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Rajasthan
Water Supply, Sanitation and Hygiene
Moving towards the 21st Century

The Environment of the Child
in
Rajasthan

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

UNICEF Jaipur
August 1998



822IN-17620

RAJASTHAN

1. Demographic details, socio-economic and health indicators

Sln	Indicators	Status	Source
Demographic			
1.	Population	44.3 mln	Census 1991
	% of India total population	5.2 %	"
2.	No. of districts	31	"
3.	No. of development blocks	237	"
4.	No. of main habitations	37,889	"
5.	No. of habitations	104,066	"
6.	No. of Gram Panchayats	9,185	Inst of Social Sciences
7.	No. of towns	215	Census '91
Socio-Economic			
1.	Rural population on % of total population	77%	Census 1991
2.	% Scheduled Caste population	17%	"
3.	% Scheduled Tribe Population	12%	"
4.	No. of Primary Schools	33,829	"
5.	No. of Upper Primary Schools	12,692	GOR 97
6.	No. of Secondary Schools	3,501	"
7.	No. of Higher Secondary Schools	1,404	"
8.	No. of Pry. Health Centres	1,616	"
9.	No. of Health Sub-Centres	9,400	"
10.	Sex Ratio	910	"
11.	Annual per capita income (95-96)	Rs.6,950	
Human Development Indicators			
1.	Overall Literacy	38.55	Census 91
2.	Female Illiteracy	81%	
3.	IMR (per 1000 live birth) - 1996	86	SRS
4.	Under 5 Mortality Rate (per 1000)	103	SRS
5.	Malnutrition among children under 4 years of age (Weight-for-age)	41.6 %	NFHS-92-93
6.	Children fully immunized by 2 yrs	54.3%	MICS 95

Rajasthan is India's driest State. More than half of the area of Rajasthan falls in the Great Indian Desert, marked by very low average annual rainfall. Rajasthan's history has seen the construction of many canals and wells to bring water to population centres. While droughts and crop failure happened, there was rarely a scarcity of drinking water.

The 1970s and 1980s have seen dramatic changes in the use of the fresh water resources in the State. Urbanisation, industrialisation and extensive irrigation have resulted in more intensive use of fresh water, particularly from groundwater sources. In many areas, the rate of use is not sustainable, and groundwater levels have fallen dramatically.

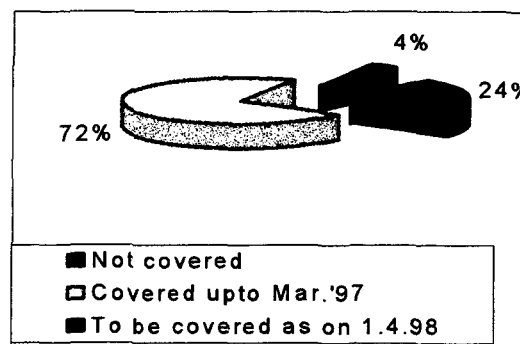
The relative scarcity of fresh water resources in the State is compounded by a wide range of water quality problems, including excess levels of fluoride, nitrates and salinity in ground water.

In Rajasthan, the sex ratio is 910 women per 1,000 men, while more than 80% of women are illiterate. This is a sad reflection of the low status of women in the State.

2. Status of WES programmes

Access to, and use of, safe drinking water

GoR is using the norm of one safe source of drinking water for every 250 population within 1.6 km, capable of supplying 40 lpcd in the non-desert areas and 70 lpcd in the desert districts. Against this norm, present coverage is as shown in the graph at right.

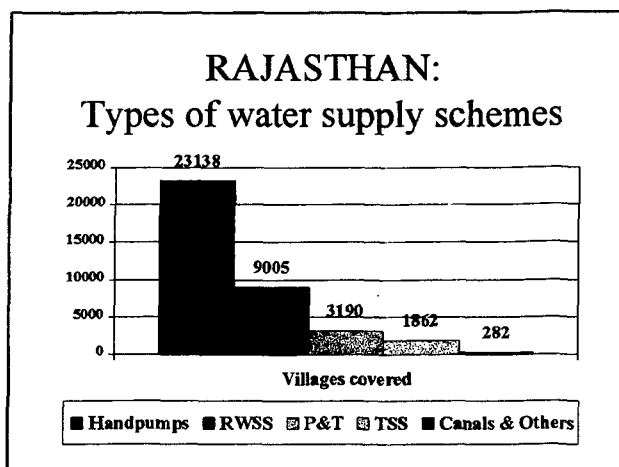


For rural water supply, there are 150,000 public

Figure 2 Water supply coverage (by hamlet)

handpumps, including 20% India Mark III pumps. About 10,000 handpumps are added annually. At any time, 20-25% of the handpumps are not working. GoR wants to reduce this to 10%. There are ... piped water supply schemes in the rural areas of the State.

Pump and tank (P&T) schemes are designed to cover one village, where water is supplied through electrically operated pumps from a well to a central ground level reservoir located near the habitation. Regional Water Supply Systems (RWSS) are designed to cover more than one village, through piped schemes to public standposts or ground level reservoirs. Traditional source schemes (TSS) are dugwells or 'tankas', upgraded by installing a pump, which are handed over to the Panchayats for maintenance. The graph at right shows the numbers of villages covered by type of water supply system.



PHED reports that all 222 urban centres have been provided with drinking water supply facilities. However, because of rapid population growth in the urban centres, service levels are often poor, and rehabilitation and extension of existing water supply systems are always needed. A survey in 1997-98 among the urban poor in five divisional towns showed high level of use of water from protected sources (> 90%).

A substantial number of villages and towns in the western areas of the State obtain their water supply from the IGNP, either in part or in full. In 1994, about 11% of the water supplied by this huge project is used for drinking and other domestic needs. GoR is increasingly resorting to the use of water from irrigation projects to augment inadequate rural and urban domestic water supply needs.

Various surveys indicate that the proportion of rural households taking water from protected sources is much lower than the official coverage figure of 72%: 50.5% (1991 census), 57.5% (NFHS 1992-93) 48.6% (NCAER, 1994).

Access to, and use of, home toilets

The MIC survey of 1995 found that 21% of households had a sanitary toilet. There are large disparities between the urban and the rural areas. The 1992-93 NFHS survey found that only 4% of rural households had toilets, and 57% of urban households. However, in urban slums toilet coverage is only 35%. The 1995 MICS survey also found that toilet coverage varied substantially between districts. A survey in 1997-98 among the urban poor in five towns found that toilet coverage varied from 32 to 73%.

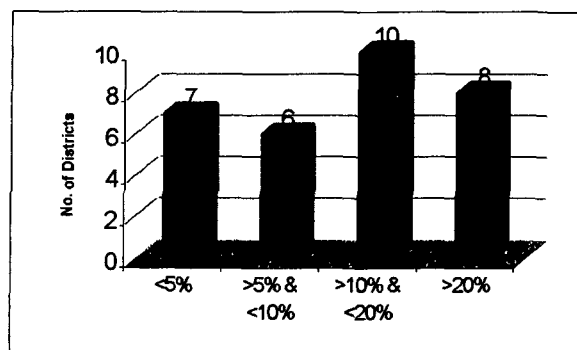


Figure 2: Variation in home toilet coverage; by district

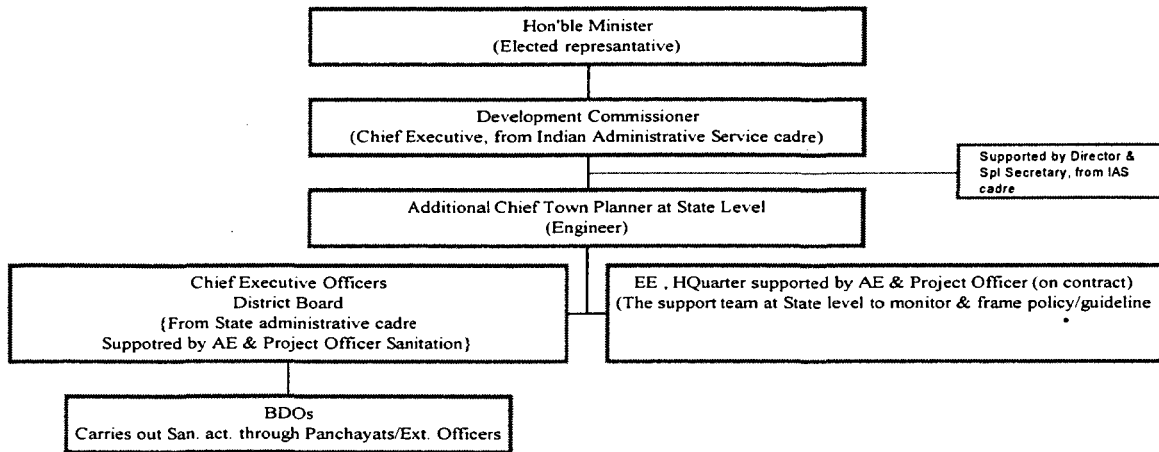
KAP related to WES

Awareness regarding the transmission of diseases because of poor hygiene is generally low. The national baseline survey conducted (1996-97) by the India Institute of Mass Communication (IIMC) indicates that. .

Traditionally, the women in the household fetch the water needed for the family and for the animals. For an average family, about 100 litres of water is carried home every day. During the hot pre-monsoon months when many of the traditional sources and even some of the handpumps and piped schemes supply less water or dry up completely, the well-to-do can afford to get their water by camel-cart. But the poor have no option by to spend time and energy on carrying water from distant sources, when temperatures reach 50 degrees Celsius.

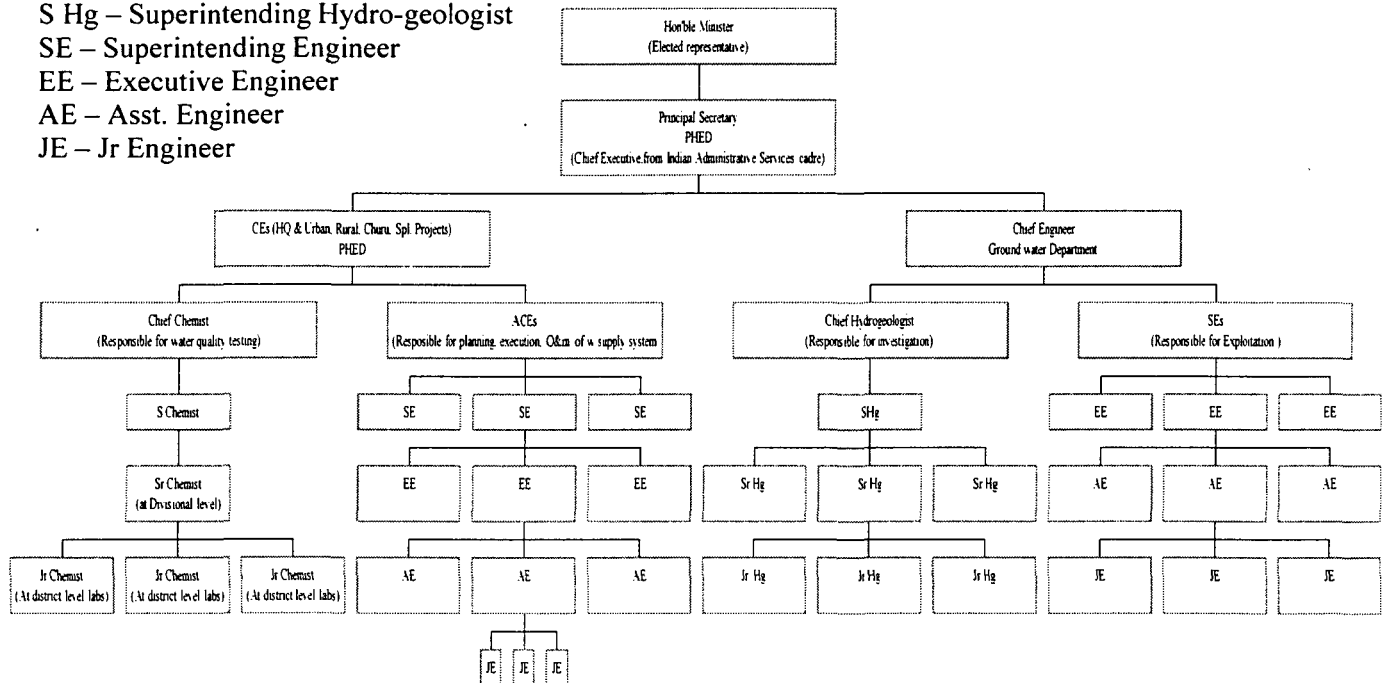
Institutional structure

A. RURAL DEVELOPMENT & PANCHAYAT RAJ DEPARTMENT (Responsible for the sanitation programme)



B. PUBLIC HEALTH ENGINEERING DEPARTMENT (Responsible for the rural water supply programme)

ACE – Addl. Chief Engineer
 S Hg – Superintending Hydro-geologist
 SE – Superintending Engineer
 EE – Executive Engineer
 AE – Asst. Engineer
 JE – Jr Engineer



PHED has a staff strength of about 2,000 professionals at Jr. Engineer level and above. Another 25,000 workers at lower levels are employed primarily to operate, maintain and repair the water supply infrastructure.

IEC Cell. The Cell was created in 1996 in the Rural Development & Panchayati Raj Department. No person has yet been appointed to head the Cell. NGOs were identified in the Districts to implement IEC activities. In June 1998 it was decided to engage the Panchayati Raj Institutions instead of NGOs, to implement IC activities.

HRD Cell. The HRD Cell exists in PHED. The Cell is headed by Superintending Engineer who is supported by Ex Engineer, Asstt Engrs, Junior Engrs & support staff. It is responsible for training activities & development of training materials.

State WatSan Sector Policies and ongoing programmes

GoR has decided to adopt the National Water Policy of 1987, and to formulate its own State Water Policy within the overall framework of the National Policy. In 1994, the Rajasthan Water Resources Council was set up, to conserve, regulate and manage the State's water resources and to prepare the State Water Policy.

Rural Water Supply Programme

Coverage. Under the Rural Water Supply Programme, the State is giving top priority to cover all NC habitations to the current norm. Water supply is fully government funded, using resources from the State, the Central Government and ESAs. The State has also specific projects to address water quality problems, generally through the construction of piped water supply schemes.

Budget. In 1997-98, the Plan budget for rural water supply was about Rs. 2,960 million (60% State and 40% GoI). In 1997-98, non-Plan expenditure for O&M was Rs. 1,360 million for rural schemes (85% State + 15% GoI) and about Rs. 1,500 million for urban schemes. For projects aimed at resolving water quality-related problems, GoI funds cover 75% of the costs.

Operation and maintenance. The Gram Panchayats are responsible for the operation and maintenance of handpumps, with the exception of pumps in ten desert districts where PHED has this responsibility. For O&M, the Panchayats receive funds from the Government. Each Panchayat has a number of handpump mechanics, all Government employees. Each mechanic is expected to cover 50 pumps. PHED also conducts annual repair campaigns. Other water supply systems, such as piped schemes, water supplied from canals and traditional water supplies are maintained and repaired by PHED.

A model Janta Jal Yojna is operational in a few schemes. This approach envisages handing over P&T scheme to the Panchayat with the Government contributing a fixed annual amount while the users contribute the rest.

Guineaworm eradication. Under RIGEP, intensive surveillance is continuing. So far, 1997 has been the first year with zero cases.

Water quality monitoring. PHED has one state level laboratory, five regional level labs, 25 district level labs and one. PHED also operates one mobile lab. The labs have the capacity to test the chemical as well as the bacteriological quality of water.

For all piped schemes, the water at source is tested during commissioning. Later, testing is done as and when necessary. Water from treatment plants is regularly tested for residual chlorine. For handpump schemes, water at source is only tested as and when there is a specific need.

The State Ground Water Department monitors the quality of water from inspection wells scattered all over the state. The Department regularly reports on water availability, water levels and water quality.

Rural Sanitation Programme

In 1997, the Rural Sanitation Programme coverage was extended to cover the entire State. GoR is allocating about Rs. 1,000 million per annum for RSP. For the 9th Plan period, GoR will set up one RSM in each of the 237 blocks of the State.

Home toilets. Under the Rural Sanitation Programme, the Government continues a heavily subsidy-driven programme for rural sanitation. Subsidies are provided to families below the poverty line for the home toilet, soak pit and washing platform. At present, subsidies per unit are as follows:

	Unit Cost	Govt. Assistance	Users Contribution
Household latrine	Rs 2,500	Rs 2,000	Rs 500
Household soak pit	Rs 250	Rs 125	Rs 125
Washing platform	Rs 250	Rs 125	Rs 125

Hygiene promotion. Under the national IEC strategy, four districts (Ajmer, Alwar, Udaipur and Jodhpur) were to be taken up for intensive IEC activities. GoI released Rs. 4.5 million in 1996 and the State released an equal amount in 1998, after action the State Government reviewed plans for the four districts. No progress has been made and funds remain unutilised.

AWWs are trained on hygiene education during their induction training. However the general level of skill and motivation to impart hygiene education among AWWs is still low.

School sanitation. Primary schools are provided with drinking water facilities, in line with the 10th Finance Commission recommendations. PHED reports to have installed 7,159 handpumps at primary schools in 1997-98, reaching a little more than 20% of all primary schools in the State.

Funds are transferred from the Education Department to PHED. However, the Education Department, which is primarily responsible for Upper Primary schools, is releasing funds for water supplies at these schools only. This has left the Primary schools (up to class 5), controlled by the Panchayat Raj & Rural Development Department, which are not attached to an Upper Primary School, without such support.

There are also large numbers of alternate institutions for primary education such as Shikshakarmi school/Anganshalas (primary schools constructed with the community contribution, with teachers from the same village, receiving a fixed honorarium, schools situated in isolated hamlets). Such schools, which cover a sizeable proportion of the population, have no access to Government funds for WatSan facilities.

The state has developed a guideline for hygiene education in primary schools. However, in practice the focus is still on the provision of toilets, with little attention for hygiene education.

Human Resources Development

In 1995, GoI sanctioned a project to train the 25,000 lower-level workers of PHED. Their training was to cover handpump O&M, pipe laying and repairs, O&M of E&M equipment and O&M of water treatment works. For the 2,000 PHED staff of Jr. Engineer rank and above, the Engineering Staff Training Institute of GoR conducts induction and refresher training for JE, AE and EE. Training for engineers, chemists and hydro-geologists is often covered by institutions outside the State.

Urban water supply and sanitation

The responsibility for improving the sanitation situation for the urban poor is basically with the municipalities. Major activities include the conversion of service latrines and the disposal of garbage. In selected districts, NGOs and municipalities have started garbage disposal through vermi-composting. There is increasing realization among the municipalities to focus on garbage disposal.

Plans and ongoing projects (9th plan)

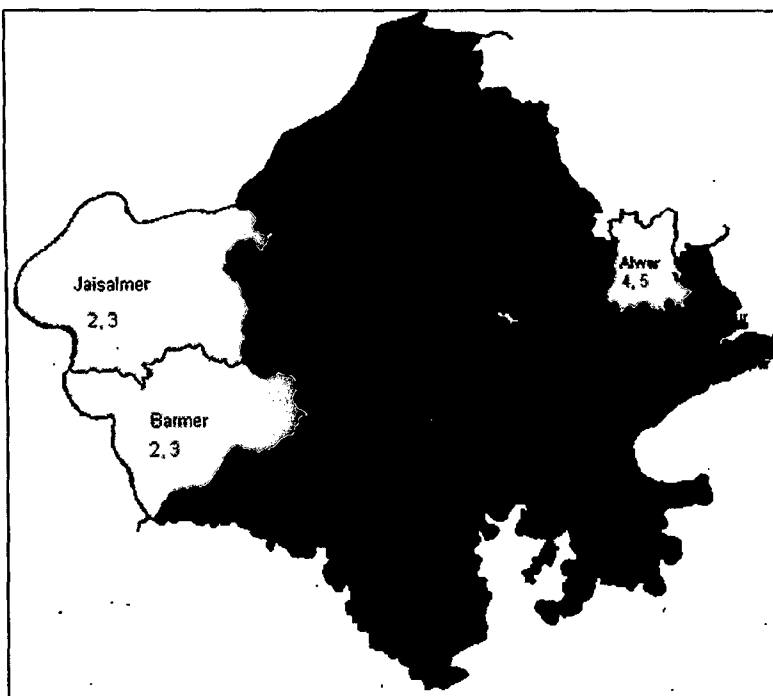
Sector	Plan allocation (Rs crores)	Key schemes
Rural water supply	964.0	Coverage of partially / non covered habitations @ 5,000 hamlets per year. Integrated project with KFW-Germany assistance for high salinity belt of Jhunjhunu, Churu & Ganganagar district (353 villages, 2 towns) – Ongoing project. Control of fluoride projects in Jaipur (175 villages) and Ajmer (94 villages) districts (ongoing).
Urban Water supply	775.0	Jaipur, Ajmer, Jodhpur (new + augmentation), Udaipur, Bikaner, Kota, Rajsamand Reorganization and augmentation of water supply schemes : LIC supported in 18 towns and HUDCO supported in 24 towns. Urban centres with a population of less than 20,000 – 18 towns being supported by AUWSP of the Central Government.
Rural Sanitation	14.35	Provision of sanitation facilities to BPL families as per CRSP guidelines.
Urban Sanitation	20.0	Conversion of service latrines to sanitary latrines.

Source: Draft GOR 9th five year plan

Key problems facing the rural WES sector

Rural water supply: Risk Analysis. Despite considerable coverage and use of, protected water supply sources, rural water supply in Rajasthan is prone to many risks. An analysis of the identified risks, by district, is as follows.

Sustainability. The current system of handpump maintenance by the Panchayats under the Department of Rural Development, with annual repair campaigns by PHED, is not very effective. The Panchayat handpump mechanics lack transport to effectively maintain or repair pumps. There is a tendency to neglect pump maintenance and wait for the PHED annual repair campaign to set things right. There is a lack of coordination between DRD and PHED.



Water quality problems

- 16% of habitations have excess fluorides
- 14% of habitation have excess salinity
- 15% of habitations have excess nitrates

Falling groundwater table. During the decade 1984-94, groundwater levels declined by more than three metres in 40% of the area of the State. In some areas, the water table declined by more than ten metres. This is of crucial importance to

P1	More than 75% villages have chemically unsuitable water as per potability for nitrates/fluorides and total dissolved solids
P2	More than 15% villages have 3 ppm or more fluoride in drinking water
P3	Less than 70% hamlets have been provided with water supply systems
P4	More than 35% HPs out of order at start of repair campaign
P5	Decline in water level by more than 4 meter between 1984-1994
	Districts where none of the risk parameters are existing
	Districts where 1 out of 5 risk parameters is existing
	Districts where 2 out of 5 risk parameters are existing
	Districts where 3 out of 5 risk parameters are existing
	Districts where 4 out of 5 risk parameters are existing
	Districts where 5 out of 5 risk parameters are existing

WES EVALUATION

Programme Schedule and Itinerary in Rajasthan

Team Member : MS CHRISTINE VAN WIJKE

Date	Time	Schedule	Relevant information
21.1.99	1850 hrs	Arrival Jaipur Check in Hotel Megh Niwas	Taxi at airport would take it to Hotel Megh Niwas (Phone no.202018)
22.1.99	0850 hrs	Dep. from Hotel for UNICEF Office	Taxi would pick up from Hotel
	0900-1030 hrs	Meeting with UNICEF team	State profile for WES attached
	1030 hrs	Dep from UNICEF office for office of Rural Dev & Panchayati Raj Deptt (RD&PRD)	Taxi would take the team from UNICEF office to the RD&PR office Venue : Room no.278
	1100-1300 hrs	Meeting with RD&PR Officials	RD&PRD is the nodal deptt for Sanitation programme in the State and also for the Panchayati Raj institutions
	1300-1350 hrs	Lunch Break	At Hotel Megh Niwas
	1350-1400 hrs	Dep Hotel for PHED office	
	1410-1550 hrs	Meeting with PHED Secretary/Spl Secretary & Officials of PHED	PHED is the nodal deptt for Drinking Water Supply Venue : Room No.44
	1550 hrs	Dep PHED	
	1600-1700 hrs	Meeting with Mrs K. Bhatnagar (Former) Secy PHED, Govt. of Rajasthan. Presently Secretary, Revenue Deptt., GOR	Venue: Room No 103
23.1.99	0530 hrs	Depart Jaipur by air ETD 0655 ;Reach Udaipur ETA:0730. Meeting with officials of SWACH and SARITA at 1115 followed with field visit in Udaipur district - SWACH project; Night halt at Udaipur	Taxi to pick up from Hotel at Jaipur and receive at Airport , Udaipur. The Taxi would take to Hotel Raj Darshan, Udaipur (phone 0294-526601) and remain with Ms Wijke upto 25.1.99. Ms Manjari Bhandi to contact Ms Wijke at Hotel Raj Darshan (Contact ph:0294-523649)

Praveen Sureshwar Singh, Udaipur

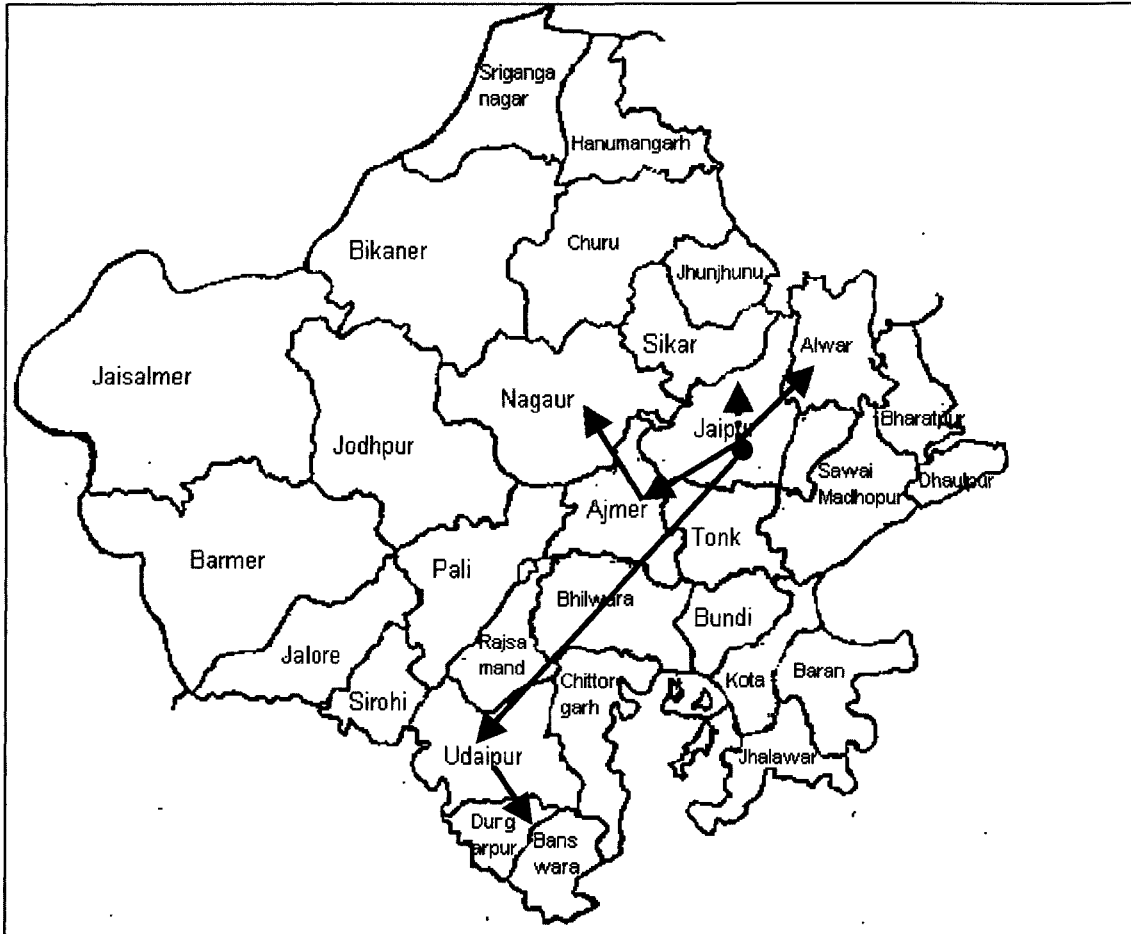
WES EVALUATION

Programme Schedule and Itinerary in Rajasthan

24.1.99	1030-1700 hrs	Field visit in Dungarpur; - SWACH Project - Fluorosis project (under implementation) - Meeting with field animators Night halt at Dungarpur Circuit House	Ms Manjari Bhandi, Project Director, Women Dev Agency Udaipur would accompany to help in translation etc. For field visit SWACH & SARITA NGOs to coordinate
25.1.99	0900 hrs	Field visit in Dungarpur - Fluorosis project (under implementation) Reach Udaipur by 1600 hrs	
	1800 hrs	Depart Udaipur for Jaipur by Train (Chetak Express)	Taxi to drop at Rly Station
26.1.99	0600 hrs	Reach Jaipur	Taxi to pick up at Rly Station and take Ms Wijke to Alwar
	0900 hrs	Reach Alwar	Join the team at Hotel Meenal(ph: 0144-22852)
	0930-1200 hrs	Meeting with community representatives in Alwar	
	1230-1315 hrs	Wrap up meeting with UNICEF officials at Circuit House, Alwar	
	1345 hrs	Lunch at Circuit House and depart for Delhi	
	1645 hrs	Reach Delhi	Taxi to drop the team member at Delhi and return back to Jaipur

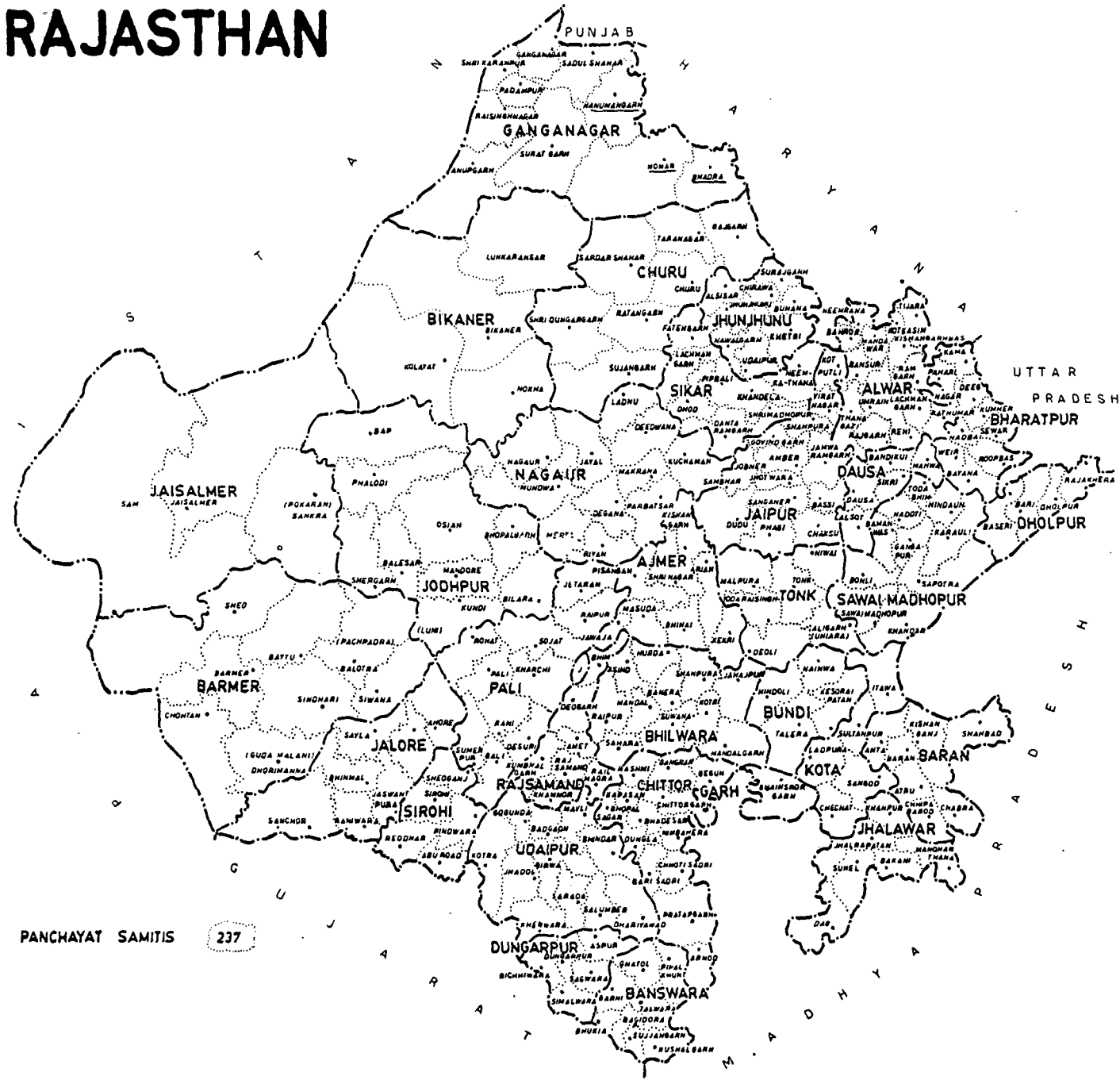
WES EVALUATION

FIELD VISIT – RAJASTHAN



S.No.	ROUTE	DISTANCE	MODE OF TRAVEL
1.	Jaipur–Alwar →	165 km	By Road
2.	Jaipur-Ajmer →	130 km	By Road
3.	Ajmer-Nagaur →	160 km	By Road
4.	Jaipur-Udaipur →	490 km	By Air/Train
5.	Udaipur-Dungarpur →	110 km	By Road
6.	Jaipur within District →	Local	By Road

RAJASTHAN

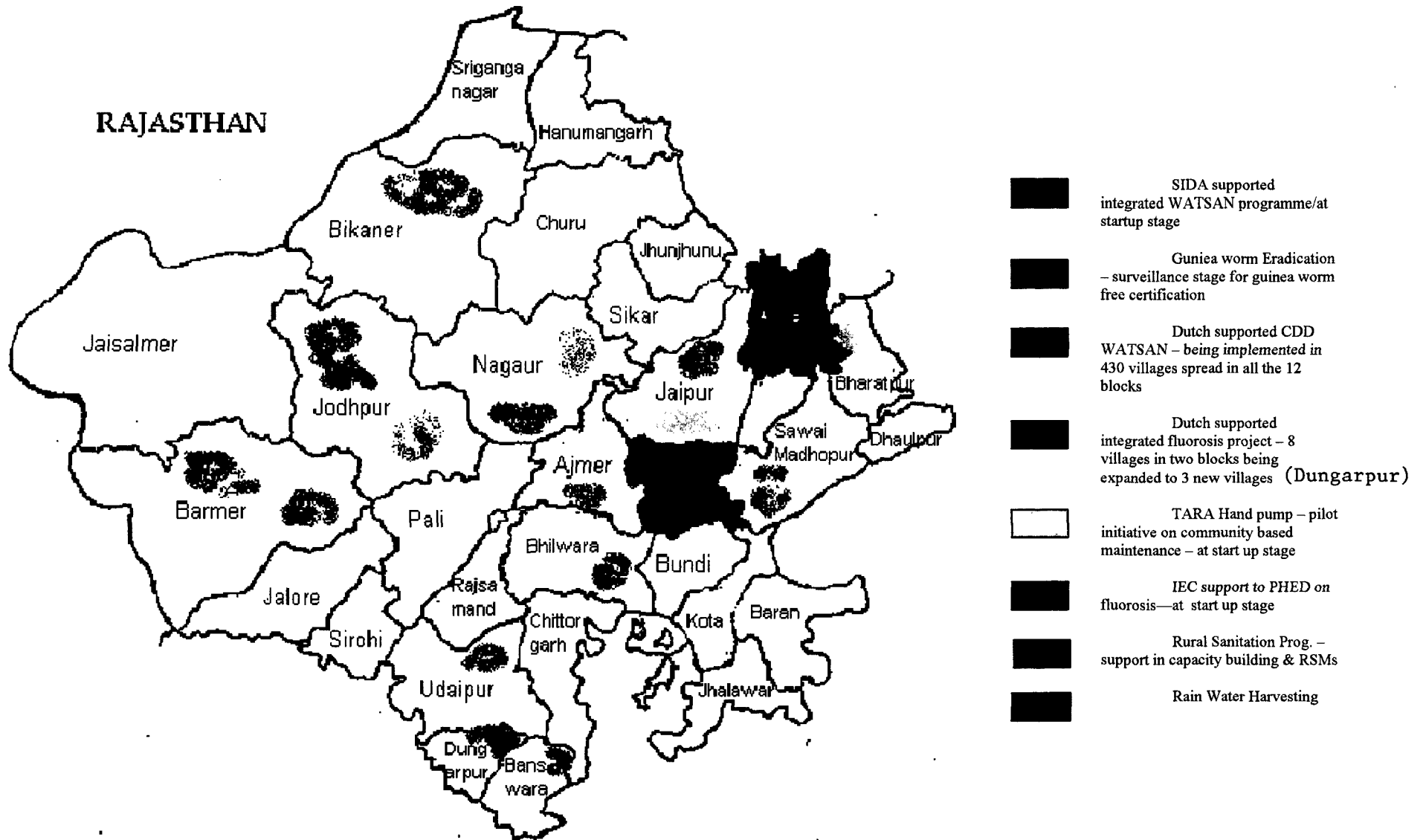


PANCHAYAT SAMITIS

237

UNICEF ASSISTANCE IN RAJASTHAN (1996 - 98)

Child Environment - Sanitation, Hygiene & Water



Handpump
Technology
Network

General Data										
Country										
Project Organisation / Agency										
Village / District / Country										
Handpump (HP) Code No.										
Type of HP	MKII	<input type="checkbox"/>		MKIII	<input type="checkbox"/>		Other :			
Downhole Components Matl	MS	<input type="checkbox"/>		SS	<input type="checkbox"/>		Other :			
Type of well	Borehole			Dugwell						
Depth of well										
Diameter of well	mm			m						
Static Water level (SWL)	m			m						
Installation date										
Number of pump users	Persons									
Users other then domestic	Irrigation	<input type="checkbox"/>		Cattle	<input type="checkbox"/>		Industr.	<input type="checkbox"/>	other	<input type="checkbox"/>
Approx. consumption per day	litres									
Monitoring Data										
Pump out of Order	Yes	<input type="checkbox"/>		No	<input type="checkbox"/>					
Condition	good	<input type="checkbox"/>		fair	<input type="checkbox"/>		bad	<input type="checkbox"/>		
Water Quality	good	<input type="checkbox"/>		fair	<input type="checkbox"/>		bad	<input type="checkbox"/>		
Condition of HP surrounding	good	<input type="checkbox"/>		fair	<input type="checkbox"/>		bad	<input type="checkbox"/>		
Grouting of Pedestal / Pump stand	firm	<input type="checkbox"/>		loose	<input type="checkbox"/>					
No. of strokes to fill a 15-lit. bucket										
Corrosion of Pump stand / -head	none	<input type="checkbox"/>		slight	<input type="checkbox"/>		bad	<input type="checkbox"/>		
Corrosion of Handle parts	none	<input type="checkbox"/>		slight	<input type="checkbox"/>		bad	<input type="checkbox"/>		
Corrosion of Rods	none	<input type="checkbox"/>		slight	<input type="checkbox"/>		bad	<input type="checkbox"/>		
Corrosion of Rising Main	none	<input type="checkbox"/>		slight	<input type="checkbox"/>		bad	<input type="checkbox"/>		
Wear of Plunger seal	none	<input type="checkbox"/>		slight	<input type="checkbox"/>		bad	<input type="checkbox"/>		
Wear on Bearings	none	<input type="checkbox"/>		slight	<input type="checkbox"/>		bad	<input type="checkbox"/>		
Wear on Chain/Quadrant	none	<input type="checkbox"/>		slight	<input type="checkbox"/>		bad	<input type="checkbox"/>		
Wear on Rods	none	<input type="checkbox"/>		slight	<input type="checkbox"/>		bad	<input type="checkbox"/>		
Wear on Rising main	none	<input type="checkbox"/>		slight	<input type="checkbox"/>		bad	<input type="checkbox"/>		
Other										
Maintenance Data:										
Is preventive maintenance done:	good	<input type="checkbox"/>		fair	<input type="checkbox"/>		bad	<input type="checkbox"/>		
Why poor performance / breakdown:	no spares	<input type="checkbox"/>		no fund	<input type="checkbox"/>		no skill	<input type="checkbox"/>	no mechanic	<input type="checkbox"/>
No. of breakdowns:	times									
Was Pump Repaired:	Yes	<input type="checkbox"/>		No	<input type="checkbox"/>					
Distance to nearest spare-part shop:	Km									
Is tech./ mech. assistance available:	Yes	<input type="checkbox"/>		No	<input type="checkbox"/>					
Is maintenance system satisfying:	Yes	<input type="checkbox"/>		No	<input type="checkbox"/>					
Is the Pump caretaker trained:	Yes	<input type="checkbox"/>		No	<input type="checkbox"/>					
Is a user committee existing:	Yes	<input type="checkbox"/>		No	<input type="checkbox"/>					
Comments:										
Date:					Sign.:					

the sector, because more than 95% of the population is using water from groundwater sources for all domestic purposes. Problems are particularly acute in the 'dark' zones, where annual withdrawals exceed recharge.

Linkages. The link between the rural water supply programme and the rural sanitation programme is very poor. The same is true for inter-sectoral linkages, such as water supply and sanitation to health and education.

Narrow approach to sanitation. The State Government has a narrow focus on sanitation, mainly pursuing the creation of more home toilets. The subsidy-driven approach centres on the promotion of a single option for home toilets. Large segments of the population are beyond the reach or aim of the rural sanitation programme in the State.

Gaps

Rural Water Supply

Unreached population. Of the 104,000+ habitations, 4 % is not covered and 24 % only partially covered, to the current norm. Up to one-quarter of the households is taking water from unprotected sources. Reaching these unreached with basic water supply services using the standard technologies (handpumps and piped schemes) will be a substantial challenge.

Coverage norms. Even after full coverage to the current norm in terms of habitations is achieved, many households will continue using water from unprotected sources. Changing the norm from 'access' to 'use' would more realistically picture the true achievements of the rural water supply programme.

Water quality. More than 15% of the protected water supply sources is supplying chemically polluted water. An even larger proportion of protected sources is supplying, at least part of the year, water which is bacteriologically contaminated.

Sustainability. The comparatively scarce fresh water resources of the State are not properly managed. Competing users over-exploit precious groundwater supplies. Widespread pollution is another threat to the fresh water stores. Long-term planning is sorely lacking. In this situation, the groundwater resources, which are the backbone of most of the rural water supply schemes, are increasingly under threat.

O&M. The cost to Government of operating, maintaining and repairing the large water supply infrastructure is increasing year by year. Community involvement in creating sources of supply and in operating and maintaining these, is by-and-large completely lacking.

Rural Sanitation

Very low home toilet coverage. Home toilet use is still extremely low, especially in the rural areas and in the urban slums. Past Government efforts have resulted in some progress, but there is a clear need to adopt a more comprehensive approach if home toilet use is to increase significantly.

Lack of willingness to tap private resources. The promotion of home toilets is too dependent on Government resources and initiative. The Rural Sanitation Programme is yet to be designed so as to facilitate private initiative and make use of household resources. Promoting a range of appropriate toilet design options, a suitable private sector delivery system and access to credit for toilet construction are strategies, which are yet to be adopted.

School sanitation. There is still a substantial proportion of primary schools, which lack adequate safe water supply or toilets. For administrative reasons, a substantial number of primary schools are beyond the reach of the 10th Finance Commission funding for WatSan facilities.

UNICEF-supported WES programmes

UNICEF has been a partner to GoR right from the inception of the rural water supply and the rural sanitation programmes in the state. From the early 1970s till the mid-1980s, UNICEF support largely focused on the development of water well drilling, handpump installation and O&M systems. From the late 1980s, UNICEF started support for a wider range of programme components. In 1989, UNICEF established a Field Office in Jaipur. The closer interaction resulted in a number of new initiatives in the sector.

As of mid-1998, the Field Office has a staff strength of 20. Of the eight professional staff, two are working on the Child's Environment programme. To support these two staff members, the Field Office has one full-time consultant, who has extensive experience in the rural water supply programme in the State.

In 1998, the Field Office programme expenditure is expected to reach about US\$ 2.9 million, of which about US\$ 0.8 million (28%) will be on the Child's Environment programme, in support of the State water supply and sanitation sector. About 30% of the WES budget is allocated for water supply, 30% for sanitation (incl. social mobilisation, communication), 25% for guineaworm eradication surveillance and 15% for staff support.

Water Well Drilling

As elsewhere in India, UNICEF has considerably contributed to the development of well drilling for domestic water supply in Rajasthan. During the 1980s, UNICEF supplied 28 hydraulic drilling rigs, most of which are still in operation. PHED operates a total of 74 drilling rigs across the state. In 1997, the UNICEF-supplied rigs drilled about 2,600 of the 10,000 new borewells, which are added annually by PHED. From 1991 till 1998, UNICEF has substantially reduced support for water well drilling in the State. Presently, support is limited to the supply of rig spares not available in India for the few remaining UNICEF-supplied rigs, which are less than ten years old.

UNICEF has also contributed substantially to the strengthening of scientific source finding techniques. Geophysical survey equipment has been supplied and PHED staff has been trained on use and maintenance. With UNICEF support, the success rate of well drilling operations by PHED has increased.

Guinea Worm Eradication Programme

From 1984, UNICEF is supporting a major programme to eradicate guineaworm from the State. Over the years, the number of cases has steadily declined, and 1997 was the first year without cases. Close surveillance is continuing for two more years.

Well rejuvenation

With PHED capacity for well drilling ensured, UNICEF cooperation has moved towards sustaining existing tubewells. Three hydro-fracturing units (HFUs) and two tractor-mounted compressors (TMCs) have been provided for water well rejuvenation. PHED has achieved good results in using this equipment. UNICEF continues to provide support for service training, spares not available in India, and monitoring.

Water Quality Improvement

UNICEF is working with NGOs to introduce domestic defluoridation in eight fluorosis affected villages in two blocks of Dungerpur district. This project also serves as a operational research ground, where the approaches and technologies necessary to set up a community- and household-managed approach to fluorosis control. The project has reached more than 400 households. Based on the experience gained so far, Government of India is extending support to scale up the approach to several other districts.

UNICEF is also working with PHED to develop and implement an effective IEC strategy as part of fluorosis control projects in the State.

UNICEF is also supporting PHED to take measures to ensure better construction of borewells, by providing adequate casing and proper sanitary sealing.

Decentralised Handpump Maintenance

The India Mark III in its 65 mm version has not been very successful in Rajasthan, because it is limited to an effective installation depth of 30-35 metres only, which is inadequate in increasingly large areas in the State. UNICEF is supporting PHED to introduce the 50 mm version of the India Mark III handpump, which can be installed to depths of 50 metres. UNICEF is also supporting PHED to train all their staff on the operation, maintenance and repair of India Mark III handpumps. Support is also provided for the introduction of TARA handpumps in areas of the State where water levels are relatively high.

UNICEF is also a partner to GoR in building capacity at Gram Panchayat level for better maintenance of handpumps.

CDD WatSan

In 1997, implementation of the UNICEF-assisted CDD-WatSan strategy was extended from two block to cover all of Alwar district. This strategy, linking water-sanitation-and health, aims to reduce diarrhoeal mortality and morbidity. The strategy aims to increase the use of safe water, sanitary toilets and the practicing of personal hygiene, especially proper handwashing; complemented with community and household action to properly manage diarrhoea among children. The District-level Project Coordination Committee establishes linkages with ICDS (AWW), health, education and other line agencies.

From 1998, UNICEF will support the implementation of an integrated water supply and sanitation project in Tonk district. In many respects, implementation will follow the CDD-WatSan strategy.

Alternate delivery system for sanitation

The rural sanitation programme is implemented with UNICEF support in 802 villages in 135 blocks, thus fully covering 14 districts.

With UNICEF support, 33 RSMs have been set up, under the management of cooperatives. However, the sale of sanitation related items of these RSMs has remained low, as the cooperatives prioritise other sales. Efforts are on to examine the problems and constraints faced by these RSMs, and take remedial measures. UNICEF continues support for the training of masons, who not only construct toilets but also act as promoters for the RSMs.

IEC

In 1994, UNICEF supported RD & PR to strengthen the training & IEC activities of RD & PR by setting up a cell RD & PR.deptt. UNICEF is supporting the training of RSP functionaries by providing UNICEF-developed training modules.

Influence on Government Sector Policy

The following table lists the programme components or strategies, which UNICEF has been advocating for in the State, and a frank assessment of the impact this advocacy has so far had on the State WES programmes.

UNICEF-GOI WES PROGRAMME OBJECTIVES (1991-98)	ASSESSMENT OF IMPACT ON STATE POLICY
SANITATION:	
Progressive reduction of subsidies to promote toilets	There has been no progress on this yet.
Promotion of a range of toilet design options	Not adopted yet.
Use of alternate delivery system to promote sanitation	Limited to training of masons, which improves the present delivery system.
RSMs or production centres in 20% of blocks	So far. 33 RSMs have been set up.
Use of the seven components of sanitation	GOR included soakpits and washing platforms in the State Rural Sanitation Programme.
Safe water handling practices, as part of IEC	Though started in four districts with GOI support, this IEC initiative got bogged down.
Functioning IEC cells at State Level	
School sanitation introduced	The 10 th Finance Commission recommendation for water supply and sanitation facilities is partially implemented. Hygiene education is not yet taken very seriously.
Eradication of guinea worm disease	The guineaworm has been virtually eradicated, with 1997 the first year of zero cases. RIGEP an independent body is actively supervising the surveillance process. Second year of no case report.
WATER SUPPLY:	
One spot source of drinking water for 150 people	The State norm remains 1:250. Specific projects such as SWACH/CDD WatSan are attempting to reduce this ratio to 1:150.
Reduced dependence on UNICEF for support for State water well drilling operations	UNICEF has steadily reduced support for water well drilling operations, while GoR has made rupee allocation to procure spares which were till recently imported
Increased success rate in well drilling, resulting from the use of scientific source finding techniques.	Govt. practices site selection using geophysical instruments for the wells in hydro-geologically problem areas, thus resulting to improved success rates.
Proper well construction techniques	Govt. adopted on experimental basis. GoR will be studying the impact in 1998.
Maintenance and repair of hand pumps with community participation, especially women	Still to be worked out.
Cost-recovery for hand pump maintenance and repair	
Use of VLOM type handpumps (IM III and TARA)	GOR is using VLOM pumps selectively in the state Rural Water Supply Programme. India Mark III (50 mm) pump is increasingly recognized by the GoR as a suitable model.
Village Watsan Committee at Panchayat level	In the Janta Jal Yojna, the O & M of water supply to a village through electric pumps from well/borewell is done by the Panchayats, with GoR contributing for electricity charges and as fixed sum towards normal maintenance. The Panchayats must meet excess costs.
Use of low-cost and appropriate water supply technologies	During the 1998 budget session, the Hon'ble minister of PHED made a commitment to include rain water tankas and groundwater recharge activities in the State Rural Water Supply Programme, on an experimental basis.
Use of appropriate water treatment at home/community level	Based on the Dunderpur pilot scheme, GoI has sanctioned DDFUs for 220 villages to 4 districts, which is implemented by SWACH.
INTRA- and INTER-SECTORAL CONVERGENCE	
Effective operational linkages between water, environmental sanitation and health interventions	GoR, with NGO support, is implementing the CDD-WATSAN strategy in Alwar district.
WES interventions as an effective entry point for CDD, nutrition and women's development	

UNICEF-GOI WES PROGRAMME OBJECTIVES (1991-98)	ASSESSMENT OF IMPACT ON STATE POLICY
Appropriate watershed management	UNICEF has not significantly worked on this aspect.
Effective use of well rejuvenation technologies	High degree of usage of TMCs/HFUs. GoR is requesting UNICEF for more units, but has so far not used State RWSP resources for this purpose.
MIS	
Use of Management Information Systems relevant and practical to the WES sector	The existing centralized system is not managing information very efficient.

Strengths/Weakness/Opportunity/Threats

Strengths	Weakness	Opportunity	Threats / Constraints
<ol style="list-style-type: none"> Partnership with Government Successful model of SWACH/RIGEP has demonstrated among the Govt. planners to go for similar effort. Functional PRI structures 	<ol style="list-style-type: none"> As fresh, potable water is a scarce commodity, short-term considerations overtake long term sustainable solutions. Still a long way to go for community participatory planning. 	<ol style="list-style-type: none"> Broad-basing the Janta Jal Yojna for Regional Water Supply Schemes. Opportunity for developing community based programming. Orient PRIs on WatSan management. 	<ol style="list-style-type: none"> The presence of other funding agencies poses challenges for UNICEF. Sometimes other agencies are more delivery oriented. Their presence has helped to increase the number of professional NGOs; if only these NGOs could be more community oriented! Political considerations overtake genuine community demand for equitable distribution; prevents the creation of an environment for community to pay for facilities and services.

Key Partners and Contacts

Government:

PHED; RD&PR; Groundwater Board; Department of Watershed; Municipalities

NGOs

IIRD; ASTHA; Chetna Arogya Mandir; SIHFW

Bilateral agencies

SIDA

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