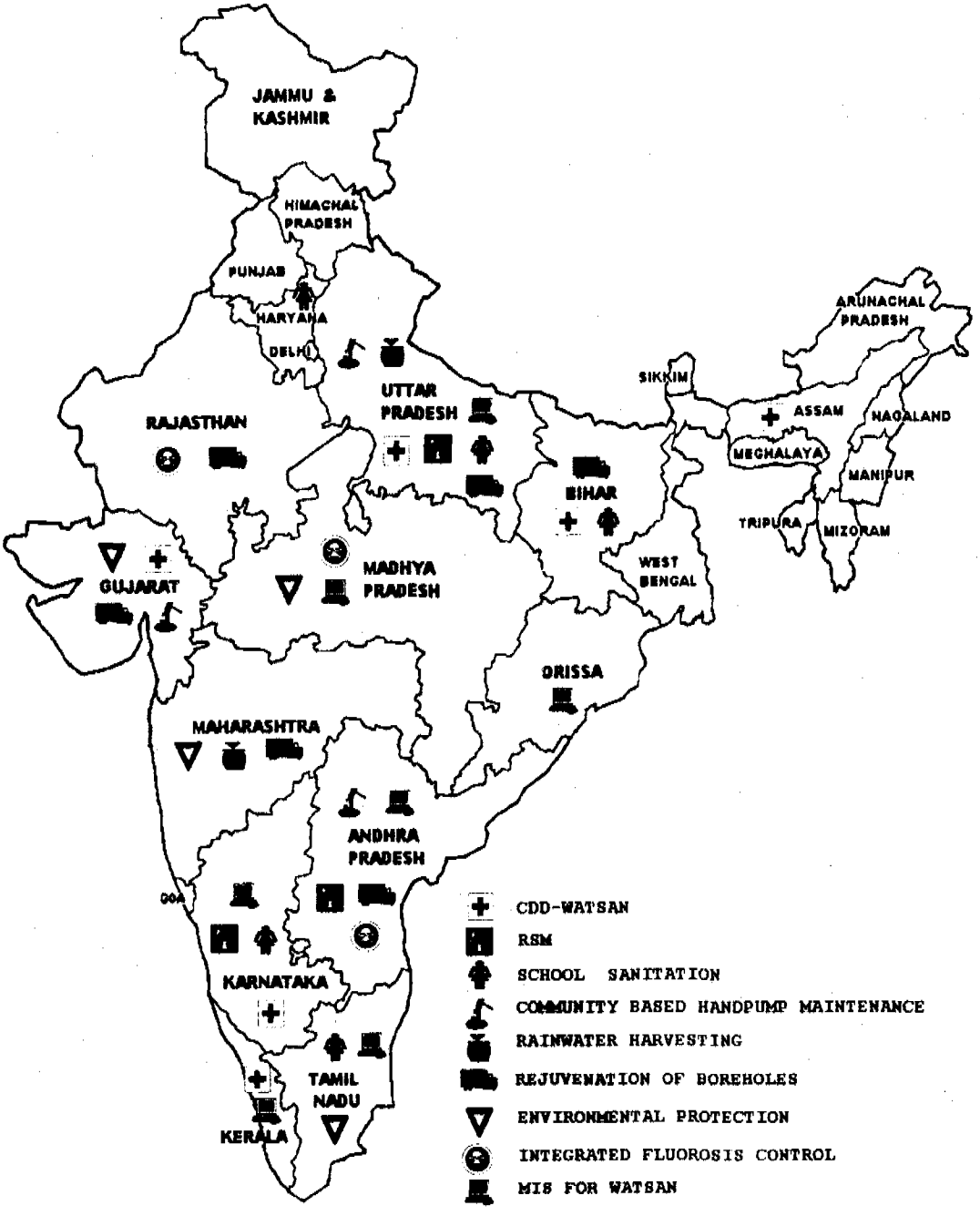
United Nations Children's Fund - India Country Office
Water and Environmental Sanitation Section
73 Lodi Estate
New Delhi 110003
India

FEBRUARY 1997

Progress Report no.	:	First
Assisted Country	:	India
Assisted Programme/ Project	:	The National Rural Water Supply and Environmental Sanitation Programme in India
PBA Number	:	SC/95/0241-1 & SC/95/0241-2
P/L Number	:	9113
Total Contribution *	:	
Funds Utilized To Date	:	US$ 7,295,003.00
Balance Of Funds Available	:	US$ 7,832,384.00
Duration Of Contribution	:	1 May 1995 to 30 April 1997
Period Covered By Report	:	1 May 1995 to 30 November 1996
Date Prepared	:	February 1997



NOTE:-

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GLOSSARY*

CCA

Community Convergent Action is a response to the increasing demands for improved decision-making by local communities and greater responsiveness of the social development sector to community needs. CCA seeks to foster a team approach for assessing, analysing and initiating action to meet the rights of children at community level, promote effective social communication between team members and develop a system of community level monitoring to track progress made towards the goals for children.

CDD-WATSAN

The Control of Diarrhoeal Diseases - Water and Sanitation initiative aims to reduce the incidence of diarrhoeal diseases by increasing the use of safe water, sanitary latrines, better hygiene practices and the proper management of diarrhoea cases.

DWCRA

The Development of Women and Children in Rural Areas is a central part of the government's Integrated Rural Development Programme. It promotes group economic activities for women through enhanced access to credit, productive resources and supportive services.

ICDS

Integrated Child Development Services is a government programme that delivers basic services to children as well as pregnant and nursing women, through a community-based child-care worker, to enhance the holistic development of the child.

Focus districts

Focus districts are selected districts where the government and UNICEF endeavour to demonstrate the feasibility, effectiveness and value of community-based approaches to services, through phased, inter-related programming.

Village Contact Drive

Village Contact Drive is a group approach to motivating communities during which trained men and women convey messages on safe water and sanitation to village people at their doorsteps, in the local dialect, using a variety of communication media.

* See Annex for a comprehensive list of acronyms.

1. EXECUTIVE SUMMARY

In 1995, the Government of the Netherlands agreed to provide supplementary funding for the rural water supply and sanitation component of the Government of India (GoI)/UNICEF Programme of Cooperation. The Government of the Netherlands agreed to provide Dfl. 25.98 million (US$ 15.12 million) for a period of two years, ending April 1997, through an agreement signed on 3 May 1995.

This first progress report on the rural water supply and sanitation project funded by the Government of the Netherlands and managed by UNICEF documents strategies, achievements, constraints and expenditure for the period May 1995 to November 1996. It also contains a brief overview of plans for the remainder of the project period, till April 1997.

General overview

UNICEF support to rural water supply in India dates back to the sixties, with a major GoI/UNICEF thrust to address the rural water supply problems during the Fourth Plan Period (1969-1974). Today, India's Rural Water Supply Programme (RWSP) is one of the largest and among the most successful programmes of its kind in the world, with an estimated 77 percent[1] of the 627 million rural population (1991) provided with access to safe water, bringing the global goal of universal access by the year 2000 within reach.

India has a very low household latrine coverage, estimated at 28 per cent overall and at 20 per cent for rural areas, leaving the global goal of universal access still a major challenge. Even when households have a latrine, children often do not use it. Personal, home and environmental hygiene remain key concerns. UNICEF cooperation in sanitation started in 1983, gaining momentum when the Central Rural Sanitation Programme (CRSP) was launched in 1986 and rural sanitation was included in the GoI's 20 Point Programme.

The years 1995 and 1996 witnessed a number of events of importance to the sector, which need mention for a better understanding of the context of implementation of this Dutch-funded project.

In 1995, the Ministry of Rural Development (MRD) evolved a national Information, Education and Communication (IEC) strategy for the rural water supply and sanitation sector, thereby reconfirming its stand on a shift from hardware to a more balanced combination of hardware and software interventions. The Prime Minister released a national logo on sanitation at a conference of newly elected members of the Panchayat, which marked the beginning of political support for sanitation at the highest level, thus significantly enhancing its profile. The recommendations of the Tenth Finance Commission emphasized the importance of providing separate toilets in schools for girls from upper primary levels upwards, so that they do not discontinue their education for want of such basic facilities. The Commission also recommended that safe drinking water be provided at all primary schools.

In 1996, the Prime Minister convened a conference of Chief Ministers on basic minimum services for the population. The Common Minimum Programme adopted after this conference accords the highest priority to realise full water supply coverage, aiming to achieve this by the year 2000. The conference also stressed the need to converge the provision of safe water with sanitation, hygiene and public health. In September 1996, the Minister for Rural Areas and Employment announced a decision to gradually enhance the current quantity norm for rural water supply from 40 litres per capita per day (lpcd) to 55 lpcd, and to reduce the norm for distance to a safe source of water from the current 1,600 metres to 500 metres. During the same month, the Government of India organised a national workshop on operation and maintenance of water supply and sanitation systems. The conference brought together senior administrators and engineers in charge of water supply and sanitation programmes in the states, NGOs, international experts and representatives of multilateral and bilateral agencies. The recommendations adopted at the workshop cover the introduction of a policy framework for implementation and resource mobilisation (including cost recovery), decentralisation of O&M activities, delineating the roles

[1] Annual report 1995-96, Ministry for Rural Areas and Employment; status as of 31/3/1995.

of principal stakeholders, empowerment of local bodies and communities for O&M and capacity building of functionaries at various levels.

Project overview

In the second half of 1995, UNICEF-India underwent a significant downsizing in staff. The number of posts for the 1996-97 period was reduced by 75 from the proposed levels, leaving a total staff strength of 315, with 22 staff members working full-time on water supply and environmental sanitation, including ten based at the Field Offices. In addition, nine full-time consultant experts are also supporting the water and sanitation programme. All, but one, of these consultants are based at the ten Field Offices.

As a result of the reorganisation following the reduction in posts, programme implementation slowed, because orientation and familiarisation of relocated and newly hired personnel required considerable time. The Dutch-funded project was comparatively more affected, because most components include new strategies and/or technologies which needed lengthy discussions with the concerned government line agencies to obtain their commitment for implementation. The preparation of plans for project components where UNICEF had less experience, such as in environmental protection, noticed particularly long delays.

While UNICEF has one or two WES professionals in each of the ten Field Offices, these staff carry a tremendous workload. Most of their time is devoted to working with various partners to formulate, implement, monitor and evaluate a number of projects aimed at demonstrating innovative strategies and/or technologies. The limited staffing has resulted in occasionally inadequate monitoring of the programmes and projects supported by UNICEF, which are often spread over a wide geographical area. UNICEF is conscious of these weaknesses and efforts are on to improve monitoring.

In the last quarter of 1995, the Royal Netherlands Embassy conducted an intermediate review of UNICEF cooperation in rural water supply and environmental sanitation. This review resulted in several important recommendations, aimed at considerably strengthening UNICEF's capacity to support, facilitate and monitor the projects implemented with UNICEF support.

Implementation of some of the main project components can be summarised as follows:

The **Control of Diarrhoeal Diseases - Water and Sanitation (CDD-WATSAN) strategy** is the largest component of the project, to which more than 28 per cent of the project budget is allocated. The strategy aims to reduce diarrhoeal morbidity through the increased use of safe drinking water and sanitary facilities, promotion of domestic and personal hygiene, and proper diarrhoea case management. Project interventions are in six districts of six states where implementation of the strategy had already been started in 1993-94. While implementation of the strategy continued in all six districts, the rate of progress varied considerably from district to district. Training and orientation related to the promotion of hygiene accelerated markedly during this reporting period. Excellent progress was also recorded in the setting up of ORS corners in health centres and ORS depots in villages, where achievements have exceeded plan-of-action targets. The strategy is widely appreciated among implementors.

The **Integrated Fluorosis Control Project (IFCP)** is the second-largest component of the project, with more than 13 per cent of project funds allocated. The project is implemented in fluorosis affected districts of Andhra Pradesh, Madhya Pradesh and Rajasthan. While Government funds are generally used for the provision of piped water supplies, UNICEF funds complement these inputs with IEC to create awareness of the risks of using water with excess fluoride, sanitation and hygiene, community-based maintenance of water sources low in fluoride and groundwater recharge. With increasing investments for fluorosis control from GoI (75 per cent cost sharing with recipient states), the reorientation of UNICEF investments to complement these much larger government funds has slowed financial implementation in this project component. The use of sources of safe water, other than piped schemes, has not received much interest from implementors. R&D for the development of an activated alumina based domestic defluoridation (DD) filter continues with the Indian Institute of Technology (IIT) in Kanpur. In a number of villages in Dungarpur, Rajasthan, where all water sources have fluoride in excess of three ppm, 430 DD filters and 410 Nalgonda-based filters have been introduced in village households, under closely controlled and monitored conditions.

The **Management Information Systems for WatSan** is the third largest component of the project, with more than 10 per cent of project funds allocated. It aims to build capacity of the sectoral institutions for effective policy planning and optimal utilisation of resources through the availability of comprehensive sector related information at any given time. The strategy of the MIS projects implemented in Madhya Pradesh and Orissa has been well received by the National Computerisation Committee of the Ministry of Rural Areas and Employment (MRAE) for the development of centrally-sponsored MIS for the sector. Implementation of these projects is continuing, with the development of human resources, management procedures and data communication. In five other states the focus of MIS efforts has been on strengthening the monitoring of district-based activities and ground water management.

The **Water Supply Sustainability/Rejuvenation of Borewells** component of the project has progressed relatively well. Procurement action has been taken for nearly all hardware inputs, and training on the use and maintenance of the often expensive equipment is provided as and when the items reach the consignees. However, it may take until early 1997 before all machinery is in place. Output from this equipment can be expected only after commissioning and training of the operators.

The **School Sanitation** component of the project has now reached 579 of the planned 1,500 primary schools in five districts in five states. This reporting period has seen good progress, with considerable achievements in all elements of this component. Awareness creation of sanitation and hygiene among school children was the focus of attention. Water supply and sanitation facilities at many schools were expanded and/or improved, often with considerable contributions from the local Panchayats. Efforts are also underway to enhance the links between the schools and the communities, particularly through Parents-Teachers Associations.

The **Rural Sanitary Mart (RSM)** component of the project has been taken up in some districts in Andhra Pradesh, Karnataka and Uttar Pradesh. Overall progress has been very good, with 82 of the planned 100 RSMs already set up. However, nearly all of these RSMs are located in U.P., while the concept has yet to gain ground in the other two States. Performance of the individual RSMs varies widely. However, the majority of the RSMs functions fairly well, and the expectation is that most will soon be profitable.

2. INTRODUCTION

In India, every year around one million children below five years of age die of dehydration due to diarrhoeal disease. Diarrhoeal cases account for as much as 40 per cent of paediatric beds and more than one-third of paediatric out-patient visits in peak seasons of the year. There is an inherent association between diarrhoea and poor water supply and inadequate sanitation. This is one of the reasons why a reduction in diarrhoeal incidence is often considered as a generic indicator of improved domestic water supply and better home and personal hygiene.

Therefore, the overall goal of securing the health and well-being of children and women is advanced by ensuring the use of safe drinking water in sufficient quantities, the use of sanitary latrines and the practicing of good personal and home hygiene. Drinking water is a priority for all rural communities so it serves as an entry point around which social development activities can be organised. Community involvement in the planning and implementation of services leads to the better utilisation of water and sanitary facilities which, in turn, results in the reduction of water-borne diseases which, along with malnutrition, are the leading causes of morbidity and mortality of children in India. The guiding principles of GoI/UNICEF cooperation in water supply and sanitation are:

- The protection of children from diarrhoea and other diseases caused by the use of unsafe water or unhygienic practices.
- The reduction of drudgery for women and young girls who must carry water over long distances.
- The improvement of women's access to better knowledge on primary environmental care.

2.1 National Objectives

The approach to water supply and sanitation in the 8th Five Year Plan of GoI (1992-97) takes into account the following guidelines from the New Delhi Declaration as adopted by the UN General Assembly in 1990 :

- Protection of the environment and safeguarding of health through the integrated management of water resources and liquid and solid wastes.
- Organisational reforms and changes in procedures, attitudes and behaviour and the full participation of women at all levels.
- Community management of services, backed by measures to strengthen local institutions in implementing and sustaining water and sanitation programmes.
- Sound financial practices, achieved through better management of existing assets and extensive use of appropriate technologies.

Today, the Rural Water Supply Programme in India is the largest, and considered among the most successful in the world. The country has not only achieved self-sufficiency in the production of drilling equipment, accessories and handpumps but also exports these items to a number of other developing countries. Nevertheless, there remain numerous hamlets without safe water sources, often inhabited by the most disadvantaged communities.

Sanitation remains a major challenge. However, the Rural Sanitation Programme is gaining momentum with a shift in focus from latrine construction to a holistic approach encompassing personal hygiene, home sanitation and environmental cleanliness. Technology choice, alternative delivery systems and the promotion of sanitation in and through schools are some of the strategies that help mobilise households to participate in the programme.

2.2 UNICEF Cooperation

UNICEF has a thirty year history of cooperation with GoI in the rural water supply and environmental sanitation sector. During this long association, it has made significant contributions to the national programme. UNICEF has promoted hard-rock-drilling technology in India and encouraged its indigenisation; provided technical support for geophysical investigations; developed and standardised a range of borewell handpumps to suit India's varying hydro-geology. UNICEF also facilitated community management; advocated for accelerated sanitation coverage and hygiene education through innovative area-based demonstration projects and supported the successful guineaworm eradication programme. Many of these interventions now form a part of the norms and standards used in sector projects throughout the country.

In support of the goals of the World Summit for Children, as well as the national goals, the objectives of UNICEF cooperation as defined in the current Plan of Operations (1996-1997) are to:

- Advocate and ensure community management of the 'Water Environment'.
- Enhance household water security.
- Rapidly expand sanitation and hygiene education.
- Complete guineaworm eradication.

To meet these objectives, the programme pursues a five-pronged strategy:

- Consolidate progress made towards community involvement and convergence of services.
- Create capacity among women' groups, community-level functionaries and elected representatives.
- Develop innovative approaches and sustainable technologies to reach un-served and under-served areas and communities.
- Continue monitoring of quality control of hardware.
- Explore new direction for cooperation, such as sanitation for the urban poor and management of the water environment at local level.

GoI-UNICEF cooperation calls for support at national/state and district levels. While national/state level activities focus mainly on policy development for the water supply and sanitation programme, district level interventions aim to demonstrate innovative and replicable approaches and strategies, which involve communities in planning and management, while converging with other women and child related interventions.

3. BACKGROUND

GoI is on the verge of achieving the goal of eradicating guinea worm disease and is close to universal access to safe drinking water. The water and sanitation programme has reached a point where advocacy efforts for increased resource allocations by the government for environmental sanitation and greater emphasis on community managed water and sanitation programmes with a focus on women are beginning to show results and it is thus essential that UNICEF continues to support these areas of cooperation.

The present GoI/UNICEF Plan of Operations for the period 1996-1997 covers the final period of the GoI 8th Five Year Plan (1992-97). The water supply and sanitation component of the GoI/UNICEF Plan has an approved funding level of US$ 44.6 million, including US$ 33 million in supplementary funds. To-date, UNICEF has received US$ 20.8 million from donors, leaving an unfunded supplementary balance of US$ 12.2 million.

3.1 Assistance from the Government of the Netherlands

In 1995, the Government of the Netherlands agreed to provide supplementary funding for the rural water supply and sanitation component of the GoI/UNICEF programme of cooperation. The Government of the Netherlands agreed to provide Dfl 25.98 million (US$ 15.12 million) for a period of two years, from May 1995 to April 1997, through an agreement signed on 3 May 1995 (Reference: programme activity number IN.0301.01).

Supplementary Funding for WES from the Government of the Netherlands (1985-1997)

Project	Form 300/PBA	Project period	Contribution (in million US$)	Utilisation CFs (in million US$)	
Drought Assistance	300/87/389	1988-90	5.84 (NLG 10 m)	5.76	99%
Rural WATSAN	SC/95/0241	1995-97	15.12 (NLG 25.98 m)	7.30	48.3%

3.2 Areas of Intervention

Sln	Project Component
1.	CDD-WATSAN Strategy
2.	Rural Sanitary Marts
3.	Rainwater Harvesting & Empowerment of Women
4.	Community Based Handpump Maintenance
5.	School Sanitation
6.	Water Supply Sustainability
7.	Environmental Protection of Ground Water Resources
8.	Integrated Fluorosis Control Project
9.	Management Information Systems for WatSan
10	R&D on Low-Cost Sanitation

UNICEF, in consultation with the Royal Netherlands Embassy, New Delhi, identified ten areas of intervention which together make up the Dutch-funded rural water supply and sanitation project. The ten constituent components of the project are shown in the table at left.

While identifying the project areas, priority has been given to those states where other Dutch-assisted projects were already underway. In some cases other states, where UNICEF had on-going projects which required further investments to accelerate implementation, were also included. The objectives of each of the project components are presented in chapter 4 below.

4. ACCOMPLISHMENTS

4.1 Country Overview

The Rural Water Supply and Sanitation Programmes of the Government of India and the State Governments continue to make good progress towards the World Summit sectoral objectives, which are:

a. Universal access to safe drinking water.
b. Universal access to sanitary means of excreta disposal.
c. Eradication of guineaworm disease.

A brief description of each of the ten components of the Dutch-assisted project is included in this chapter, highlighting the justification for the component, its objectives, modalities for its implementation and progress.

4.1.1 Water Supply

UNICEF support for rural water supply in India dates back to the sixties, with a major GoI/UNICEF thrust to address the rural water supply problem during the Fourth Plan Period (1969-1974). Today, India's Rural Water Supply Programme (RWSP) is one of the largest, and among the most successful programmes of its kind in the world, with an estimated 77 percent of the 627 million rural population (1991) provided with access to safe water, bringing the global goal of universal access by the year 2000 within reach. Access to safe drinking water is defined in terms of providing one handpump/standpost for 250 people, 40 litres per capita per day (lpcd) in normal terrain and 70 lpcd in desert areas, within a distance of 1.6 kilometers horizontally, or 100 metres vertically in hilly areas.

4.1.2 Environmental Sanitation

India has a very low household latrine coverage. Results of the National Sample Survey (1989) indicate that only 11 per cent of rural and 62 per cent of urban households had a latrine. Present rural coverage is estimated at 20 per cent. Even among these households, not all members seem to use the latrine. Children come out as a distinct group in this regard. A survey carried out by UNICEF in 15 districts in 1992, revealed that among households with a latrine, while more than 90 per cent of the adult members reported using the latrine regularly, the corresponding rate for children in the 6-14 year age group varied from 15 to 25 per cent in most districts, while in some districts even lower rates were found. Similarly, in most districts, a very low proportion of children used footwear while going out. It is therefore not surprising that worm infestations among school children are a common phenomenon in many areas.

GoI/UNICEF cooperation in the field of environmental sanitation commenced in 1983, gaining further momentum when the Central Rural Sanitation Programme (CRSP) was launched in 1986 and rural sanitation was included in the Government of India's 20 Point Programme. Household latrine coverage is estimated at 20 per cent (1996), leaving the Global Goal of universal access still a major challenge. The Rural Sanitation Programme (RSP) is primarily household-oriented and dependent on household attitudes and behavioral patterns. In 1989, latrine coverage was estimated at 11 per cent, of which eight per cent had been achieved through private initiative.

Status of Global Goals, Rural Water Supply and Sanitation, 1996

Goal	Norm	Status at the beginning of the Decade	Current achievement (1996)	Mid-decade Goals	End-decade Goals
Access to safe drinking water	One spot source for 250 people, at 40 lpcd within 1.6 km horizontal distance in the plains or 100 m vertical distance in hilly areas	74%	77%	81%	100%
Access to sanitary means of excreta disposal	A sanitary latrine for each household	11%	20%	20%	100%

4.1.3 Guineaworm Eradication

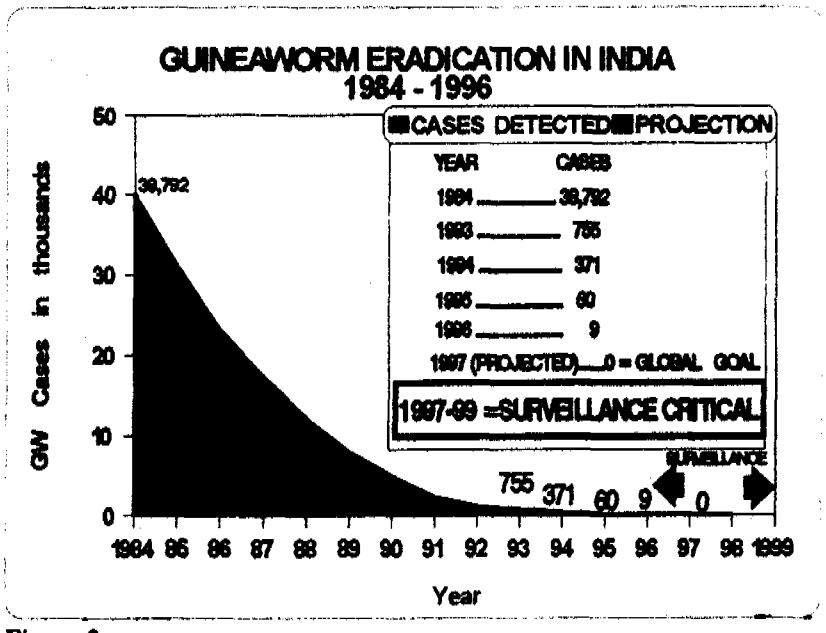


Figure 2

GoI/UNICEF cooperation for the eradication of guineaworm disease was initiated in 1984. Impressive gains have been made in the twelve years since. It is anticipated that India will be free of the disease by 1997. Total eradication of the disease can be declared after a three-year surveillance period, provided no new cases are detected. Guineaworm cases have declined dramatically, from 39,792 in 1984 to 371 in 1994 and to only nine cases in 1996. During this period, the number of endemic villages decreased from 12,840 to three. In India, Rajasthan is now the only guineaworm-affected state, with just one affected district (see Figure 1).

Status of Global Goal, Guineaworm Eradication, 1996

Goal	Norm	Status at the Beginning of the Decade	Current Achievement (1996)	National Goal 1997	End-decade Goal 2000
Guineaworm Eradication	Number of guineaworm cases and affected villages	4,798 cases in 897 villages in six states	Nine cases in three villages in one state	Zero case	Total eradication by 1999 (after a 3-year surveillance period)

4.2 CDD-WATSAN Strategy

4.2.1 Background

As mentioned earlier, in India, dehydration due to diarrhoeal diseases continues to be a major killer of children below five years of age. Diarrhoea cases account for up to 40 per cent of paediatric beds and more than one-third of paediatric out-patient visits in peak seasons of the year.

The Control of Diarrhoeal Diseases - Water and Sanitation (CDD-WATSAN) strategy aims at reducing the diarrhoeal morbidity by increasing the use of safe drinking water and sanitary facilities, promotion of domestic and personal hygiene, and proper diarrhoea case management. By adopting sectoral convergence, this comprehensive strategy aims to improve health and reduce morbidity. Project interventions are in those districts of six states where implementation of the CDD-WATSAN strategy had already been started in 1993-94.

4.2.2 Objectives

- Promoting key practices for the prevention of diarrhoea, including motivating people on the safe use and handling of water for personal and domestic use, safe disposal of excreta, including that of infants and young children, handwashing with soap before eating or handling food and after defecation/disposal of child's stool, exclusive breast feeding for infants during their first six months, and immunisation against measles.
- Improving access to safe sources of water supply, sanitation and health services, including the provision of a safe water source for every 150 people with a per capita consumption of 40 litres per day, community-based maintenance of water sources for sustainability, low cost options for sanitary facilities, availability of ORS packets and access to measles immunisation at village level.
- Promoting key practices for the proper management of child diarrhoea, including timely administration of ORT, continued feeding and seeking timely and correct referral outside the home.

4.2.3 Project Areas

This component is implemented in six districts in six states: Kamrup (Assam), Ranchi (Bihar), Panchamahal (Gujarat), Mysore (Karnataka), Alleppy (Kerala) and Allahabad (Uttar Pradesh).

4.2.4 Achievements

All achievements detailed in the tables on these pages refer to work done during the reporting period, May 1995 till November 1996. ***These accomplishments are in addition to earlier work done before the start of this Dutch-funded project.***

Sln	Type	Participants (M / F)
Water Supply:		
1	PHED/Panchayat functionaries	427
2	Training of trainers	145
3	Handpump caretakers	5,032 / 1,500
4	Handpump mechanics	1,125 / 97
Sanitation:		
5	Trainers	399
6	District level functionaries	568
7	Block level functionaries	473
8	Masons	1,506 / 20
10	Orientation of health staff	449
11	Village-level motivators	2,570
12	Village WatSan Committee	2,450 / 1,276
13	Panchayat members	326

Water Supply		
Sln	**Type**	**Achieved**
1	Borewell installed with IMIII pump	296
2	Tubewell installed with TARA pump	1,900
3	Borewells successfully rejuvenated	99
4	Traditional sources upgraded	250
5	Rooftop rainwater harvest tank built	52

- **Training.** Training includes a wide range of courses encompassing core groups of implementors, sectoral functionaries, NGO functionaries, motivators, Panchayat members and village WatSan Committee members. The various training courses and the participants trained so far are given in the table at left. Training and orientation related to the promotion of hygiene accelerated markedly during this reporting period. In support of community-based maintenance of handpumps, training was given to village handpump mechanics and handpump caretakers. While nearly one-third of the caretakers trained were women, it has been more difficult to attract women for training as pump mechanics. Most of the motivators are women. About a quarter of the WatSan committee members who were trained are women. It has been very difficult to attract women to work as masons for the construction of household latrines.

- **Water supply.** In most focus districts, the conversion of India Mark II to India Mark III (IMIII) pumps and/or the installation of additional IMIII or TARA pumps continued in selected areas. The IMIII and TARA pumps are easy to maintain, which facilitates the involvement of user communities in the maintenance and repair of their pumps. Training and orientation of community representatives, handpump caretakers and mechanics is done in conjunction with the installation of new handpumps.

In Assam, PHED decided to expand community-based O&M to all 23 districts in the State, while their procurement of nearly 3,000 TARA pumps is in progress. The use of bamboo-reinforced rainwater harvesting tanks is spreading in this State. There was some delay in the procurement of IMIII and TARA handpumps, which slowed implementation. The pace of installation of IMIII handpumps will accelerate in 1997. Future reporting will include an estimate of the overall water supply situation in the focus districts.

Sanitation		
Sln	Type	Achieved
1	Household latrines	31,319
2	Institutional latrines - schools	139
	- do - - Anganwadi centres	45
3	Production centres set up	4
4	RSM set up	2
5	Village garbage disposal introduced	130
6	Village drainage improved	11

Water Quality		
Sln	Type	Achieved
1	Water quality surveillance: villages covered	1,067
2	Environmental improvement: spot sources covered	3,299

Community Organisation and Social Mobilisation		
Sln	Type	Achieved
1	Village contact drives	885
2	Mothers' meetings	1,914
3	Wal paintings/slogans (villages)	404
4	Exhibitions / fairs	129
5	PRA camps (villages)	10

Health		
Sln	Type	Numbers
1	DTUs established	58
2	ORT corners established	135
3	ORS depots set up	247
4	Revolving fund for ORS set up	0

- **Sanitation.** The seven elements of the sanitation 'package' have been vigorously promoted. Achievements in terms of latrines constructed must be seen in the context of the integrated CDD-WATSAN approach, encompassing water supply improvements, better sanitation and improved hygiene practices, which result in an overall improvement of personal, home and village hygiene.

- **Water quality.** Pilot studies have shown that bacteriological contamination of borewells is disturbingly widespread. In most project districts, efforts are made to improve the handpump surroundings to prevent contamination of borewells. In Allahabad and in Kamrup, village-level water quality monitoring, using portable water test kits, has been introduced.

- **Community organisation and social mobilisation.** A large number of village contact drives were conducted, during which villagers were reached with health and hygiene messages at their doorstep. Handpump caretakers and mechanics were also identified during such events. Mothers' meetings continue to be popular and effective fora for mothers to learn and share information crucial to the upbringing of their children.

- **Health.** Sanitation kits containing items such as soap, nail-cutters and even a kit for testing the iodine content of household salt were prepared and distributed to children in 200 schools in Ranchi.

- Excellent progress was recorded in the setting up of ORT corners in health centres and ORS depots in villages, where achievements have exceeded plan-of-action targets. The concept of improving access to oral rehydration solution packages for mothers by setting up depots in the villages is meeting a significant demand. Studies planned for 1997 will analyse the impact on the overall health status of children as a result of the CDD-WATSAN initiative.

4.2.5 Constraints

In some districts, adequate UNICEF staff time was not consistently available, which slowed implementation. While project design envisages a major role for NGOs, it has not always been easy to identify competent and capable organisations among the proliferation of NGOs. Slow UNICEF procurement of supplies also had a negative impact on implementation in several states. In Gujarat, drought conditions prevented GWSSB from giving adequate attention to project implementation.

4.3 Rural Sanitary Marts

4.3.1 Background

In India, over 100 million rural and 14 million urban households do not have a latrine. The subsidy-linked sanitation programme, hitherto promoted by the government, and confined to selected areas in a state, leaves the majority of the population out of its purview. India would require an investment of over Rs. 30,000 crores (around US $ 8,500 million) if each household were to have its own, subsidised, latrine. It is neither possible nor desirable to get this amount from the government exchequer. In most villages, there are always some households willing to have their own latrines without waiting for government subsidy. According to the National Sample Survey (1989), eight per cent of households in India had constructed latrines on their own, while only three per cent depended on the government subsidy. What people need is the know-how and easy availability of construction materials at a reasonable price and a convenient distance. This calls for developing an alternative to the subsidy-based system for promoting latrines. Setting up Rural Sanitary Marts (RSMs) is one of the options in this regard.

The RSM is a one-stop shop to meet all the sanitation requirements of a community. It is a commercial enterprise with a social objective, with no visible subsidy. UNICEF conceived the RSM concept and supported the establishment of RSMs on a limited scale from late 1991. At present nearly 400 RSMs are in operation in the country. Most of these were established in 1993. The initial success of RSMs encouraged GoI to accept this concept and adopt the same at national level. The RSM is now an important part of GoI's Central Rural Sanitation Programme (CRSP) guidelines as an alternate delivery system to accelerate sanitation coverage.

This project component, although implemented in three states only, will facilitate replication of the RSM concept on a wider scale all over the country and will be one of the most cost-effective and sustainable options for accelerating sanitation coverage in India.

4.3.2 Objectives

The major objective is to create an effective delivery system for accelerating sanitation coverage in rural and peri-urban areas. The specific objectives are:

- To establish 100 RSMs, selling materials required for the construction of not only sanitary latrines and other sanitary facilities but also those items which are required as a part of the sanitation package.
- To provide counselling to individuals interested in having their own sanitary facilities and the technical inputs or services needed for the same.
- To create, over a period of time, an information dissemination centre for all software aspects of sanitation.
- To develop a climate for commercialising the provision of sanitary facilities in rural and peri-urban areas, thereby attracting private entrepreneurs to come in.

4.3.3 Project Areas

The project has been taken up some districts in Andhra Pradesh, Karnataka and Uttar Pradesh, which show potential for the establishment of RSMs. These districts have been selected on the basis of: i) level of agricultural prosperity, ii) population density, iii) literacy levels, vi) value of agricultural produce marketed, v) communication links, vi) availability of suitable agencies.

4.3.4 Achievements

- Activities relate to the various stages of establishing RSMs and the monitoring of their performance. Under this project component, 100 RSMs are planned. Till end-1996, 82 RSMs have already been set up. Most of these RSMs opened their doors in the last quarter of 1996.

Identification of potential centres/ agencies		
Sln	Type	Achieved
1	Identification of market towns	91
2	Socio-economic analysis of market	81
3	Identification of agencies	32

Training		
Sln	Type	Achieved
1	Orientation of RSM organisers	45
2	Training of RSM managers	93
3	Training of masons (RSM)	150
4	Training of masons (production	20
5	Training of motivators	674

Establishment of RSM		
Sln	Type	Achieved
1	RSMs established	82
2	Working capital support	82
3	Managerial / marketing support	70

Establishment of Production Centre		
Sln	Type	Achieved
1	Production centres established	18
2	Working capital support	18

- The RSM strategy aims at achieving the social objectives of sanitation promotion with no visible subsidies. As RSMs are to function on a strictly commercial basis it is important that both the location of each RSM and the agency that will run it are carefully identified. Through socio-economic analysis, 91 market towns have been identified as having potential for operating RSMs. These are located in 34 blocks of 22 districts, with 990 hinterland villages. Similarly, the antecedents of 32 potential agencies for running RSMs have been carefully checked.

- Training is crucial, not only for the operating agencies but also for the functionaries of various categories, as well as the masons and motivators. A number of training courses have already been conducted, as shown in the table to the left. These courses were conducted using a common training module developed by a group of experts with business practice and teaching background.

- Each RSM needs working capital to start with. One quarter of the estimated annual turnover is sanctioned to start its operation. Adequate working capital has been provided to the 82 RSMs established under this project.

- Some RSMs have production centres which manufacture items for household latrine construction, to take advantage of economy of scale. Through a system of networking, their produce is distributed among neighboring RSMs, based on their demand. Against a project target of 20, 18 production centres have already been set up.

4.3.5 *Constraints*

The strategy was conceived by UNICEF and introduced on a trial basis in Uttar Pradesh where the response was found to be overwhelming. Most of the achievements shown above have also been accomplished in Uttar Pradesh. While initial efforts focused on Panchayat Udhyogs, it was found necessary to seek other partners because not all of these Udhyogs were found equally effective. Identifying suitable NGO partners took considerable time and effort, which caused delays. Through consistent advocacy UNICEF has been able to convince government counterparts in Andhra Pradesh and Karnataka to take up the RSM strategy. While these two states have initiated project activities, more work is required to speed up implementation.

4.4 Rainwater Harvesting and the Empowerment of Women

4.4.1 Background

This project component seeks to promote rainwater harvesting as a supplementary source of safe water through the collection of rain water from roof-tops into simple ferro-cement structures to be constructed by women masons. This group of women masons will gain skills in the construction, maintenance and repair of the ferro-cement structures and will subsequently be able to find employment as masons. The project is implemented in two states by district administrations and selected NGOs.

4.4.2 Objectives

- Provide supplementary sources of safe water to about 12,000 previously unserved people in difficult areas.
- Minimise the effort spent by women in collecting water thereby providing them time for other activities.
- Enhance awareness of the importance of safe water and of water related diseases.
- Impart technical skills to enable women to effectively contribute to family income.
- Study available low cost technology options for selecting further technical skills with reference to women.

4.4.3 Project Areas

This project component is implemented in several districts in Maharashtra and Uttar Pradesh.

4.4.4 Achievements

The introduction of rainwater harvesting has generally met with a positive response from the major stakeholders. There is good progress in working with NGOs and in the training of women masons for the construction of tanks. Social mobilisation work has resulted in encouraging user acceptance and participation. The construction of tanks has commenced in both states. Investigating further income generating activities for women has started, but needs more attention. The exact extent of time savings for women on water collection resulting from the use of these water tanks, and the use of time saved, will become clearer after households have adjusted their water use patterns following several seasonal periods of rainfall and dry weather.

Training / orientation		
Sln	Type	M / F
1	Orientation of engineers	33 / 0
2	Orientation of district/block	46 / 19
3	Orientation of district/block	16 / 24
4	Training of women masons	2 / 82
5	Training of NGO functionaries	17 / 6
6	Training of Panchayat functionaries	20 / 6

- During 1996, orientation of administrators and technical personnel as well as the training of masons has been given much attention. The project target of 80 women masons has already been exceeded. As a result, there is now capacity in each of the districts where rainwater harvesting work has been taken up to assist households in the construction of their tanks and to educate them on the proper use of the stored water, and on the maintenance of the roof, gutters and tanks.

Provision of water supply		
Sln	Type	Achieved
1	Preparation of moulds	22
2	Construction of RWH structures	103

- More than 100 households were assisted to construct their rainwater harvesting tank, against a project target of 1,000 tanks. Tank volumes range from 5 m^3 to 10 m^3, depending on local rainfall patterns, area of the roof suitable for water collection and the number of family members. With work in progress in five districts, the number of households with tanks will rapidly increase over period prior to the 1997 monsoon.

- During 1996, efforts focused on starting up rainwater harvesting activities, which required substantial education and advocacy at various levels of the concerned district administrations, water supply agencies and NGOs. In Maharashtra, some women were given training in plumbing, which could be of use in gaining future employment.

Hygiene education		
Sln	Type	M / F
1	Villagers trained	50 / 34
2	Village level motivators	10 / 10
3	District/block officials	45
4	NGO group	1

- Some efforts were made to bring hygiene education to the households opting to construct their rainwater tank. As a result, demand for household latrines increased. More concerted efforts will be necessary during 1997.

- In each of the districts, one or more local NGOs are involved in the execution of this project component. The role and responsibilities vary, depending on the in-house capabilities and strength of the individual NGOs.

• A reference booklet on rainwater harvesting in Marathi has been developed and distributed to the masons and the user households in Maharashtra.

4.4.5 Constraints

To demonstrate the approaches and the technology, the UNICEF Field Offices in Mumbai and Lucknow decided to spread this project component over several districts in Maharashtra and U.P. However, this places a heavy burden on the limited UNICEF staff to provide adequate support and to monitor progress. Observations of the few tanks which collected water towards the end of the 1996 monsoon seem to indicate a need to educate the households better about the importance of using their stored water for drinking purposes only, and to preserve water for use mainly in the dry months of April, May and June.

4.5 Community-Based Handpump Maintenance with Women in Focus

4.5.1 Background

The establishment of Community-Based Handpump Maintenance (CBHPM) systems aims to transfer accountability for management of such water systems from the government agencies to the village communities. As mostly women are the managers of water, emphasis is given to their full participation in these community managed systems. To enable women to participate in a meaningful manner, capacity building for women representatives is a priority. Under the Dutch-funded project, the Community-Based Handpump Maintenance model will be demonstrated in three states, for future wider replication.

4.5.2 Objectives

- Establish a sustainable CBHPM system as a model for replication by the government.
- Empower women by developing skills related to water management and the control of diarrhoeal diseases.
- Create awareness about water, sanitation and health linkages among approximately 500,000 people.

4.5.3 Project Areas

This project component has been taken up in some districts of Andhra Pradesh, Gujarat and Uttar Pradesh.

4.5.4 Achievements

• As CBHPM is not a new concept to most states, there has been little delay in taking up or continuing CBHPM activities. Implementation of this project component has taken the benefit of lessons learned regarding CBHPM in earlier years. Progress has been smooth in Sonbhadra and Mahoba districts in U.P. as well as in Rangareddy in A.P. In Rajkot, Gujarat, it has been much more difficult to introduce community-based maintenance of handpumps.

Training, orientation and social mobilisation		
Sln	Type	M / F
1	Training of trainers	52 / 47
2	Training of HP caretakers	75 / 375
3	Training of HP mechanics	135 / 25
4	Training of NGO functionaries	25 / 18
5	Training of Panchayat functionaries	570 / 440
6	Village contact drives	100
7	Workshops	4
8	KAP studies/surveys	3

• The recommendations of the 1996 national workshop on O&M in water supply include many elements of CBHPM systems as promoted and pioneered in UNICEF supported demonstration projects. The concept of village water and sanitation committees, women caretakers and women mechanics has found considerable acceptance. While health and hygiene education are included in CBHPM schemes, the extent and impact of creating water, sanitation and health awareness among the public in areas covered by CBHPM are yet to be ascertained.

Provision of water supply		
Sln	Type	Achieved
1	IM III handpumps	393
2	HP platforms constructed	161
3	Old HP platforms repaired	136

• Against a project target of 1,800 IMIII handpumps, only 393 could be realised till end-1996. Delays in the procurement of materials slowed the planned installation and conversion of handpumps. With supplies now on order, new installations and conversions are picking up. UNICEF provides IMIII pumps, riser pipes, connecting rods, tools and initial spares. Community awareness of water quality and pollution and action for protecting water sources is generated through the use of portable water quality test kits and H_2S bacteriological test vials.

• Community capacity building and awareness creation were given considerable attention. While the project plans to train 1,800 women caretakers, only 375 women could be trained till end-1996. As shown in the table, a significant proportion of participants in training, orientation and mobilisation activities consists of women. Efforts focus on building local capacity to manage handpump maintenance and repair, and reducing dependency on outside help to cases of major disasters only. The village contact drives which were organised culminated in the identification and training of handpump caretakers and mechanics. The Panchayat functionaries who were trained are expected to mobilise communities to contribute towards maintenance and repair of handpumps, besides monitoring the use of the handpumps by the community households.

• UNICEF has adequate relevant training materials available , which are widely used in the courses conducted under this project component.

• Personnel from the print, electronic and folk media were oriented on different aspects of community-based handpump maintenance, to enable them to identify and disseminate information on safe water and environmental sanitation through newspapers, puppetry, dances and by radio.

Hygiene education		
Sln	Type	M / F
1	Villagers participating in training	130 / 100
2	Handpump mechanics / caretakers	30 / 60
3	Media (print, electronic, folk)	45
4	NGO groups trained	22

4.5.5 Constraints

The Government of Andhra Pradesh has had very limited funds to match UNICEF project inputs, which has slowed implementation. For many households in the Rangareddy and some of the other project areas, handpumps are a secondary source of water, which impedes efforts to generate user participation in, and contributions for, pump maintenance. Delays in the supply of project hardware has hampered implementation, as capacity building should proceed in conjunction with the introduction of VLOM pumps. In Gujarat, the absence of a WES professional till mid-1996 caused delays. Drought conditions in parts of the state also affected the rate of implementation as GWSSB was preoccupied with drought relief measures. Rapidly falling groundwater tables, often to below the maximum installation depth of 30 mtrs recommended for IMIII pumps, hampered conversions. The Government of Gujarat has not given a high priority to establishing community-based systems for operation, maintenance and repair of handpumps in the state.

4.6 School Sanitation - A Strategy to Promote Sanitary Habits in Schools

4.6.1 Background

A school and its environment can be an ideal ground to develop sanitary habits among children. This is mainly because children are far more receptive to new ideas than the old and can be influenced through the teachers whom they generally hold in high esteem. Besides, schools can serve as demonstration centres for the adoption of a sanitation package which could be extended to the households and to the communities at large.

4.6.2 Objectives

The project aims at developing sanitary habits amongst school children (particularly those in the primary age group) and make the school, its teachers and the students the focal point for promoting a sanitation package among the households and the community. The specific objectives of the project are:

- Develop skills among the school teachers on the sanitation package.
- Create awareness and motivate the school children on the various sanitation themes.
- Provide water and sanitary facilities in the school premises so that children can practice hygiene as taught.
- Build the required linkage between the school and the community through fora like the Parents-Teachers Association (PTA), Youth Clubs and Women's Groups.

4.6.3 Project Areas

This project component is being implemented in five districts: Ranchi (Bihar), Ambala (Haryana), Mysore (Karnataka), Periyar (Tamil Nadu) and Haridwar (Uttar Pradesh). An average number of 300 primary schools would be taken up per district and these will constitute around 20 per cent of the total number of primary schools in each district. This minimum coverage is desirable from the point of view of making some demonstrative impact, not only within the district, but also to replicate the experience in other districts.

4.6.4 Achievements

- The school sanitation component of the project has reached 579 of the planned 1,500 primary schools. Baseline data on existing practices among school children, households and communities has been collected for 732 schools. Guidelines on the implementation of the school sanitation project and training modules for school teachers were developed and distributed to the implementing agencies in all five districts.

Training, orientation and social mobilisation		
Sln	Type	M / F
1	Orientation of district/block	851 / 15
2	Training of trainers	11 / 18
3	Training of teachers	194 / 493
4	Training of NGO functionaries	2,490 / 30
5	Training of Panchayat functionaries	2,777 / 40
6	Training of HP caretakers	0
7	Training of HP mechanics	0
8	Village sanitation drives (villages)	188
9	Inter-school competitions	46
10	School health check-ups	Once
11	Wall paintings	207

Hygiene education		
Sln	Type	M / F
1	Teachers	100 / 210
2	Anganwadi workers	0 / 128
3	PTA members	79 / 12,469
4	District/block officials	11
5	NGO groups	5

- Training of different categories of personnel was undertaken in the five project districts. Categories included teachers, parents, Panchayat members, PTA members, anganwadi workers and opinion leaders. In Ambala, Mysore and Periyar alone, nearly 7,000 persons were trained during the reporting period. Reports from Ambala and Mysore indicate that 369 of those trained in these two districts were female, whereas 596 were male. In Ambala, where customs do not allow rural women to freely participate in local governance, 30 of 119 Village Panchayat members trained were women.

More than 200 wall paintings were put up on school walls in Mysore and Ambala. The District Administration of Ambala also painted measuring scales on the walls of schools so that the height of students can be readily measured during school health check-ups.

- Awareness creation activities were taken up in full swing during the reporting period. These included village sanitation drives and inter-school competitions in 46 villages in Mysore; sanitation camps and sanitation exhibitions for parents and other community members in 142 villages in Ambala.

• Paintings on different aspects of sanitation and models of soakage/garbage pits prepared by children were displayed at these exhibitions. This activity not only made children become more conscious of the need for sanitation and hygiene but also helped to bring the parents closer to the school, thus motivating parents to voluntarily contribute towards the maintenance of school water and sanitation facilities.

Physical facilities		
Sln	Type	Achieved
Sanitation:		
1	Latrines for 188 schools	213
2	Latrines for anganwadis	0
3	Urinals for 25 schools	50
4	Drainage around water sources	20
5	School garbage disposal	200
Water supply:		
6	IM III handpumps (new installations)	25
7	TARA handpumps	12
8	Drinking water storage tanks	630

• Water and sanitation installations were provided in schools in all the five districts during the reporting period. These included 213 latrines and 50 urinals. Construction of tanks for storing drinking water and water for flushing the latrines has started in Ambala. For the same purpose 625 drums have been provided to schools in Periyar.

Both India Mark III and TARA handpumps were installed during the reporting period, including 25 IMIII in Mysore and 12 TARA pumps in Ambala.

• Water quality surveillance by teachers was an important activity undertaken by schools in Periyar. More than 5,000 water quality testing kits containing H_2S strips were distributed in schools, allowing teachers and students to monitor the quality of their drinking water. Earlier plans to introduce defluoridation filters in Periyar schools have been abandoned, as UNICEF lacks capacity to facilitate this introduction in a responsible manner. In some districts, the Panchayats contribute towards the cost of drilling wells and the construction of handpump platforms.

• Development of communication materials for creating awareness among teachers and students was undertaken by the Periyar and Ambala District Administrations. A set of six booklets containing stories, poems, skits on different components of sanitation was developed by the Ambala District Administration. Copies of these sets were distributed to each of the 400 schools covered under the Ambala School Sanitation Project for use as supplementary reading material by children.

• Posters on the seven components of sanitation were developed both in English and Hindi and distributed to schools in Ambala, Haridwar and Ranchi for display on the school walls. This poster is now under translation into Tamil and Kannada.

4.6.5 Constraints

The school sanitation projects for Ranchi and Haridwar took considerable time to prepare. In some districts it has been difficult to attract interested, capable and committed NGOs to support school sanitation. The late supply of materials for water supply improvements also hampered progress to some extent. The general elections held in May 1996 particularly affected progress, as teachers and Panchayat members were required to spend considerable time on election affairs. Floods in Ambala in the 1996 monsoon months interrupted work for some time. Frequent tranfers of key officials slowed progress, especially in Haridwar and Ambala.

4.7 Water Supply Sustainability - Rejuvenation of Borewells

4.7.1 Background

The borewell handpump system is the backbone of the rural water supply programme in India. The borewell-handpump is effective, inexpensive and potentially sustainable through community managed maintenance and repair. Although hydro-geological investigations along with remote sensing technology have been used in India for quite some time, about 14 per cent of the boreholes drilled in hard rock formations in the country are unsuccessful.

The average drilling cost for one borewell with an average depth of 60 meters comes to US$ 770. Given that 150,000 bores are drilled annually, the loss from failed borewells is about US$ 16.7 million.

One of the most effective means for turning a failed borewell into a successful one is the technique of hydrofracturing. This involves the injection of water into the borewell at very high pressures which cleans, widens and expands the water-bearing fractures in the rock formation. Thus a nearly dry borewell can be rejuvenated into a productive well, with a success rate of about 70 per cent. As a result of the proven benefits of hydrofracturing (33 hydrofracturing units are now operating in India), a local industry is beginning to emerge. UNICEF is promoting the development of this industry through advocacy and liaison with local manufacturers.

In some areas, the simpler and even less costly technique of air washing borewells using tractor-mounted compressor units can be used successfully. Air washing is used when the yield of a borewell is reduced because of siltation or encrustation. In addition, air washing has been shown to reduce the high iron content of borewell water. This technique has been used successfully in Orissa over the last several years.

4.7.2 Objectives

- Provide safe water sources to one million rural people through the rejuvenation of defunct borewells using the techniques of hydrofracturing and air washing.
- Reduce the need for imported hydrofracturing units through the development of local manufacturing capacity.
- Capacity building of government personnel in hydrofracturing and geophysical investigation.

4.7.3 Project Areas

This project component has been taken up in A.P., M.P., Bihar, Gujarat, Maharashtra, Rajasthan and U.P.

4.7.4 Achievements

- While the project agreement indicates three hydro-fracturing units (HFUs) and 15 tractor-mounted compressors (TMCs), funds were adequate to procure three HFUs and 19 TMCs (tractors for 15 TMCs paid for from General Resources). The procurement of hydro-fracturing units and tractor-mounted compressors requires considerable lead-time. The equipment is expected to be commissioned during the final months of 1996 and the first half of 1997. Work towards the objective of rejuvenating 2,100 borewells can only start after the equipment is commissioned.

- The three hydro-fracturing units procured with Dutch funds will be used in Bihar, M.P. and T.N. by end-April 1997. Rehabilitation of borewells will progress at an expected rate of 80 wells per HFU per annum. The three units have been sourced in India. With the exception of the high-pressure pump and a few other items, the components of the pump are all indigenously manufactured. UNICEF will continue to support the agencies operating the HFUs with imported spare parts necessary to keep the units operational.

- Tractor-mounted compressors have been supplied to A.P., Bihar, Maharashtra and will shortly be delivered to M.P. and Rajasthan.

- The process of commissioning the HFUs and TMCs includes the training of the crews which will operate the units. Bi-annual service training by company engineers is provided for all HFUs UNICEF has provided throughout India. During these on-site events, the HFUs are thoroughly checked and serviced, while the operators are given instructions on HFU use and maintenance.

Capacity building		
Sln	Type	Achieved
1	Orientation of govt	5
2	Training of master trainers	8
3	Training of engineers	35
4	Training of HFU crew members	37
5	Training of TMC crew members	2
6	Training on geophysical equipments	42
7	Training on hydrofracturing	5

- For monitoring the utilisation and performance of the HFUs, a Hydro-fracturing Monitoring System (HMS) software has been designed and introduced in the agencies operating the units and in the UNICEF Field Offices. It is the responsibility of the Field Offices to collect and analyse HFU output data, using this customised software, and share summary reports with UNICEF New Delhi on a quarterly basis. The central module of HMS is installed in the Rajiv Gandhi National Drinking Water Mission, to facilitate monitoring by the central government.

Unfortunately, monitoring of HFU performance has not been up to the mark, and not enough data has been compiled to present a comprehensive picture of the utilisation and performance of the HFUs for 1995 or 1996. Significant improvements are planned for 1997.

- Project funds have been used to provide a range of geo-physical equipment, including resistivity meters, borehole verticality measuring instruments, Resix software and water level recorder, for the rural water supply agencies in various states.

4.7.5 Constraints

In several states, government funds are insufficient to operate and maintain the expensive hydrofracturing units, resulting in very low output. Reports from the field indicate that in some states the management of the HFUs requires improvement. Given the high cost of HFUs, it is all the more important that substantial outputs are realised through adequate management. UNICEF and GoI are actively pursuing the introduction of computerised monitoring of hydro-fracturing at the centre and in the states. UNICEF has experienced long delays in the procurement of the four-wheel drive TATA trucks required for the mounting of the HFUs.

4.8 Environmental Protection and Management of Water Resources

4.8.1 Background

During the last two decades, the use of ground water has increased significantly in India. While domestic water supply needs constitute less than ten per cent of total ground water withdrawals, widespread and rapidly increasing pumping for irrigation and localised heavy withdrawals for industry have resulted in a lowering of ground water levels. This threatens the sustainability of drinking water sources such as borewell handpumps, particularly in drought-prone areas, in terms of both quality and quantity. As ground water will remain the principal source of water for rural supplies, it is essential that these resources are better protected and judiciously used. To ensure the protection of drinking water sources, UNICEF advocates a two-pronged strategy, including watershed management and the development of alternative water sources. Key components of this approach are advocacy for legislation for the prevention of ground water exploitation that threatens drinking water sources and the involvement of communities in the management of ground water resources.

In some parts of the country the problem transcends ground water management due to conditions such as ground water levels having already dropped below exploitable levels, the complete absence of ground water, serious problems with ground water quality, or very difficult terrain that precludes the drilling of wells. In these areas it is necessary to develop alternative water sources or to treat, in a cost effective and sustainable manner, polluted water to make it safe for domestic consumption.

4.8.2 Objectives

- Protect ground water resources through better management, usage planning, ground water recharge.

- Promote the use of alternative sources of water for domestic use in areas with poor access, or with polluted or scarce ground water resources.

4.8.3 Project Areas

This project component is implemented in Gujarat, Madhya Pradesh, Maharashtra and Tamil Nadu.

4.8.4 Achievements

GoI and State Governments are funding substantial environmental protection projects, applying the common guidelines for watershed management issued by MRAE in 1994-95. Focus of UNICEF assistance is aimed at arresting and reversing the decline in ground water tables, so that village water supply sources are sustained. As UNICEF staff is relatively new to these projects, the development of specific proposals and plans of action has taken much more time than expected.

Training/ orientation		
Sln	Type	Achieved
1	Orientation of engineers	26
2	Orientation of district/block	18
3	Training of trainers	28
4	Training of NGO functionaries	1
5	Training of Panchayat functionaries	0

Work under this component of the Dutch-funded project includes capacity building for government and NGO personnel, as well as support for the implementation of demonstration projects on micro watershed management.

None of the 500 rooftop rainwater harvesting tanks or the 20 village pond filtering systems under this project could be completed before end-1996.

Progress on demonstration projects:

Gujarat: Rajkot district. A project including groundwater recharge structures of various types, supported by institutional and social mobilisation through training, workshops and advocacy, is planned in three districts with worst environmental degradation as manifested by rapidly falling ground water levels. The project will be funded by GoG and UNICEF on 50:50 basis. The project proposal has been submitted to GWSSB for approval. Under this project, plans are to commence with micro- watershed management activities in ten villages of Rajkot district.

Maharashtra: Gadchiroli, Surgana and Nashik districts. The Mumbai Field Office has prepared proposals for alternative water supply systems and micro-water shed development. Activities include filtration of surface water using horizontal roughing filters/slow sand filters and the collection of surface run-off water from protected areas in ground tanks for villages in the tribal areas of the state.

Madhya Pradesh: Dhar district. The Bhopal Field Office is supporting a project for artificial recharge to ground water. Hydro-geological studies have been completed with the help of the Regional Research Laboratory (RRL) in Bhopal. A plan of action for activities in 15 villages has been prepared by PHED. Interventions include the construction of checkdams and cut-off dykes in streambeds at locations which RRL has determined to be most suitable for maximum recharge on the basis of their hydro-geological investigation work.

Tamil Nadu: Tiruchy and Salem districts. The Chennai Field Office has prepared two proposals: (1) water management practices in the Karaipattanar watershed of Salem and Tiruchy districts, as a model project for the nodal rural water supply agency, TWAD-TN.; and (2) development of alternative drinking water supply sources in the coastal areas. In the Karaipattanar watershed, hydro-geological investigations and water quality surveys have been completed, and plans for further action have been formulated. In the coastal areas, a small project to develop alternate sources for domestic water supply is in progress. Alternative sources include percolation-cum-storage wells, sealed tanks, community rooftop rainwater collection tanks, household rainwater harvesting structures using pre-fabricated concrete rings and ground water structures to tap fresh water in sand dunes. These components are implemented by the District Collectorates and NGOs, with the active participation of the user communities.

4.8.5 Constraints

It took until the second quarter of 1996 to have a water supply and sanitation specialist in the Gandhinagar Field Office, while a new water supply professional was contracted by the Bhopal Field Office.

These staff changes delayed project formulation in Gujarat and Madhya Pradesh. In Gujarat, lengthy procedures required to obtain government approval for the cost sharing aspects of the project proposals have prevented the start of work. Extensive hydro-geological preparatory work has taken a long time, particularly in Madhya Pradesh.

4.9 Integrated Fluorosis Control Project

4.9.1 Background

In many rural areas of 13 states in India, ground water is contaminated with excess fluoride. In these areas, water drawn for drinking and cooking from contaminated dugwells and tubewells can lead to fluorosis, especially among children. Prolonged use of water with excess fluoride can, under adverse conditions, cause skeletal deformities and crippling. When an expecting mother drinks water with excess fluoride, her child may be born deformed, while the mother's breast milk will also contain high levels of fluoride. In addition to affecting the bone structure, prolonged use of water with excess fluoride can cause kidney problems, loss of muscle power, neurological complications and blocking of blood vessels, leading to cardiac problems. Health problems associated with fluoride toxicity are often not recognised as such, largely due to a lack of awareness.

Since late 1993, UNICEF has provided support for the implementation of the Integrated Fluorosis Control Project (IFCP) in Ananthapur district in Andhra Pradesh. This project is using 'fluorosis' as a main entry point to improve the quality of life of the people by building awareness of the importance of safe water, improved sanitation and hygiene, better nutrition and health. Community participation is the focus for operation and maintenance of water supply and sanitation facilities. Some handpump-attached defluoridation plants were introduced, but community management of these units has been difficult to organise and sustain.

4.9.2 Objectives

- Promote the use of water from sources with low fluoride levels, and proper nutrition to prevent fluorosis.
- Promote personal, home and environmental hygiene for better health and well-being among the people.
- Improve access to safe water sources and environmental sanitation, through community management.

4.9.3 Project Areas

The project is implemented in fluorosis affected districts of Andhra Pradesh, Madhya Pradesh and Rajasthan.

4.9.4 Achievements

UNICEF assistance for the control of fluorosis usually complements much larger investments from other sources, often for the construction of piped water supply schemes, bringing water from low-fluoride sources. Construction of piped water schemes is often taken up with little consideration for the considerable recurring costs the operation and maintainance of such schemes will bring. With GoI providing 75 per cent of the funding, and given the popular demand for piped water supplies, it comes as no surprise that state water agencies are more keen to construct piped water supply schemes than low-cost, but less popular, options to ensure safe water supply.

While government funds are generally used for the provision of alternate water sources, UNICEF funds complement these inputs and provide for IEC to create awareness of the risks of using water with excess fluoride, sanitation and hygiene, community-based maintenance of water sources low in fluoride, hydro-geological investigation work, groundwater recharge and the development of home defluoridation filters.

R&D for the development of an activated alumina (AA) based domestic defluoridation (DD) filter continues with Indian Institute of Technology (IIT) in Kanpur. In a number of villages in Dungarpur, Rajasthan, where all water sources have water with fluoride in excess of three ppm, 430 DD filters and 410 Nalgonda-based filters have been introduced in village households, under closely controlled and monitored conditions.

In these villages, a precise baseline of household fluoride intake and manifestations of fluorosis is also being established. AA-based DD filters will similarly be introduced in M.P. and A.P. The current R&D phase includes support for organising village-based regeneration of the activated alumina and the safe disposal of the chemicals used for regenerating the activated alumina. R&D also studies the relation of high TDS and alkalinity and fluoride removal. In late 1996, IIT also took up an evaluation of commercially available DD filters, using aluminium impregnated resin.

Orientation, training and social mobilisation		
Sln	Type	M / F
1	Orientation of district/block	554 / 14
2	Training of trainers	10 / 1
3	Training of HP caretakers	7 / 0
4	Training of HP mechanics	65 / 0
5	Training of NGO functionaries	64 / 14
6	Training of Panchayat functionaries	35 / 0
7	Village contact drives	0
8	Workshops	5
9	Wall paintings	0

Water supply improvements		
Sln	Type	Achieved
1	IM III handpumps (new installations)	144
2	- do - (conversions)	359
3	Households using new/converted	N.A.
4	HP spares & tools	324
5	New HP platforms constructed	246
6	Old HP platforms repaired	1,543
7	Domestic defluoridation filters	1,140
8	Rooftop rainwater harvesting tanks	0
10	Other alternative sources	0

Sanitation improvements		
Sln	Type	Achieved
1	Household latrines	2,205
2	Institutional latrines	126
3	Drainage improvement around water	961
4	RSMs	0
5	Production centres	0

- The promotion of health and hygiene, and education on the links between good nutrition and the effects of using water with excess fluoride have not been given much attention. These crucial aspects of the project will be given more attention in 1997.

- As explained, UNICEF support complements large investments primarily for providing alternative water supplies. Where large piped water schemes are executed, there tends to be less attention for the installation/conversion of handpumps. A relatively small number of IMIII handpumps have been installed during 1996. Delays in the supply of handpumps also hampered the introduction of these VLOM type handpumps.

- Community-based operation and maintenance has been introduced on a limited scale. As explained above, in most of the project districts substantial investments are made to construct piped water supply schemes. In this situation there is comparatively less interest to work on the introduction of community-based maintenance systems for handpumps.

- Little attention has been given to other forms of safe water supply, such as rainwater harvesting, upgrading of open wells or using HRF/SSFs for using pond water. In Ananthapur, 29 checkdams were built in an effort to reduce fluoride levels in the water of borewells located in the recharge zone of these dams. The impact of these dams on fluoride levels will be studied in detail in 1997.

- To the extent possible, sanitation is promoted in conjunction with other work aimed at controlling fluorosis. Approaches are patterned on sanitation promotion work in other focus districts, including attention for developing alternate delivery systems, choice of technology, upgrading, and encompassing a package of sanitation activities. Little attention has so far been given to promote the use of smokeless stoves for a smoke-free household environment.

- UNICEF support has not yet contributed significantly in the area of hydro-geological investigations with regard to the presence of excess fluoride in ground water.

Progress in IFCP districts:

Andhra Pradesh: Ananthapur. This IFC project includes inputs from GoI, GoAP, UNICEF and communities. UNICEF funds are mainly used for sanitation, hygiene promotion, social mobilisation, community-based handpump maintenance and domestic defluoridation units. From 1995, the Satya Sai Baba trust is investing about US$ 60 million for water supply improvements in Ananthapur. This is complemented by a GoI project of about US$ 9 million. These investments compare with an IFCP budget of about US$ 1.8 million. Recently, GoI, GoAP and UNICEF reviewed the Ananthapur IFC. It was decided to re-write the PoA, to consolidate achievements till date and select limited activities for 1997. During 1997, a new project for UNICEF support in fluorosis control in A.P. will be developed by PRED and UNICEF.

Madhya Pradesh: Mandla. GoMP has started implementation of a US$ 3 million project for fluorosis control in Mandla, with 75 per cent of the funds coming from GoI. In Mandla nearly all borewells found to yield water with excess fluoride have been capped, thus creating major water scarcity problems. The project plans to provide water from new protected dugwells, through piped schemes and handpumps. UNICEF funding will be to supplement the hardware provided by GoI/GoMP: sanitation, hygiene promotion, IEC work, CBHPM, geophysical investigations for groundwater recharge and DD filters.

4.9.5 Constraints

Defining the focus of UNICEF's support in Ananthapur and Mandla, given the much more substantial funding from other sources, primarily for providing piped water supplies, has resulted in long delays in finalising Plans-of-Action. As the village-level management of AA-based DD technology is still being developed, it is not yet possible to introduce these domestic filters on a much larger scale.

4.10 Management Information Systems for WATSAN

4.10.1 Background

Sectoral programme management at central and state government levels is responsible for programme planning, funding and monitoring. For effective programme planning and implementation, a strong need for interactive Management Information Systems (MIS) was felt. Since 1985, a number of initiatives on MIS have been taken by the central and state governments.

UNICEF has played a supporting and participatory role with the (former) Ministry of Rural Development (MRD), GoI and state-level counterparts in the establishment of effective MIS tools and systems for the rural water supply and sanitation programmes. Since 1987, UNICEF has supported computerised MIS, targeted at specific aspects of the water-well drilling and handpump projects. In 1989-90, UNICEF supported MRD to develop MIS for monitoring handpumps, mini-piped water supplies and sanitation components in national and state programmes.

MRD has adopted a strategy of computerising sectoral operations and reporting at national and state levels. In 1991, the Gujarat Water Supply and Sewerage Board, with support from MRD started the development of comprehensive state-specific MIS, including field level computerisation. The system included computer software, which allows basic processes to be captured, leading to completion of works, and automatic updating of village level base-line information. A number of larger states, including Madhya Pradesh, Andhra Pradesh, Bihar, Orissa, Uttar Pradesh and Karnataka are trying to establish computerised systems for their operations and monitoring.

In 1994, UNICEF embarked upon a programme of conducting state-level WATSAN MIS orientation workshops for state governments to develop comprehensive state-specific computerised MIS. This initiative resulted in the state departments of Andhra Pradesh, Bihar, Karnataka, Kerala, Madhya Pradesh, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh undertaking the formulation of project proposals for establishing computerised MIS. UNICEF is supporting the development and implementation phases of such projects in the states of Orissa and Madhya Pradesh. Other states have also requested UNICEF assistance for introducing computerised MIS.

4.10.2 Objectives

- Ensure availability of sector related information at national and state levels, for effective policy planning and optimal utilisation of resources.
- Build capacity for MIS within the institutions involved in sector management.
- Establish state specific computerised MIS in seven states, including computer software to capture basic processes for completion of work at field level and automatic updating of village level baseline information.

4.10.3 Project Areas

Plans are to take up development and implementation activities in each of the selected states. In each state, a few selected districts would be taken up during an initial developmental phase, covering a period of one to one-and-a-half years. This would be followed by two or three implementation phases which would expand coverage to include more districts, eventually covering the entire state in two or three years.

Under this project, the development phase covers the following seven major states: Andhra Pradesh, Karnataka, Kerala, Madhya Pradesh, Orissa, Tamil Nadu and Uttar Pradesh with a focus on the rural sector. The implementation phase is supported only in Madhya Pradesh and Orissa where the state governments have undertaken the implementation of MIS in the entire state with UNICEF support since 1994.

4.10.4 Achievements

Since March 1994, the UNICEF Field Offices in M.P. and Orissa have become major partners with the respective state government departments for MIS projects. The nodal department for the rural water supply and sanitation sector in Orissa is the Rural Water Supply Section of the Rural Development Department (RDD), which has 30 offices spread over 13 districts in the state. The computerisation environment chosen by RDD for its divisional field offices is UNIX and FoxPro running on a PC-486 computer connected to two dumb terminals, allowing three persons to work simultaneously on the same data. The RDD head office at Bhubaneshwar will have UNIX and Oracle 7.1 as an operating environment with eight concurrent users.

Provision of basic hardware		
Sln	Type	Achieved
1	Main server computer	1
2	Desktop computers	18
3	Dumb terminals for PCs	25
4	Printers	19
5	RDBMS software	1
6	UNIX software	7

Orientation and training		
Sln	Type	Achieved
1	Orientation of managers/ engineers	7
2	Workshop on project formulation	2
3	Workshops on module design	12
4	Training of project core groups	15
5	Training of trainers on system modules	9
6	Training of deptt.staff on system	215

During the second half of 1995, prototypes of 13 software modules for MIS were reviewed thoroughly, followed by the production of the entire software package. In early 1996, the MIS software (FoxPro version) was installed at the head office and the Puri divisional office and a trials on data transmission through the telecommunication network and system integrity were conducted successfully. In August 1996 the system was installed in another three divisional offices in Phulbani, Khurda and Ganjam districts and in a Bhubaneshwar circle office. Managers and selected support staff were trained on computer operations using this system. Despite shortage of hardware, data entry operation has been taken up in these offices.

In M.P., the Public Health Engineering Department (PHED), which has 110 offices in 64 districts throughout the state, is the nodal agency for the rural water supply and sanitation sector. PHED has decided to use the UNIX and Ingres 6.4 environment in its MIS project with eight concurrent users at head office and three concurrent users at each field office.

During the reporting period, MIS software consisting of 13 modules was prepared and tested in Bhopal district. It was planned to run the system in Bhopal zone which covers seven districts, and therefore all managers and support staff from this zone were trained in system operations.

But due to lack of funds to procure hardware by PHED, only a few field offices in Bhopal district and some sections in the PHED head office were fitted with computers and system software. However, compilation of basic data in the system is in progress.

In mid-1996, the computerised MIS system for WATSAN in M.P. and Orissa was demonstrated to the National Computerisation Committee of MRAE. The Committee appreciated the system and has decided to take it as an example for the development of computerised WATSAN MIS at national and state level. Meanwhile, UNICEF was requested by the Government not to extend support to other states for similar MIS projects, as the centrally-sponsored MIS system would be developed for all states. In this context, UNICEF continued to support only the on-going MIS projects in M.P. and Orissa in order to gain further experience in the implementation process including HRD, data communication and management procedures.

In July 1996, UNICEF supported five states to strengthen their monitoring of district-focused project activities and ground water management. Orientation workshops were conducted for the concerned state departments, which formulated project proposals, in close consultation with UNICEF. Plans are to conduct a study on the project monitoring systems of various sectoral agencies by external expert agencies, in consultation with UNICEF and the state departments.

Training of departmental staff on computer operation was carried out with UNICEF support in Uttar Pradesh and Andhra Pradesh.

4.10.5 Constraints

Implementation of the MIS project in M.P. and Orissa was slow due to a lack of Government counterpart funds for procuring hardware, changes in top management of the state departments and the non-availability of department field staff on time for review meetings and on-the-job training. Difficulties faced by UNICEF in buying hardware through local vendors also impeded progress. The policy on the establishment of centrally-sponsored MIS systems for WatSan brought further delays in project implementation.

4.11 Research and Development on Low-Cost Sanitation - A Search for Appropriate and Cost-effective Technologies

4.11.1 Background

To identify suitable technological options, the Technology Advisory Group (TAG)-India carried out extensive research in association with leading institutions and implementing agencies which resulted in the development and standardisation of the two-pit pour flush water seal latrine (TPFL) for excreta disposal, and this type was adopted for programme implementation. The TPFL functions extremely well in specific conditions such as sandy loam soil with the water table two metres below the pit bottom. But India's varied geology (hard rock, partially weathered rock, black cotton soil, clay, loose sand, alluvial deposit s, etc.) and hydrology (deserts, hills, shallow water table areas, flooded plains, etc.) demands developing a range of technology options for latrines. Even the existing TPFL designed for an average situation needs further improvements of the design parameters like sludge accumulation rate and hydraulic loading. There is an apprehension that, under certain hydro-geological conditions, the leach pits attached to these latrines may pollute ground water used for drinking. Prior to this project, no in-depth study of the relationship between the use of leach pits and ground water pollution under various hydro-geological variations had been undertaken in India.

4.11.2 Objectives

The major objective of this R&D project is to generate technological information needed for improving the existing designs and specifications, developing new specifications for alternate designs and suggesting cost effective technologies for accelerating and sustaining sanitation coverage. Besides suggesting a range of technological options to suit different hydro-geological and socio-economic conditions, this project will also define necessary precautions to safeguard against drinking water contamination. The project is carried out through national and regional institutions engaged in R&D on water and sanitation. The objectives of the project are:

- Review available low-cost technologies used in India and/or abroad, through literature survey and field visits.
- Assess the appropriateness of these technologies under different hydro-geological situations in India.
- Develop (wherever required) designs based on technologies chosen, field test these in selected areas and monitor the performance through a set of pre-determined parameters.
- Undertake a comprehensive study of ground water pollution resulting from the use of leach pits under different soil conditions and ground water tables.
- Develop appropriate and cost effective designs for low-cost latrines, along with required guidelines.

4.11.3 Project Areas

The R&D project is in progress in selected areas of Medinipur and Hoogly (W.B.) and Allahabad (U.P.) districts. Plans are to extend this project to selected areas of Mumbai city.

4.11.4 Achievements

- In Hoogly and Medinipur a study of ground water pollution from household latrine pits is in progress. This study is carried out by the All India Institute of Hygiene and Public Health (AIIH&PH). The institute has extended the parameters of study to encompass clay, sandy clay, loam and laterite formations.

- In Allahabad, the Institute of Engineering & Rural Technology (IERT) has identified 25 villages to field test various technical options in line with sanitation upgrading. Six agencies have been identified for undertaking studies in different hydro-geological regions, aiming to improve the design criteria for household latrines. These studies will help assess not only the actual sludge accumulation rates but also the condition of unused pits which will provide direction on the advantages and disadvantages of constructing second pits which may not be in use for several years.

- Negotiations are in progress to take up research and development work on community garbage management in selected low-income settlements of Mumbai city. Local action groups in collaboration with a research institute and local bodies are the potential partners in this initiative.

- The proposed national level workshop on cost-effective sanitation technology and ground water pollution resulting from the use of on-site sanitation will be held after these studies have produced concrete results.

4.11.5 Constraints

Identifying appropriate agencies has been a major hindrance in the implementation of the project.

5. PROJECT IMPLEMENTATION AND MANAGEMENT

In the second half of 1995, UNICEF-India underwent a significant downsizing in staff. The number of posts for the 1996-97 period was reduced by more than 90 from the proposed levels, leaving a total staff strength of 315, with 22 staff members working full-time on water supply and environmental sanitation, including ten based at the Field Offices. In addition, nine full-time consultant experts are also supporting the water and sanitation programme. All, but one, of these consultants are based at the ten Field Offices.

UNICEF's Field Offices cover 13 of the major states, where more than 90 per cent of India's population lives. Each Field Office is headed by a State Representative and is staffed with an inter-disciplinary team of professionals and support staff, with expertise in health, education, community development, communication, water supply and sanitation.

Each office has one or two full time professionals working on the water supply and sanitation programme. UNICEF-New Delhi supports the Field Offices with a team of experts covering the same fields of specialisation. The inter-disciplinary group at the state level facilitates convergence of water supply and sanitation with other programmes. Over the past three years, UNICEF has managed an annual budget for water supply and sanitation of US$ 18 - 20 million.

As a result of the reorganisation following the reduction in posts in late 1995, programme implementation slowed, because orientation and familiarisation of relocated and newly hired personnel required considerable time. The Dutch-funded project was comparatively more affected, because most components include new strategies and/or technologies which needed lengthy discussions with the concerned government line agencies to obtain their commitment for implementation. The preparation of plans for project components where UNICEF had less experience, such as in environmental protection, experienced particularly long delays.

UNICEF support to various social development programmes is always done through existing structures. In line with this approach, UNICEF support never entails the establishment of project offices or the recruitment of staff specifically for the completion of a project. The Dutch-funded project, as part of UNICEF programme assistance, is similarly executed through existing government institutions.

Activities included in the plans-of-action for the Dutch-funded project components were incorporated in the 1996 annual workplans for the WES Section in New Delhi and for the water supply and sanitation unit in each of the ten Field Offices. These annual workplans include detailed tasks and sub-tasks for each activity, with one or more persons in UNICEF assigned the responsibility for working with identified partners to ensure that each activity, task and sub-task is completed within the set time frame.

Despite the disruption caused by staff transfers and the introduction of new personnel, it is a tribute to the resilience of staff and the organisation that implementation of often complex projects in widely scattered locations did pick up strongly, particularly during the second half of 1996. UNICEF staff maintained a close rapport with their government counterparts to ensure that agreed activities were implemented properly. Besides field visits by UNICEF staff, joint visits with senior level government counterparts were also undertaken to get feedback on the field situation for further improvement in project implementation and management. The inputs from these interactions form a part of review meetings with government.

In all major states a state-level sanitation and IEC cell has been set up. Although not all are equally effective, these high-level cells serve to emphasize the importance of sanitation, information, education and communication, which are essential if age-old poor hygiene practices are to change for the better.

6. MONITORING AND REVIEW

UNICEF has been actively monitoring the implementation of this project, at various levels. The Field Offices are most closely involved in the implementation of the project components by the various government line agencies. At the state level, the Field Office State Representative and WES professionals interact closely with the Government personnel in charge of project execution, obtaining regular reports on progress. Field Office staff visit project districts from time to time to discuss progress and observe and facilitate implementation. The annual workplans agreed upon between the implementing agencies and the Field Offices form the basis for the implementation of all UNICEF-assisted projects. The Field Offices conduct quarterly or bi-annual reviews with the State Governments on the status of implementation of UNICEF-supported projects.

The WES Section in UNICEF New Delhi collects information on the status of various project activities through the Field Offices on a quarterly basis. Besides expenditure and output, these reports also indicate the constraints causing delays, if any, in project implementation. WES Section staff also visit the Field Offices two or three times a year to review implementation of projects and to resolve problems. The WES Section regularly reviews with the RGNDWM general progress in implementing the various UNICEF assisted programmes and projects in the country.

While UNICEF has one or two WES professionals in each of the ten Field Offices, these staff carry a tremendous workload. Most of their time is devoted to working with various partners to formulate, implement, monitor and evaluate a number of projects aimed at demonstrating innovative strategies and/or technologies. The limited staffing has resulted in occasionally inadequate monitoring of the programmes and projects supported by UNICEF, which are often spread over a wide geographical area. UNICEF is conscious of these weaknesses and efforts are on to improve monitoring.

In late 1995, the Royal Netherlands Embassy conducted an intermediate review of UNICEF cooperation in the area of rural water supply and environmental sanitation. This review included several important recommendations, aimed at strengthening implementation capacity considerably by:

1. Increase UNICEF capacity at state and district levels to facilitate implementation by government and other partners and to have adequate capacity for proper monitoring.
2. Suitable changes to the school curriculum and the use of television to imaginatively promote the sanitation and health packages.
3. Continued advocacy to avoid heavy subsidies to people above the poverty line for household latrines.

UNICEF will consider these recommendations and, to the extent possible, ensure that action is taken to improve implementation in line with the suggestions made in the review report.

7. FUTURE PLANS

Plans for the period December 1996 till the end of the project in April 1997 will focus on an all-out attempt to complete the project components as detailed in the project document. However, it is evident from the progress presented in this report, both in terms of physical achievements and utilisation of project funds, that it may not be possible to complete all project components within the present project time frame. Based on experiences to-date, we have found that implementing capacities vary considerably from state to state. It is clear that some states would take a disproportionately long time to complete some of the project components as originally planned. To complete the project in such a way that the new strategies and technologies are fully internalised by the Government and other partners, it may become necessary for UNICEF to seek an extension of the project duration.

It is evident from the content of this progress report that certain aspects of some of the project components have not received required attention. UNICEF will make an effort to improve the timely delivery of project supplies, so that local capacity building can be phased in conjunction with physical water supply and sanitation improvements. More attention will be given to the health and hygiene aspects of the community-based handpump maintenance and integrated fluorosis control projects.

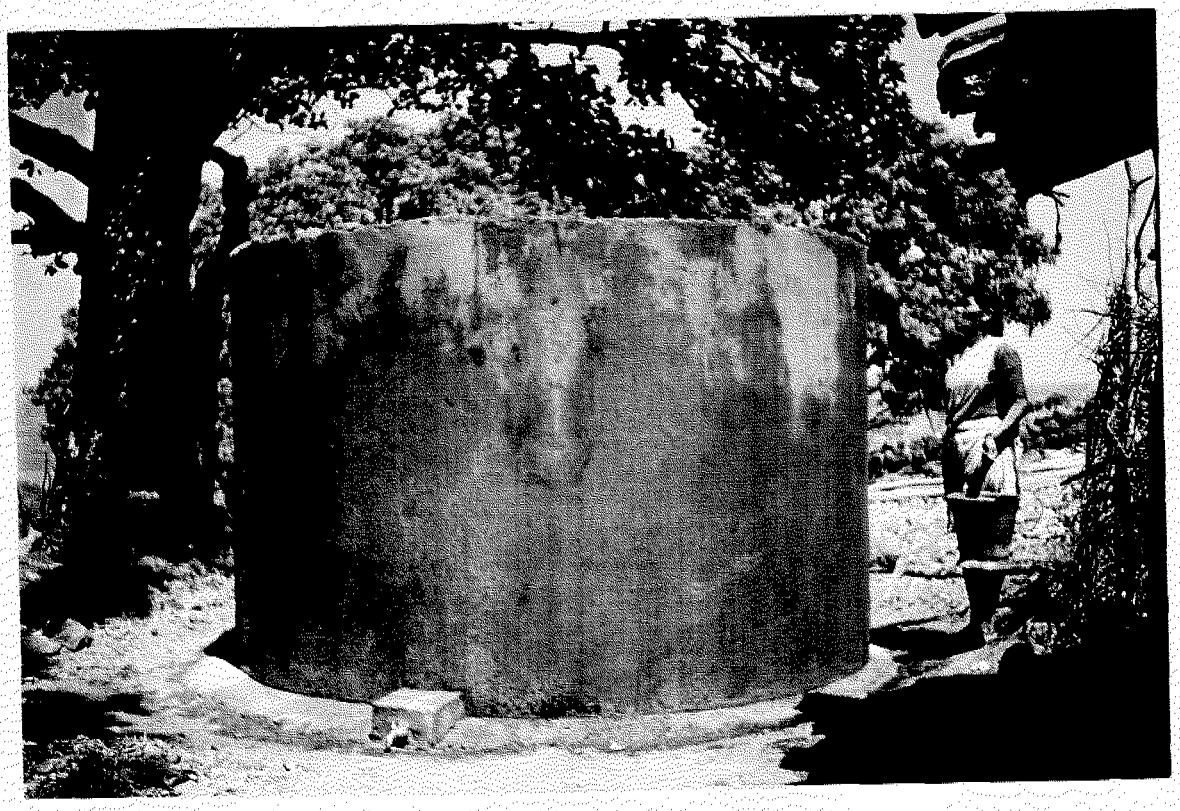
UNICEF will take steps to improve monitoring of implementation, ensuring that key information is collected, analysed and processed in a timely manner. Future reporting will include an assessment of the extent completed project activities are contributing towards achieving the objectives set for each project component.

By end-1996, the Royal Netherlands Embassy, UNICEF and the RGNDWM of GoI will conduct a mid-term review of the project. The purpose of this review will be to assess to what extent the activities of the project components are contributing to the objectives set for each component. The review will also examine implementation progress against the project time frame.

8. PROJECT FINANCIAL IMPLEMENTATION

The table below presents the status of financial implementation of the project as of end-November 1996.

Sln	Project Component	Budget		Utilisation	
		(US$'000)	%	(US$'000)	%
1.	CDD-WATSAN Strategy	4,363.6	28.8%	2,637.5	60.4%
2.	Rural Sanitary Marts	1,196.1	7.9%	585.2	48.9%
3.	Rainwater Harvesting & Empowerment of	450.3	3.0%	160.3	35.6%
4.	Community Based Handpump Maintenance	747.7	4.9%	496.2	66.4%
5.	School Sanitation	1,418.1	9.4%	782.8	55.2%
6.	Water Supply Sustainability	1,434.5	9.5%	727.5	50.7%
7.	Environmental Protection	786.6	5.2%	187.0	23.8%
8.	Integrated Fluorosis Control Project	2,108.9	13.9%	493.7	23.4%
9.	Management Information System for WatSan	1,561.3	10.3%	547.5	35.1%
10.	R&D on Low-Cost Sanitation	304.0	2.0%	65.0	21.4%
	Programme Management	756.4	5.0%	612.3	80.9%
	TOTAL (US$ '000) :	**15,127.4**	**100.0**	**7,295.0**	**48.2%**



Photos 1 & 2 : Empowerment of women through mason's training for construction of rainwater harvesting structures.

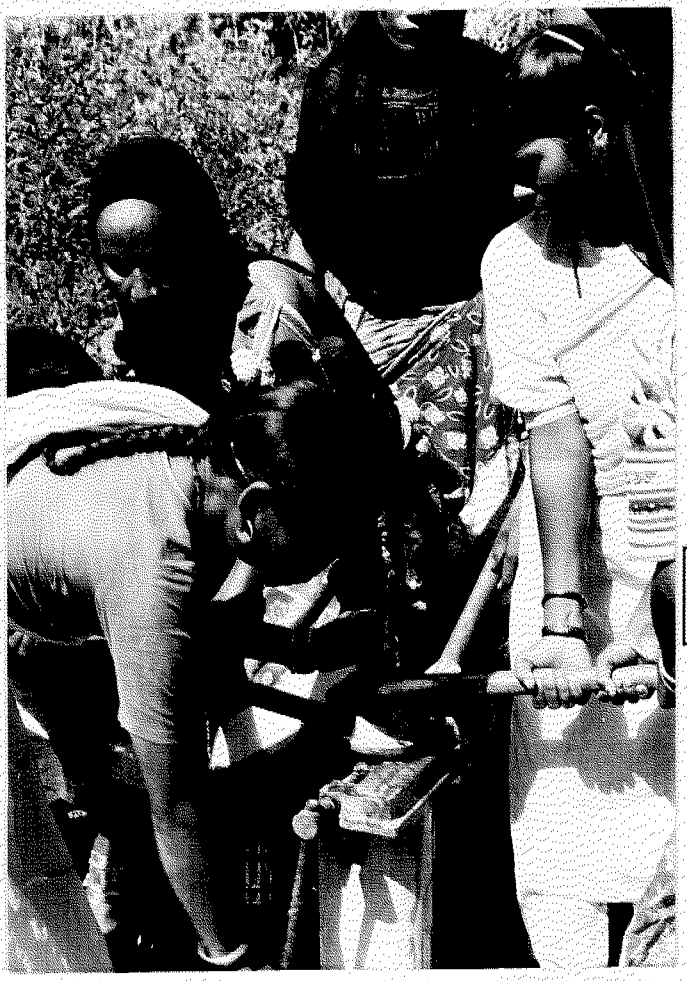


Photo 3 : Women undergoing training as handpump mechanics

Photo 4 : Training of NGO functionaries for promotion of community-based handpump maintenance

Photo 5 : Children participate in "padyatra" (walk) to draw the community's attention towards sanitation.

Photo 6 : Women gather together to listen to a teacher at a sanitation exhibition organized by the local school.

Photo 7 : A model of a twin-pit latrine being constructed for a sanitary park.

Photo 8 : People take out a procession with messages on village sanitation as part of a village contact drive.

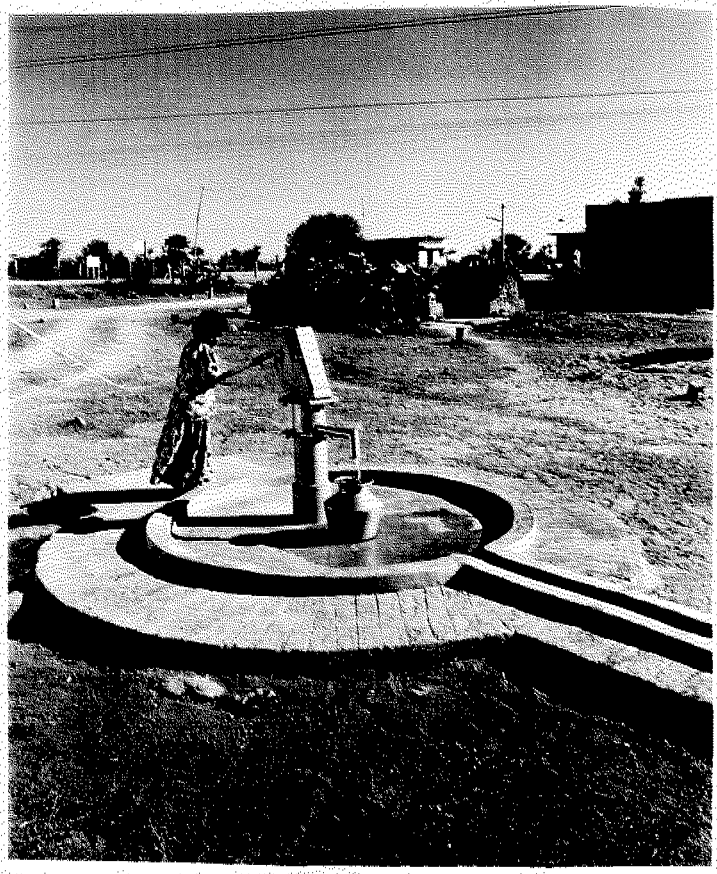
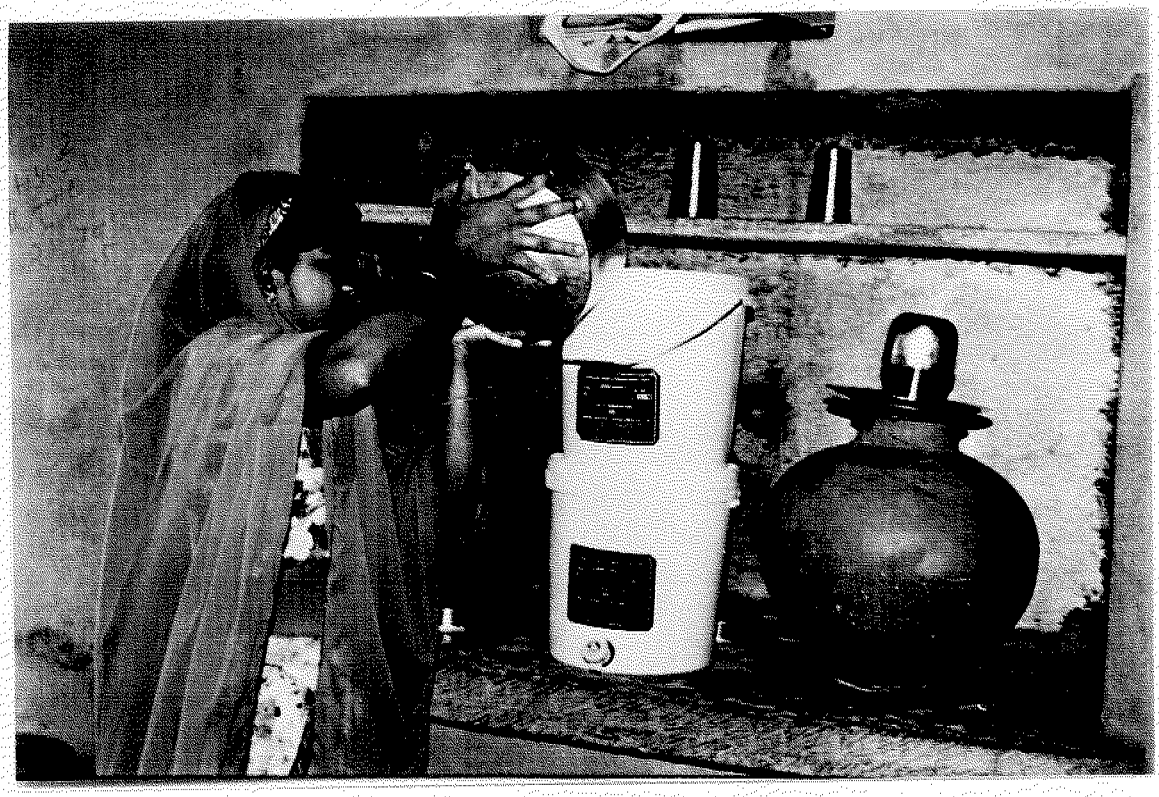
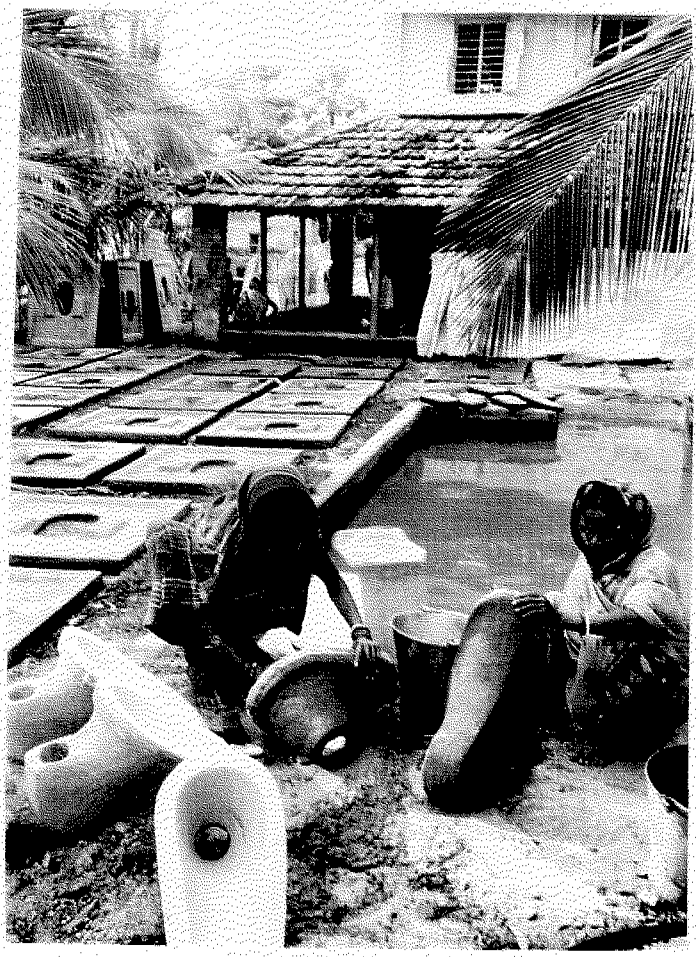


Photo 9 : Brick-lined platform constructed to ensure environmental protection of safe water source.

Photo 10 : Street play on protection of safe water source.



Photos 11 & 12 : Use of domestic defluoridation unit prevents skeletal fluorosis - deformed bones.



Photos 13 & 14 : RSM-cum-Production Centre brings sanitation practice to the rural community.

Photo 15 : Tractor mounted compressor - useful for flushing boreholes.

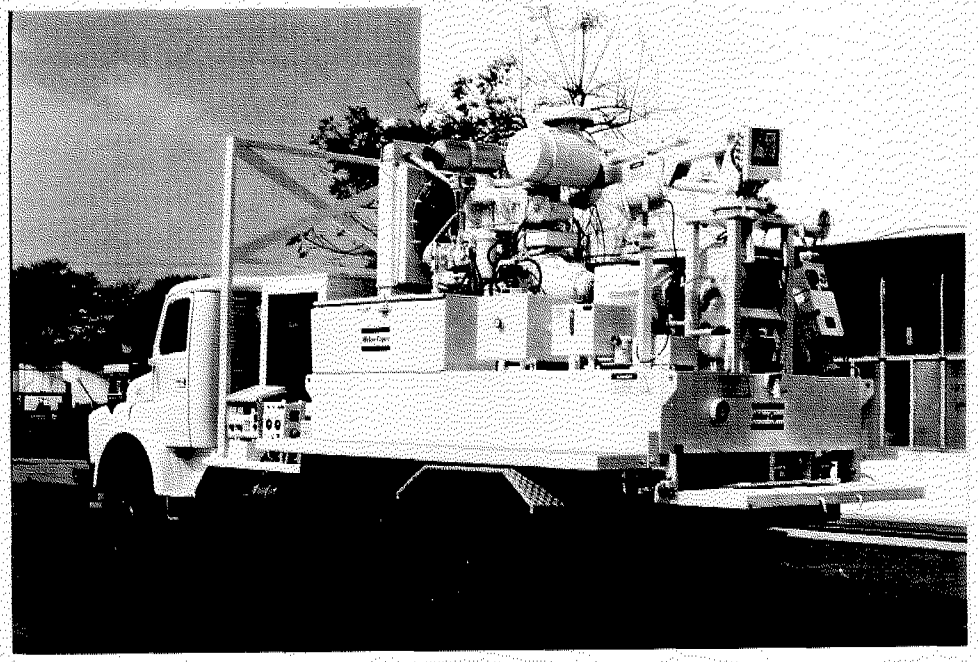


Photo 16 : Hydrofracturing Unit - essential for rejuvenating boreholes

UTILISATION REPORT

(1 May 1995 to 30 November 1996)

UTILIZATION OF DONOR FUNDS

Donor	:	Government of the Netherlands
PBA No.	:	SC/95/0241-1 & SC/95/0241-2
Programme No.	:	YW 804 & YW 904
Description	:	Water Supply and Sanitation Programme
Contribution no.	:	95024100
Period covered by report	:	1 May 1995 to 30 November 1996
Total funds pledged*	:	
Less 6 per cent recovery of general operating costs (when applicable)*	:	
Total available for Programme implementation	:	US$ 15,127,387.00

UNITED NATIONS CHILDREN'S FUND
UTILIZATION OF FUNDS BY PBA
AS AT NOVEMBER 30, 1996
E/ICEF/P/L. 9113
(From HISMAS and PBAMAS files.)
(Sorted by Donor Code, PBA No., Prog. No.)

DONOR : A432 - DUTCH
ASST. COUNTRY : IND - INDIA

PBA TYPE/NUMBER	TOTAL AMOUNT IN US DOLLARS
SC/95/0241-1	419,396.00

PBA TYPE/NUMBER	AMNDT	AMENDMENT AMOUNTS

Programme	UNICEF Doc. Reference No.	Description	US Dollars
IND/YW804	CCF-INDC/95/0561	AS:DEVELOPMENT OF ALTERNATE DELIVERY SYSTEM:45.08	17,966.00
	CCF-INDC/95/0562	AS:SURVEY/EVAL/REV/MONIT&STRAT DEV: 45.06	13,332.00
	CCF-INDC/95/0563	AS:TRAINING/ORIENTATION (OTHER THAN KAMRUP):45.14	8,293.00
	CCF-INDC/95/0564	AS:DRAINAGE IMPROVEMENT AROUND WATER SOURES:45.26	19,549.00
	CCF-INDC/95/0565	AS:DEV CBS OF RECORDING DIARRHOEA MORBIDITY:45.07	.00
	CCF-INDC/95/0579	AS:SUPPORT TO SANIT. CELL/NGO/TRG INSTITUTE:45.11	14,607.00
	CCF-INDC/95/0580	AS:TRAINING/OREINTATION UNDER ISP, KAMRUP:44.12	7,033.00
	CCF-INDE/95/1352	CDD-WATSAN : CONSTRUCTION OF HOUSEHOLD LATRINES	20,850.00
	CCF-INDE/95/1353	ORIENTATION AND TRAINING - CDD/WATSAN	.00
	CCF-INDE/95/1354	CONSTRUCTION OF SANITATION FACILITIES - CDD/WATSAN	.00
	CCF-INDE/95/1357	SUPPORT INSTITUTIONAL SANITATION FACILITIES	42,356.00
	CCF-INDK/95/0248	COMMUNICATION AND SOCIAL MOBILIZATION	6,222.00
	CCF-INDL/95/1738	ORIENTATION/TRAINING	22,384.00
	CCF-INDL/95/1739	SUPPORT TO SANITATION CELL/TRG.INSTITUTIONS/NGOS	10,360.00
	CCF-INDL/95/1740	DEVPT OF ALTERNATE DELIVERY SYSTEMS - CDD-WATSAN	15,418.00
	CCF-INDL/95/1741	SANITATION FACILITIES - INSTITUTIONAL	34,583.00
	CCF-INDL/95/1742	SANITATION FACILITIES (OTHERS)	12,969.00
	CCF-INDL/95/1743	RESEARCH & DEVELOPMENT ACTIVITIES - CDD-WATSAN	1,441.00
	CCF-INDL/95/1744	DEVPT. OF ALTERNATIVE DELIVERY SYSTEM (ONGOING)	.00
	CCF-INDL/95/1745	COMMUNITY BASED HANDPUMP MAINTENANCE ACTIVITIES	28,112.00
	CCF-INDL/95/1746	CAPACITY BUILDING-H/PUMP QLTY CNTL/INSTLN/MAINT.	.00
	CCF-INDQ/95/3208	School Sanitation Project - Haryana	1,763.00
		CCF Total :	277,238.00
IND/YW804	SCF-INDQ/95/3056-1	CONNECTING RODS FOR RAJKOT	14,946.00
	SCF-INDQ/95/3105-1	Fibreglass reinforced pans/traps - Ranchi (Bihar)	36,120.00
	SCF-INDQ/95/3107-1	CDD WATSAN activities, Mysore Dist.- Tempo Trax	9,500.00
	SCF-INDQ/95/3234-1	Suppl. materials on school sanitation -Haryana	15,700.00
	SCF-INDQ/95/3236-1	Communication materials - 1995 supply	65,300.00
	SCF-INDQ/95/3237-1	Communication materials - 1995 supply	600.00
		SCF Total :	142,166.00
IND/YW804		Total Calls-Forward for Programme :	419,404.00

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DONOR : A432 - DUTCH
ASST. COUNTRY : IND - INDIA

Programme	UNICEF Doc. Reference No.	Description	US Dollars
PBA TYPE/NO : SC/95/0241-1		TOTAL CALLS-FORWARD :	419,404.00
		PBA BALANCE :	-8.00

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PBA TYPE/NUMBER	TOTAL AMOUNT IN US DOLLARS
SC/95/0241-2	14,707,991.00

PBA TYPE/NUMBER	AMNDT	AMENDMENT AMOUNTS

Programme	UNICEF Doc. Reference No.	Description	US Dollars
IND/YW904	CCF-INDB/96/6785	RAINWATER HARVESTING	.00
	CCF-INDB/96/6786	ENVIRONMENTAL PROTECTION & WATER RESOURCES MGMNT	35,000.00
	CCF-INDB/96/6789	SANITATION WORKSHOP	.00
	CCF-INDB/96/6790	EVALUATION OF COMMUNITY BASED HANDPUMP PROJECTS	.00
	CCF-INDB/96/6798	RAINWATER HARVESTING	100,000.00
	CCF-INDB/96/6805	RAIN WATER HARVESTING AND EMPOWERMENT OF WOMEN	300.00
	CCF-INDC/96/3314	SUPPORT ALTERNATE DRINKING WATER SOURCES.1:3&1:4	62,500.00
	CCF-INDC/96/3361	CDD-WATSAN STRATEGY.13:31.	59,000.00
	CCF-INDC/96/3362	SURVEY/EVALUATION/REVIEW/MONITORING.13:34.	4,000.00
	CCF-INDC/96/3363	ORIENTATION / TRAINING.13:36.	7,000.00
	CCF-INDC/96/3364	DEVELOP ALTERNATE DELIVERY SYSTEM.13:39.	20,000.00
	CCF-INDC/96/3365	SANITATION FACILITIES.13:42.	9,000.00
	CCF-INDC/96/3411	CDD-WATSAN STRATEGY.13:61.	24,500.00
	CCF-INDC/96/3412	SUPPORT TO COMMUNICATION AND TRAINING CELLS.13:67.	4,000.00
	CCF-INDC/96/3413	COMMUNITY ORGANISATION/SOCIAL MOBILIZATION.13:69.	7,000.00
	CCF-INDC/96/3414	COMMUNICATION RESEARCH&MATERIAL DEVELT.(O).13:70.	1,000.00
	CCF-INDE/96/8126	CDD-WATSAN STRATEGY - WATER SUPPLY	15,000.00
	CCF-INDE/96/8127	COMMUNITY-BASED HANDPUMP MAINTENANCE	30,000.00
	CCF-INDE/96/8128	RAIN WATER HARVESTING AND EMPOWERMENT OF WOMEN	12,000.00
	CCF-INDE/96/8129	WATER SUPPLY SUSTAINABILITY/REJV. OF BOREWELLS.	10,000.00
	CCF-INDE/96/8133	CDD-WATSAN STRATEGY - ENVIRONMENTAL SANITATION	40,000.00
	CCF-INDE/96/8134	SCHOOL SANITATION	.00
	CCF-INDE/96/8138	RURAL SANITARY MARTS	106,000.00
	CCF-INDE/96/8140	CDD-WATSAN STRATEGY - COMM. & SOCIAL MOBILISATION	25,000.00
	CCF-INDE/96/8141	SCHOOL SANITATION	66.00
	CCF-INDE/96/8142	COMM.-BASED HANDPUMP MAINTENANCE	10,000.00
	CCF-INDE/96/8143	RAIN WATER HARVESTING AND EMPOWERMENT OF WOMEN	6,000.00
	CCF-INDE/96/8147	MANAGEMENT INFORMATION SYSTEM FOR WATSAN	30,000.00
	CCF-INDE/96/8162	CONSULTANCY SUPPORT FOR SANITATION	1,029.00
	CCF-INDE/96/8176	RAINWATER HARVESTING & EMPOWERMENT OF WOMEN	2,000.00
	CCF-INDE/96/8177	Rainwater harvesting & Empowerment of Women	40,000.00
	CCF-INDE/96/8178	Community based HP Maintenance	5,000.00
	CCF-INDE/96/8179	Community based HP maintenance	11,500.00
	CCF-INDE/96/8180	Environmental Sanitation - CDD WATSAN	5,000.00
	CCF-INDE/96/8181	ENVIRONMENTAL SANITATION - CDD/WATSAN	55,000.00
	CCF-INDE/96/8182	SCHOOL SANITATION	.00
	CCF-INDE/96/8183	Rural Sanitary Marts	182,000.00
	CCF-INDE/96/8184	Rural Sanitary Marts	15,450.00

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	CCF-INDE/96/8206	PAYMENT OF M/S QUICK SOLUTIONS CONSULTANTS	3,300.00
	CCF-INDE/96/8213	SCHOOL SANITATION PROJECT - WATER SUPPLY COMPONENT	1,207.00
	CCF-INDF/96/5191	PROVISION OF SANITATION FACILITIES	45,000.00
	CCF-INDF/96/5192	SANITATION ACTIVITIES - RSM	9,000.00
	CCF-INDF/96/5193	STAFF SUPPORT	3,000.00
	CCF-INDF/96/5194	WATER SUPPLY ACTIVITIES	20,000.00
	CCF-INDF/96/5196	TRAINING/ORIENTATION	20,000.00
	CCF-INDF/96/5197	ORIENTATION/TRAINING	6,000.00
	CCF-INDF/96/5202	IEC ACTIVITIES	7,500.00
	CCF-INDF/96/5203	TRAINING ACTIVITIES	5,000.00
	CCF-INDF/96/5676	TEMPORARY STAFF - SALARIES, TA/DA	3,096.00
	CCF-INDF/96/5717	ENVIRON. PROTECTION & MGT OF WATER RESOURCES	12,000.00
	CCF-INDF/96/5726	TECH. SUPPORT FOR GW RECHARGE PROJECTS	20,000.00
	CCF-INDF/96/5727	SUPPORT FOR DEV OF WATER RESOURCES MANAGEMENT	27,000.00
	CCF-INDF/96/5737	ORIETATION/TRAINING	11,000.00
	CCF-INDF/96/5738	EXTENSION OF PIPELINE CONNECTION	1.00
	CCF-INDF/96/5739	PROJECT SUPPORT FOR MONITORING	1.00
	CCF-INDF/96/5742	HYGIENE EDUCATION ORIENTATION	10,000.00
	CCF-INDF/96/5743	SCHOOL/COMMUNITY ORGANISATION AWARENESS CREATION	6,000.00
	CCF-INDF/96/5744	CONSTRUCTION OF LATRINES	5,546.00
	CCF-INDF/96/5746	ORIENTATION/TRAINING	10,000.00
	CCF-INDF/96/5751	ORIENTATION/WORKSHOP ON MIS	5,000.00
	CCF-INDG/96/2112	AP-INTEGRATED FLUOROSIS CONTROL	50,000.00
	CCF-INDG/96/2113	AP-TRAINING	20,000.00
	CCF-INDG/96/2114	AP-ESTABLISHMENT OF RSM	1,998.00
	CCF-INDG/96/2115	AP-ESTABLISHMENT OF PRODUCTION CENTRE.	152,000.00
	CCF-INDG/96/2120	AP-INTEGRATED FLUOROSIS CONTROL PROJECT	10,000.00
	CCF-INDG/96/2121	AP-COMMUNITY BASED HANDPUMP MAINTENANCE-RANGAREDDY	8,000.00
	CCF-INDG/96/2122	AP-WATER SUPPLY SUSTAINABILITY-REJUV.OF BOREWELLS	5,000.00
	CCF-INDG/96/2207	AP-COM.BASED HP MAINTENANCE	3,000.00
	CCF-INDG/96/2601	KAR-CDD-WATSAN STRATEGY - TRAINING	5,000.00
	CCF-INDG/96/2602	KAR-CDD-WATSAN STRATEDY - SANITATION FACILITIES	208,500.00
	CCF-INDG/96/2603	KAR-SCHOOL SANITATION - TRAINING	5,000.00
	CCF-INDG/96/2604	KAR-SCHOOL SANITATION - SANITARY FACILITIES	95,650.00
	CCF-INDG/96/2605	KAR-CDD-WATSAN STRATEGY - ORIENTATION	20,000.00
	CCF-INDG/96/2607	KAR-SCHOOL SANITATION - HYGIENE EDUCATION	5,000.00
	CCF-INDG/96/2612	KAR-CDD-WATSAN STRATEGY	5,000.00
	CCF-INDG/96/2669	KAR-RURAL SANITARY MARTS (DUTCH) - TRAINING	5,000.00
	CCF-INDG/96/2675	KAR-RURAL SANITARY MARTS (DUTCH) EST.OF RSM	40,000.00
	CCF-INDG/96/2676	KAR-RURAL SANITARY MARTS (DUTCH) EST.OF PROD.CENT.	30,000.00
	CCF-INDG/96/2688	KAR- SANITATION FACILITIES (INSTITUTIONAL)	2,500.00
	CCF-INDJ/96/7616	37 - RURAL SANITARY MARTS - RAJASTHAN	.00
	CCF-INDJ/96/7621	03-INTEGRATED FLUOROSIS PROJECT - RAJASTHAN	10.00
	CCF-INDJ/96/7644	03-INTEGRATED FLUOROSIS CONTROL PROJECT	20,000.00

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	CCF-INDJ/96/7713	03 - COM. BASED HP MAINTENANCE	3,000.00
	CCF-INDJ/96/7802	63 - DEV/PRODN OF A FILM ON DEFLUORIDATION	7,000.00
	CCF-INDK/96/6106	INTEGRATED FLUOROSIS CONTROL PROJECT	92,000.00
	CCF-INDK/96/6107	COMMUNITY BASED HANDPUMP MAINTENANCE	1,634.00
	CCF-INDK/96/6108	CDD - WATSAN STRATEGY - M.P.	1,732.00
	CCF-INDK/96/6109	SCHOOL SANITATION - MADHYA PRADESH	.00
	CCF-INDK/96/6113	INTEGRATED FLUOROSIS CONTROL PROJECT DUTCH	10,000.00
	CCF-INDK/96/6114	COMMUNITY BASED HANDPUMP MAINTNENACE DUTCH	.00
	CCF-INDK/96/6115	SUPPORT FOR STATE SPECIFIC MIS	.00
	CCF-INDK/96/6183	ENV.PROTECTION & MGT. OF WATER RESOURCES	80,000.00
	CCF-INDK/96/6189	TEMPORARY ASSISTANCE - WATSAN	6,500.00
	CCF-INDK/96/6193	MANAGEMENT INFORMATION SYSTEM FOR WATSAN: WPAN 87	80,500.00
	CCF-INDK/96/6216	ENVIRON. PROTECTION & MNGMT. OF WATER RESOURCES	5,000.00
	CCF-INDL/96/4401	CONSULTANCY SUPPORT FOR CDD-WATSAN	4,000.00
	CCF-INDL/96/4402	CDD-WATSAN STRATEGY(DUTCH) - TRAINING/ORIENTATION	111,500.00
	CCF-INDL/96/4403	CDD-WATSAN STRATEGY(DUTCH) - SANITATION	113,500.00
	CCF-INDL/96/4404	CDD-WATSAN STRATEGY(DUTCH)-COMMUN.ORGN/SOC.MOBILZN	20,000.00
	CCF-INDL/96/4407	CDD-WATSAN STRATEGY(DUTCH) -CONSULTANCY/PROJ.STAFF	11,000.00
	CCF-INDL/96/4411	SCHOOL SANITATION (DUTCH)	70,000.00
	CCF-INDL/96/4412	SCHOOL SANITATION (DUTCH)	40,000.00
	CCF-INDL/96/4420	SCHOOL SANITATION (DUTCH) - TRNG/ORIENTATION	5,400.00
	CCF-INDL/96/4427	WS SUSTAINABILITY - REJUVN.OF BORE WELLS(DUTCH)	10,000.00
	CCF-INDL/96/4429	CDD-WATSAN STRATEGY(DUTCH) - PROGRAMME SUPPORT	10,000.00
	CCF-INDM/96/4602	SUPPORT TO CBHMS PROJECT IN RAJKOT	.00
	CCF-INDM/96/4638	TEMPORARY STAFF - MR ARUN MUDGARIKAR	7,215.00
	CCF-INDM/96/4643	SUPPORT TO CBHMS PROJECT IN RAJKOT	6,973.00
	CCF-INDM/96/4647	CDD-WATSAN IN PANCHAMAHAL DISTRICT	10,000.00
	CCF-INDM/96/4650	WATER SUPPLY SUSTAINABILITY & REJUVENATION OF BORE	1.00
	CCF-INDM/96/4663	TRG. PROGRAMMES FOR MASONS & SANITATION MOTIVATORS	7,150.00
	CCF-INDM/96/4664	UNICEF SUPPORT FOR HOUSEHOLD LATRINES	5,500.00
	CCF-INDO/96/7104	SUPPORT TO RIG/HFU FLEETS - ACTIVITY 9/AMDT.1	.00
	CCF-INDO/96/7105	SANITATION INTERVENTIONS IN CDDWAT DISTS/AMDT.01	.00
	CCF-INDO/96/7109	CONSULTANCY SUPPORT FOR CDD-WATSAN/AMDT.01	.00
	CCF-INDO/96/7115	COMMUNICATION RESEARCH & MTRL DEVLPM - AMDT.01	2,542.00
	CCF-INDO/96/7183	SUPPORT TO STATE SPECIFIC WATSAN - AMDT. 01	50,000.00
	CCF-INDQ/96/1008	INTEGRATED FLUOROSIS CONTROL PROJECT (DUTCH)	6,800.00
	CCF-INDQ/96/1010	CREDIT REFUNDS AGAINST PRIOR YEARS ADVANCES (CAG)	1.00
	CCF-INDQ/96/1023	IIT KANPUR FLUOROSIS CONTROL R&D	7,955.00
	CCF-INDQ/96/1101	CDD-WATSAN strategy	50,000.00
	CCF-INDQ/96/1102	School sanitation activities	61,200.00
	CCF-INDQ/96/1106	R&D on low-cost sanitation	20,000.00
	CCF-INDQ/96/1121	R&D project of AIIH&PH at Hooghly, West Bengal	45,000.00
	CCF-INDQ/96/1201	School Sanitation project	15,000.00
	CCF-INDQ/96/1202	KAP studies - Ambala school sanitation project	7,200.00

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	CCF-INDQ/96/1303	Management Information System for WATSAN	25,000.00
	CCF-INDQ/96/9629	SALARY/ALLOWANCES & TRAVEL - PROJ CO-ORD. DRILLING	35,838.00
	CCF-INDQ/96/9674	SALARY/ALLOWANCES/TRAVEL - PROJ OFF. PROG MGMT/GWE	143,000.00
	CCF-INDQ/96/9676	SALARY/ALLOWANCES/TRAVEL-PROJ OFF-DRILL.&LOGISTICS	51,000.00
	CCF-INDQ/96/9677	SALARY/ALLOWANCES & TRAVEL - PROJ OFF COMM/TRNG	44,568.00
	CCF-INDQ/96/9680	SALARY/ALLOWANCES, TRAVEL & OVERTIME - SECRETARY	11,000.00
	CCF-INDQ/96/9682	SALARY/ALLOWANCES, TRAVEL & OVERTIME - SECRETARY	10,000.00
	CCF-INDQ/96/9720	SALARY, ALLOWANCES & TRAVEL-PROJ.OFFICER-WATER SYS	46,500.00
	CCF-INDQ/96/9721	SALARY, ALLOWANCES AND TRAVEL - PROF.OFFICER - SAN	49,000.00
	CCF-INDQ/96/9745	SALARY/ALLOWANCES & TRAVEL - PROJ. OFFICER -SAN	118,022.00
	CCF-INDQ/96/9771	SALARY, ALLOWANCES AND TRAVEL - PROJ.OFFICER - WES	47,600.00
	CCF-INDQ/96/9796	SALARY, ALLOWANCES AND TRAVEL - PROJ. OFFICER-SAN	30,000.00
	CCF-INDQ/96/9803	SALARY, ALLOWANCES, TRAVEL AND OVERTIME	7,379.00
		CCF Total :	3,459,864.00
IND/YW904	SCF-INDB/96/6617-1	JEEP FOR MONITORING	8,000.00
	SCF-INDF/96/5613-1	PROCUREMENT OF IEC MATERIALS (TAMIL)	23,500.00
	SCF-INDF/96/5614-1	SUPPLY OF PERSONAL HYGIENE KITS TO SCHOOLS	11,373.00
	SCF-INDF/96/5618-1	PROCUREMENT OF WATER DRUM	5,850.00
	SCF-INDG/96/2101-1	AP-VIDEO PROJECTOR FOR CDD-WATSAN/IFCP,ANANTAPUR	22,750.00
	SCF-INDG/96/2110-1	AP-SUPPLY OF PANS AND TRAPS FOR HH LATRINES	25,000.00
	SCF-INDG/96/2138-1	KAR-SANITATION TRAINING MANUAL - RSM	320.00
	SCF-INDG/96/2144-1	AP-TIN POSTERS ON LOW-COST LATRINES	13,500.00
	SCF-INDG/96/2601-1	KAR - ESTABLISHING ORT CORNERS	4,500.00
	SCF-INDG/96/2602-1	KAR-VIDEO PROJECTOR FOR CDD-WATSAN, MYSORE	22,750.00
	SCF-INDG/96/2603-1	KAR-SCHOOL SANITATION KIT - MYSORE	27,000.00
	SCF-INDG/96/2609-1	KAR - SUPPLY OF VEHICLE FOR MONITORING	7,650.00
	SCF-INDG/96/2613-1	KAR-SUPPLY OF PANS AND TRAPS FOR HH LATRINES	25,000.00
	SCF-INDG/96/2614-1	KAR-SUPPLY OF PANS AND TRAPS FOR HH LATRINES	25,750.00
	SCF-INDG/96/2628-1	KAR-JEEP FOR PROJECT MONITORING	7,000.00
	SCF-INDG/96/2643-1	KAR-TIN POSTERS ON LOW-COST LATRINES	8,680.00
	SCF-INDG/96/2644-1	KAR-TIN POSTERS ON LOW-COST LATRINES	11,950.00
	SCF-INDG/96/2649-1	KAR-TRG.MATERIAL FOR SCHOOL SANITATION	3,500.00
	SCF-INDJ/96/7601-1	03 - INT. FLUOROSIS CONTROL PROJECT (DUTCH)	6,649.00
	SCF-INDJ/96/7602-1	03-INT. FLUOROSIS CONTROL PROJECT (DUTCH)	19,170.00
	SCF-INDK/96/6101-1	RDBMS INGRES FOR MIS PROJECT,MADHYA PRADESH	143,965.00
	SCF-INDK/96/6107-1	CONTINGENCY PROCUREMENT OF SMALL VALUE ITEMS	1,315.00
	SCF-INDO/96/7101-1	RDBMS FOR ORACLE VERSION 7.1	33,150.00
	SCF-INDO/96/7102-1	MAHINDRA ARMADA 2-WHEEL DRIVE FOR MIS-RWSS	7,849.00
	SCF-INDQ/96/1012-1	HANDPUMP SUPPLIES FOR AMBALA FOR SCHOOL SANITATION	28,689.00
	SCF-INDQ/96/1014-1	GEOPHYSICAL ACCESSORIES FOR KARNATAKA	43,150.00
	SCF-INDQ/96/1015-1	GEOPHYSICAL ACCESSORIES FOR UTTAR PRADESH	32,350.00
	SCF-INDQ/96/1016-1	GEOPHYSICAL ACCESSOREIS FOR ANDHRA PRADESH	40,550.00

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	SCF-INDO/96/1017-1	GEOPHYSICAL ACCESSORIES FOR MAHARASHTRA	44,300.00
	SCF-INDO/96/1018-1	GEOPHYSICAL ACCESSORIES FOR MADHYA PRADESH	31,750.00
	SCF-INDO/96/1019-1	GEOPHYSICAL ACCESSORIES FOR KERALA	27,200.00
	SCF-INDO/96/1032-1	HANDPUMPS & ACCESSORIES FOR KARNATAKA	219,738.00
	SCF-INDO/96/1033-1	HANDPUMP SUPPLIES TO BIHAR - CDD-WATSAN	143,125.00
	SCF-INDO/96/1034-1	HANDPUMP SUPPLIES FOR A.P. INT.FLUOROSIS CONTROL	56,000.00
	SCF-INDO/96/1035-1	HANDPUMP SUPPLIES FOR A.P.COMM.BASED HP MAINT.	102,350.00
	SCF-INDO/96/1036-1	HANDPUMP SUPPLIES FOR GUJARAT-CDD-WATSAN	129,612.00
	SCF-INDO/96/1037-1	HANDPUMP SUPPLIES FOR GUJARAT-COMM.BASED HP MAINT.	19,000.00
	SCF-INDO/96/1038-1	HANDPUMP SUPPLIES FOR U.P.-SCHOOL SANITATION	40,050.00
	SCF-INDO/96/1039-1	HANDPUMP SUPPLIES FOR U.P.-COMM.BASED HP MAINT.	80,375.00
	SCF-INDO/96/1040-1	HANDPUMP SUPPLIES FOR ALLAHABAD CDD-WATSAN	129,465.00
	SCF-INDO/96/1041-1	PROGRAMME SUPPORT FOR FLUOROSIS PROJ., M.PRADESH	19,718.00
	SCF-INDO/96/1042-1	HANDPUMP SUPPLIES TO TAMILNADU-SCHOOL SANITATION	20,770.00
	SCF-INDO/96/1043-1	HANDPUMP SUPPLIES FOR KERALA CDD-WATSAN	20,770.00
	SCF-INDO/96/1046-1	INTEGRATED FLUOROSIS CONTROL PROJ-M.P.	47,880.00
	SCF-INDO/96/1049-1	HYDROFRACTURING UNITS	315,000.00
	SCF-INDO/96/1050-1	TRUCKS FOR USE WITH HF UNITS	105,000.00
	SCF-INDO/96/1052-1	TRACTOR MOUNTED COMPRESSORS FOR M.P.	34,000.00
	SCF-INDO/96/1053-1	HANDPUMP SUPPLIES FOR A.P.COMM.BASED HP MAINT.	13,800.00
	SCF-INDO/96/1054-1	SPECIAL TOOL KITS FOR RAJASTHAN	4,000.00
	SCF-INDO/96/1055-1	GEOPHYSICAL EQUIPMENT FOR TAMILNADU	29,160.00
	SCF-INDO/96/1057-1	TARA HANDPUMP SUPPLIES FOR ASSAM	89,145.00
	SCF-INDO/96/1058-1	50 mm OTC Handpumps for Assam	102,300.00
	SCF-INDO/96/1062-1	SCHOOL SANITATION PROJ.- TARA HANDPUMPS & SPARES	34,640.00
	SCF-INDO/96/1064-1	FLUORIDE KITS FOR ANANTAPUR	7,600.00
	SCF-INDO/96/1065-1	FLUORIDE KITS FOR MADHYA PRADESH	11,400.00
	SCF-INDO/96/1067-1	HANDPUMP SUPPLIES FOR U.P.COMM.BASED HP MAINT.	79,326.00
	SCF-INDO/96/1068-1	PUMP HEADS FOR RANGAREDDY PROJECT, A.P.	2,000.00
	SCF-INDO/96/1069-1	SUPPLIES FOR SCHOOL SANITATION, MYSORE, KARNATAKA	50,000.00
	SCF-INDO/96/1070-1	TRACTOR MOUNTED COMPRESSORS FOR RAJASTHAN	34,000.00
	SCF-INDO/96/1071-1	HANDPUMP SUPPLIES FOR BIHAR	105,430.00
	SCF-INDO/96/1073-1	SUPPLIES FOR U.P. COMM. BASED HP MAINT. - VEHICLES	18,000.00
	SCF-INDO/96/1074-1	SUPPLIES FOR SCHOOL SANITATION, HARIDWAR, U.P.	81,543.00
	SCF-INDO/96/1075-1	SUPPLIES TO CDD-WATSAN DIST.ALLAHABAD,U.P.	136,485.00
	SCF-INDO/96/1076-1	CENTRALIZERS FOR ANANTAPUR	3,750.00
	SCF-INDO/96/1078-1	FLUORIDE KITS FOR RAJASTHAN FLUOROSIS PROJECT	7,600.00
	SCF-INDO/96/1080-1	FLUORIDE TEST KITS FOR TAMILNADU	17,000.00
	SCF-INDO/96/1100-1	SUPPLIES FOR CBHPM PROJECT - MAHOBA	67,065.00
	SCF-INDO/96/1101-1	Ambala school sanit.project - Vehicle support	10,100.00
	SCF-INDO/96/1105-1	CDD/WATSAN STRATEGY - KAMRUP DISTRICT	5,500.00
	SCF-INDO/96/1106-1	MOBILITY SUPPORT	1,460.00
	SCF-INDO/96/1151-1	CONNECTING RODS FOR PANCHMAHAL	20,833.00
	SCF-INDO/96/1204-1	Poster on compontents of Sanitation-Karnataka	8,650.00

UNITED NATIONS CHILDREN'S FUND
UTILIZATION OF FUNDS BY PBA
AS AT NOVEMBER 30, 1996
E/ICEF/P/L. 9113
(From HISMAS and PBAMAS files.)
(Sorted by Donor Code, PBA No., Prog. No.)

DONOR : A432 - DUTCH
ASST. COUNTRY : IND - INDIA

Programme	UNICEF Doc. Reference No.	Description	US Dollars
	SCF-INDQ/96/1210-1	School Sanitation - Haryana	4,800.00
	SCF-INDQ/96/1213-1	SCHOOL SANITATION - DUTCH	13,900.00
	SCF-INDQ/96/1214-1	RURAL SANITARY MARTS - DUTCH	31,400.00
	SCF-INDQ/96/1215-1	COMMUNITY BASED HANDPUMP MAINTENANCE-IEC MATERIALS	8,850.00
	SCF-INDQ/96/1216-1	CDD/WATSAN STRATEGY -DUTCH PRTG.OF IEC MATERIALS	13,300.00
	SCF-INDQ/96/1217-1	CDD/WATSAN STRATEGY - PRINTING OF IEC MATERIALS	24,400.00
	SCF-INDQ/96/1218-1	CDD/WATSAN STRATEGY - DUTCH	2,680.00
	SCF-INDQ/96/1301-1	SERVER COMPUTER FOR OFFICE OF ENGINEER-IN-CHIEF-MP	25,550.00
	SCF-INDQ/96/1303-1	MANAGEMENT INFORMATION SYSTEM FOR WATSAN	7,440.00
	SCF-INDQ/96/1304-1	COMPUTER SUPPLIES FOR WATSAN MIS - ORISSA	43,040.00
	SCF-INDQ/96/1305-1	MIS PROJECT (DUTCH)	34,134.00
	SCF-INDQ/96/1306-1	ORISSA MIS PROJECT - DUTCH	2,110.00
	SCF-INDQ/96/1307-1	CBHP MAINTENANCE - SONBHADRA & UP JAL NIGAM	9,540.00
	SCF-INDQ/96/1308-1	CBHP MAINTENANCE SONBHADRA + UP JAL NIGAM	4,326.00
	SCF-INDQ/96/1309-1	AP MIS PROJECT - DUTCH	8,652.00
	SCF-INDQ/96/1312-1	MIS PROJECT - DUTCH TAMIL NADU	11,370.00
	SCF-INDQ/96/1313-1	MIS PROJECT - DUTCH - TAMIL NADU	2,163.00
	SCF-INDQ/96/1314-1	MIS SUPPORT - ANDHRA PRADESH	1,650.00
	SCF-INDQ/96/1315-1	MIS PROJECT - DUTCH TAMIL NADU	1,650.00
	SCF-INDQ/96/1316-1	RICOH PHOTOCOPIER	13,270.00
	SCF-INDQ/96/1317-1	MANAGEMENT INFORMATION SYSTEM FOR WATSAN-DUTCH	7,180.00
	SCF-INDQ/96/1318-1	CDD/WATSAN STRATEGY - DUTCH	6,530.00
		SCF Total :	3,415,735.00
IND/YW904		Total Calls-Forward for Programme :	6,875,599.00

PBA TYPE/NO : SC/95/0241-2

TOTAL CALLS-FORWARD : 6,875,599.00

PBA BALANCE : 7,832,392.00

UNITED NATIONS CHILDREN'S FUND
UTILIZATION OF FUNDS BY PBA
AS AT NOVEMBER 30, 1996
E/ICEF/P/L. 9113
(From HISMAS and PBAMAS files.)
(Sorted by Donor Code, PBA No., Prog. No.)

DONOR : A432 - DUTCH
ASST. COUNTRY : IND - INDIA

Programme	UNICEF Doc. Reference No.	Description	US Dollars
A432 - DUTCH		TOTAL PBA AMOUNT :	15,127,387.00
		TOTAL CF's FOR DONOR :	7,295,003.00
		DONOR BALANCE :	7,832,384.00

LIST OF ACRONYMS

AA	Activated Alumina
AP	Andhra Pradesh
APB	Annual Project Budget
BIS	Bureau of Indian Standards
CBHPM	Community-based Handpump Maintenance
CDD	Control of Diarrhoeal Diseases
CDRT	Center for Development of Rural Technology
CRL	Consumer Research Laboratory
CRSP	Central Rural Sanitation Programme
CSM	Communication and Social Mobilisation
DD	Domestic Defluoridation
DWCRA	Development of Women and Children in Rural Areas
GoG	Government of Gujarat
GoI	Government of India
GoMP	Government of Madhya Pradesh
GoR	Government of Rajasthan
GWEP	Guineaworm Eradication Programme
GWSSB	Gujarat Water Supply and Sewerage Board
HFU	Hydro-fracturing Unit
HMS	Hydro-fracturing Monitoring Software
HRD	Human Resource Development
H_2S	Hydrogen Sulphide
ICDS	Integrated Child Development Services
IEC	Information, Education and Communication
IERT	Institute of Engineering and Rural Technology
IFCP	Integrated Fluorosis Control Project
IIT	Indian Institute of Technology
IM II	India Mark II handpump
IM III	India Mark III handpump
ISI	Indian Standard Institute
KAP	Knowledge, attitudes and practices
lpcd	Litres per capita per day
MHRD	Ministry of Human Resources Development
MIS	Management Information Systems
MP	Madhya Pradesh
MRAE	Ministry of Rural Areas and Employment
MRD	(former) Ministry of Rural Development
NGO	Non-Governmental Organisation
NIC	National Informatics Center
NICD	National Institute of Communicable Diseases
NPA	National Plan of Action
O&M	Operation and Maintenance
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PBA	Programme Budget Allotment
PHC	Primary Health Care
PHED	Public Health Engineering Department
ppm	parts per million
PRED	Panchayati Raj Engineering Department
PTA	Parents-Teachers Association
R&D	Research and Development

RDD	Rural Development Department
RGNDWM	Rajiv Gandhi National Drinking Water Mission
RRL	Regional Research Laboratory
RMS	Rig Monitoring System
RSM	Rural Sanitary Mart
RSP	Rural Sanitation Programme
RWSP	Rural Water Supply Programme
SSF	Slow Sand Filter
TAG	Technology Advisory Group
TDS	Total Dissolved Solids
TMC	Tractor-mounted Compressor
TN	Tamil Nadu
TWAD	Tamil Nadu Water Supply and Drainage Board
TPFL	Twin-pit Pour-flush Latrine
UP	Uttar Pradesh
VCD	Village Contact Drive
VLOM	Village Level Operation and Maintenance
WATSAN	Water Supply and Environmental Sanitation
WES	Water and Environmental Sanitation (Section in UNICEF)