India:
Water Supply, Sanitation and Hygiene

Moving towards the 21st Century

The Environment of the Child
in
Andhra Pradesh State

Water Supply and Sanitation Programmes

and

UNICEF's role and contributions

UNICEF Hyderabad
October 1998

ANDHRA PRADESH

Demographic details, key socio-economic and health indicators

S.No	Indicators	Status	Source
Demographic			
1.	Population	66.5 mln	Census 91
2.	% of India total population	7.85 %	"
3.	No. of districts	23	"
4.	No. of development blocks	1092	"
5.	No. of main villages	26.591	"
6.	No. of habitations	70112	PHED, Hyderabad
7.	No. of Gram Panchayats	NA	
8.	No. of towns	264	Census 91
Socio-economic			
1.	Rural population on % of total population	73.08	Census 91
2.	% scheduled caste population	15.92	Census 91
3.	% scheduled Tribe Population	6.31	Census 91
4.	No. of Primary Schools	49141	6th AIE survey
5.	No. of Upper Primary Schools	6381	"
6.	No. of Secondary Schools	NA	
7.	No. of Higher Secondary Schools	NA	
8.	No. of Pry. Health Centres	NA	
9.	No. of Health Sub-Centres	NA	
10.	Sex Ratio	972	Census 91
11.	Population below poverty line	17.35 %	"
12.	Per capita income		"
Human Development Indicators			
1.	Overall Literacy	44.1 %	Census 91
2.	Female Illiteracy	32.7 %	"
3.	IMR (per 1000 live birth) - 1996	66	SRS '96
4.	Under 5 Mortality Rate (per 1000)	91.2	NFHS 92-93
5.	Malnutrition among children under 4 years of age (Weight-for-age)	49.1 %	NFHS 92-93
6.	Children fully immunized by 2 yrs	71.9 %	MICS 1998

The State of Andhra Pradesh is one of the States in the India which has been making rapid economic progress in recent years. The economy is primarily dependent on agriculture although during the last two decades substantial industrial infrastructure has developed also in the State. Farmers from Andhra Pradesh particularly in the coastal districts of Krishna, East Godavari, Guntur etc are enterprising and have been following superior farming practices. The coastal regions of Andhra Pradesh are well known for cash crops like sugar cane, tobacco and chillies. Lately poultry and dairy are activities which have picked up well. In fact Andhra Pradesh supplies poultry and dairy products as well as fish to a large segment of the south-east India market.

It follows that the demand for water is also very high in the State particularly for protective irrigation for growing cash crops.

Status of WES programmes

Access to safe drinking water

As per the records of Rajiv Gandhi National Drinking water Mission 99% of the population in the State have been covered with safe drinking water; all upper castes and tribal population have access to at least one source of safe water while the coverage of Scheduled Castes is 93%.

Using the volume of water available as the criteria, the distribution of habitations is as follows:

Access to water →	NC	< 10 lpcd PC – 1	11-20 lpcd PC – 2	21-30 lpcd PC – 3	31-40 lpcd PC – 4	>40 lpc FC
No of habitations	380 (0.5%)	12,019 (17.2%)	4,681 (6.7%)	6,822 (9.8%)	4,561 (6.5%)	41,649 (59.7%)

Source: PRED Hyderabad, May 1998

Percentage Coverage in terms of population served is as follows:

Goal	Norm	1980	1990	1993	1995	1998
Universal access to safe water	Pop: 1:250 Qty: 40 lpcd Dist. 1.6 km Qlty: safe	45%	70%	79%	85%	>90%

Access to sanitation facilities :

Although the Census of 1991 indicated a coverage of only 6.6 % in the rural areas, subsequent surveys (NFHS-92/93 , NCAER-94) have shown higher coverage figures of 9-15 %. The recently conducted MICS (1998 draft report) indicated a coverage of 15 % also.

Since 1986-87 the Government of India have been supporting the State through the CRSP while the State has been providing matching assistance under MNP as in other States. Since 1992-93 that is the beginning of 8th Plan, a total of Rs 375 Million have been spent from central resources while the State has invested Rs 434 M. in the programme.

The Panchayati Raj Engineering Department (PRED) is the nodal agency to implement the Rural Sanitation Programme in the State. In 1997 the GoAP has taken up the Third Janmabhoomi Programme through which intensive awareness is created to generate demand for sanitation facilities.

Construction of household latrines through PRED

Cumulative till March 94	1994-95	1995-96	1996-97	1997-98	Total as on April 98
1,64,741	97,104	91,913	46,220	1,36,553	5,36,531 (5.2%)

Source: PRED Hyderabad, May 1998 . For details see annexure I

Percentage households having access to home toilets

Goal	Norm	1980	1990	1993	1995	1998
Access to **sanitary** means of excreta disposal	A sanitary latrine for each household	<1%	8%	11%	14%	20%

Note: Above figures include HH latrines constructed through government and private initiative. (It is estimated that household latrines constructed through private initiative is roughly three times the number of latrines constructed through Government initiatives).

State WATSAN sector policy, plans and ongoing programmes.

During the 1990s, the Andhra Pradesh Rural Water Supply & Sanitation Programme has addressed technological, managerial and community development issues with different degrees of urgency and success.

Rural Water Supply Programme

In line with national policy. Andhra Pradesh defined access to safe drinking water in terms of providing one hand pump/stand post source for 250 people (population norm), 40 litres per capita per day (quantity norm), water source within 1.6 kms (distance norm) and safe water (quality norm).

Rural Sanitation Programme

Though CRSP guidelines were accorded approval in 1986, real work in the sector began in 1993. The 1993 programme envisaged an integrated approach to rural sanitation. The state programme includes the construction of individual sanitatary latrines, the conversion of dry latrines into low cost sanitary latrines, construction of village sanitary complexes for women, establishment of rural sanitary marts, total sanitation of villages and the organisation of intensive Information Education Communication (IEC)/health education campaigns.

The state initially provided for matching contributions divided between state and Central Government for individual latrines. Provision was there for beneficiary contribution to the extent of 20% and the balance 80% being equally met by the state and centre.

Substantial progress has been made since 1993. Around 5.6 lakh sanitary toilets have been constructed under CRSP and Minimum Needs Programme, reflecting a sharper increase in coverage i.e. from an estimated 11% in 1993 to approximately 20% by April 1998.

UNICEF cooperation has since moved from a subsidy driven approach to one with no subsidy. The rural sanitation programme which earlier comprised of latrine construction work only has moved with sanitation being recognised as a package, with seven components i.e. 1) handling of drinking water; 2) disposal of waste water; 3) disposal of human excreta; 4) disposal of garbage and animal excreta; 5) home sanitation and food hygiene; 6) personal hygiene; 7) village sanitation.

The IEC/HRD Cell

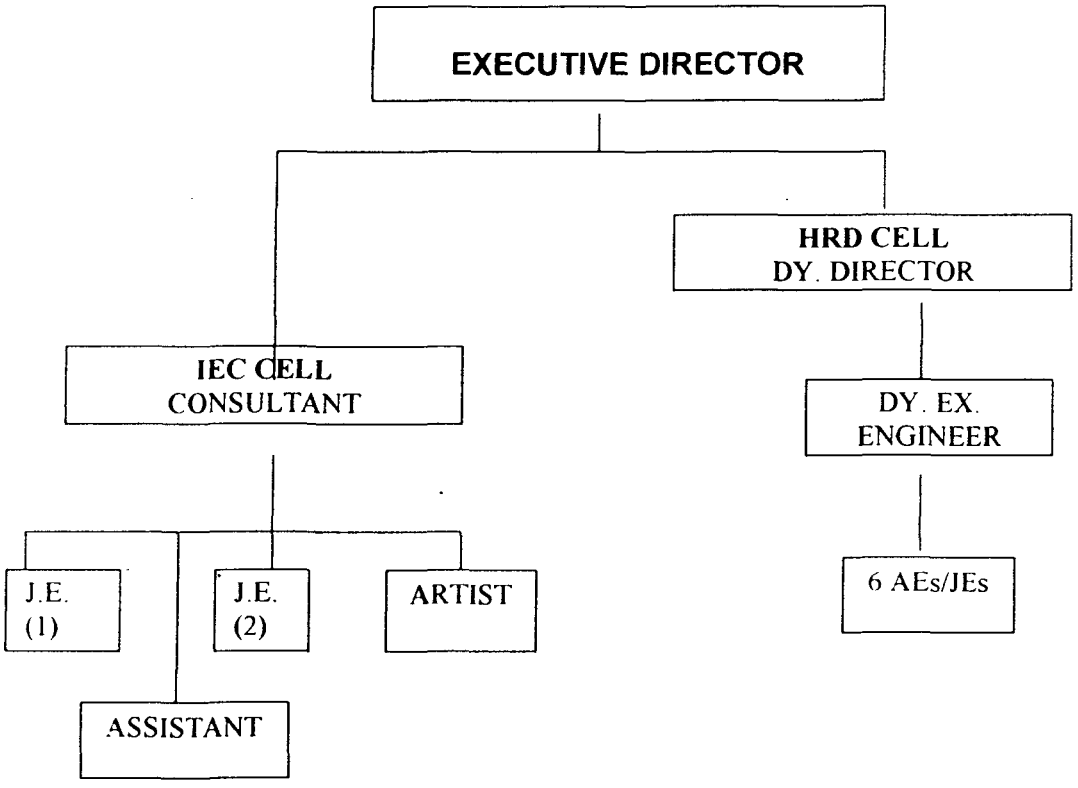
In order to develop capacity and capability within the department, PRED established its own HRD Cell, with training wing named 'Research Development and Training Centre' (RDTC) to conduct in-house training programmes for the benefit of department staff and field functionaries. The Technology Mission further provided the necessary impetus to strengthen the HRD cell. An Executive Director (CE level) heads the HRD cell, assisted by one Dy Director, (EE rank) and 6 AEs/JEs.

The HRD cell is responsible for organising training events, generally covering the following:

1. Grass root level training for motivators in villages for building awareness to detail/standards, promoting decentralised maintenance of hand pumps.
2. Training of trainers for building capacity towards field level training programmes on water and sanitation.

3. Orientation/Training of senior, middle and junior level departmental staff and other professionals working for the RWS sector.
4. Induction training/orientation of newly recruited staff.
5. Training of hand pump mechanics, technicians and field staff.
6. Need based training programmes, supported by UNICEF, including training of Geologists, rig/HFU/TMC crew, masons, etc.

During 1997, PRED created an IEC cell along with the above mentioned HRD cell, headed by the same Executive Director. The structure of IEC/HRD cell is as under:



School Sanitation

The school sanitation strategy is promoted by the Rajiv Gandhi Drinking Water Mission. It has linkages with the District Pimary Education Programme (DPEP) which was started in 1996-97 in Andhra Pradesh. Besides ensuring essential water and sanitation facility in each school, school sanitation strategy includes hygiene education for children and awareness creation in the community, using the school as a channel of communication.

Most of the schools in the state do not have any toilet or drinking water facility. Further, most of the toilets existing are non functional due to faulty construction or stink due to lack of water and common maintenance. It has been observed that a major reason for the drop out of girls from rural schools is due to lack of toilet facility. Lady teachers also face a similar problem. Most hand pumps in schools are non-functional and not repaired for a long time. (Source: DPEP manual: AP)

Strength and weaknesses of existing institutional structure

STRENGTHS	WEAKNESSES
▪ Advocacy with A.P. State Housing Corporation, making construction of sanitation facility mandatory with low cost rural houses. ▪ Partnerships with institutions, NGOs, Panchayati Raj Institution, Field Functionaries ▪ Training of women masons and DWCRA women's groups as entry point for Convergent Community Action ▪ Environment improvement around drinking water sources ▪ R&D on modified India Mark III (50 mm OTC) handpumps ▪ Introduction of DDFUs based on Activated Alumina technology. ▪ Effective use of Tractor Mounted Compressors ▪ Development of Force Lift handpumps	▪ 'Value' of clean water, as a scarce resource is still not adequately recognised ▪ Inadequacies in the subsidy – driven programme ▪ Community participatory approaches are significantly lacking ▪ Environmental sanitation does not receive the priority it deserves ▪ Social marketing strategies, such as RSMs are slow in take off. ▪ Over emphasis on a single construction model. ▪ Neglect of School Sanitation ▪ Poor utilisation of assets, lack of correct attitudes, perception and knowledge. ▪ Focus on coverage rather than sustainability

Decentralisation

The state has identified four districts namely East Godavari, West Godavari, Krishna and Guntur for decentralised operation and maintenance of drinking water facilities. The state IEC cell will focus its communication and social mobilisation efforts in these districts.

Gaps - unreached area and groups

It is estimated that approximately 40% of all habitations in the state are still partially covered as per national/state quantity norm of minimum 40 lpcd.

Problems and issues

Rural sanitation

- At State level, environment protection and sanitation concerns are not receiving the priority they deserve.
- While political will to take up sanitation on a priority basis is building up, the managerial and organisation support required for translating this into reality is inadequate.
- Currently, government implements only the subsidised component of the rural sanitation programme. Moving away from subsidy is still not a state priority.
- The sanitation upgradation approach is not seen as a part of the CRSP guidelines - as a result, the state still prefers to promote a single costly design.
- Widely varying standards for subsidies are seen in the rural Sanitation programme. This makes it difficult to promote construction of home toilets, in the government programme, without subsidy.

Rural Water Supply

Despite overall improvements enormous challenges remain.

- Because of increase in population – the demand for clean water has increased and problems of scarcity and contamination are becoming severe.
- The environment of the children is particularly under stress.
- The sustainability of the millions of water supply systems is under threat from falling water tables, caused by intensive use of fresh water for irrigation and industry.
- The fresh water availability is further aggravated by indiscriminate pollution of surface as well as ground water.
- Decentralised maintenance of water systems is slow in implementation.

UNICEF-GoAP programme

UNICEF collaboration started in the early seventies, as a response to drought emergencies and acute water scarcity. Since then challenge has been for the provision of a minimum level of water supply and sanitation for those most in need. This at the early stage, involved primarily the rapid drilling and installation of boreholes with hand pumps in rural areas.

The commitment during the first half of the '90s focussed more specifically on the goals of universal access to water and sanitation.... and to establish the process for developing, implementing and monitoring action towards these goals. Increasing awareness of the need for sanitation, hygiene education, improved community participation and capacity building with greater emphasis on the central role of women became important features of the programme. Simultaneously, with an emphasis on low-cost approaches, UNICEF contributed directly to the provision of water supply to an estimated 2.5 million people and sanitation to approx 50,000 households. Thus the pace of efforts in the field of water supply and sanitation increased significantly.

During the last MPO period (1991-95) and bridge period (1996-98), UNICEF's support has focussed increasingly in the context of Child Rights. In line with article 24 of the convention, UNICEF continue to advocate and support measures to combat disease and malnutrition within the framework of primary health care. The CDD WATSAN strategy and School Sanitation initiatives have directly contributed to this approach. Similarly, over the past few years, UNICEF - GOAP cooperation has grown, increasingly recognising that human health and well-being depend on a healthy environment.

As of mid-1998, the Field Office has a staff strength of fifteen. Of the four professional staff, one is a water supply and sanitation specialist.

In 1998, the Field Office programme expenditure is expected to reach about US$ 3.05 million, of which about US$ 0.65 million (21.3%) will be on the Child's Environment programme, in support of the State water supply and sanitation sector. About 41.3% of the WES budget is allocated for water supply, 40.1% for sanitation (incl. social mobilisation, communication), 6.2% for MIS and 12.4% for staff support.

The following covers the range of aspects covered by UNICEF programme of cooperation in water supply and sanitation in Andhra Pradesh.

Programme of collaboration

Water Well Drilling

As elsewhere in India, UNICEF has considerably contributed to the development of well drilling for domestic water supply in A.P. During the 1980s, UNICEF supplied -- hydraulic drilling rigs, most of which are still in operation in Anantapur, Vizag, Karimnagar, Chittoor, and Cuddappah districts. PRED operates a total of 69 drilling rigs across the state. In 1997, the UNICEF-supplied rigs drilled about 140 of the 1900 new borewells, which are added annually by PRED. From 1991 till 1998, UNICEF has substantially reduced support for water well drilling in the State.

UNICEF has also contributed substantially to the strengthening of scientific source finding techniques. Geophysical survey equipment has been supplied and staff trained on use and maintenance.

Well rejuvenation

With PRED capacity for well drilling ensured, UNICEF cooperation has moved towards sustaining existing tubewells. Three hydro-fracturing units (HFUs) and five tractor-mounted compressors (TMCs) have been provided for water well rejuvenation. UNICEF continues to provide support for service training, spares not available in India, and monitoring. In 1997, more than 1,680 borewells have been rejuvenated/flushed using the UNICEF supplied HFUs and TMCs, performance is recognised to be very successful.

Water Quality Improvement

Environment protection and upgradation has been carried out around 1,000 handpump platform sites, with community involvement. H_2S vials are in use as a simple, cost effective and reliable method to assess the bacterialogical contamination in drinking water.

Fluorosis Control

Under the Integrated Fluorosis Control Project (IFCP), 300 domestic defluoridation filters have been provided to needy households in fluoride-affected villages of Anantapur. Concurrent monitoring is in place.

Decentralised Handpump Maintenance

Community Based Handpump Maintenance is being pursued in Rangareddy district - an approach to be replicated while initiating decentralised maintenance in four other districts by the state.

Operational Research

Under the overall guidance of UNICEF WES Section in New Delhi, operational research efforts are ongoing, to develop the 50 mm version of the India Mark III VLOM handpump. Field trials are being conducted on UPVC / GI riser pipes, Universal Cylinders, fibreglass connecting rods, ring couplers etc.

Management Information System for WatSan

Computerised software viz RIMS/HMS/SPMS has been made functional and operational. Periodic feedback on the monthly performance of rigs and hydrofracturing units is monitored.

Sanitation

UNICEF has extended support to set up 47 Rural Sanitation Production Centres, nine Rural Sanitary Marts and four Sanitation Parks, established through the A.P. State Housing Corporation. In addition, six RSMs have been established by NGOs, through PRED.

From single design to a range of technological options, is now adopted by the state ..... a step towards a more flexible and upgradation approach .

Innovative Approaches, Involvement of Women/Gender issues/ Involvement of NGOs

Training of women masons, selected from DWCRA groups, as an entry point to the Convergent Community Action (CCA) approach is being successfully conducted in Medchal block, Rangareddy.

Influence on Government Sector Policy

- Access to Sanitation and Water and protected Environment is now increasingly seen as basic Rights of the Child.
- Decentralised operation and maintenance of water systems is being taken up by the state in four districts. Community involvement and ownership of facilities now recognised as an essential element of sustainability.
- Social services and convergence of water, health, hygiene, sanitation and with other sectors .....Convergent Community Approach (CCA) .... gaining momentum.
- Support to ongoing community based hand pump maintenance - promoting the active involvement and empowerment of women.
- Address concerns regarding Environment - starting with protection and upgradation around drinking water sources.
- Concurrent sector monitoring and project progress evaluation.
- Sanitation no longer identified with construction of latrines alone: but as a package of interventions (seven components of sanitation).
- A mandatory 10% of CRSP allocation available to the state to promote Information Education and Communication related activities.
- Greater emphasis on sanitation and hygiene education in order to maximize social and health benefits.
- Advocacy for sustainability of services being pursued, with focus on promotion, facilitation and coordination of services rather than merely provision.
- Appropriate technologies continue to have a vital role to play.
- The modified India MK-III, VLOM handpump is emerging as a more reliable, sturdy and cost-effective displacing even the conventional India Mark III handpump.
- Monitoring coverage, to identify the most unreached.
- NGOs playing a catalytic role as champions of the poor and agents of change.

The following table lists the programme components or strategies, which UNICEF has been advocating for in Andhra, 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
Progressive reduction of subsidies to promote toilets	No significant progress. Government implements only subsidized component of the rural sanitation programme.
Promotion of a range of toilet design options	Primarily the pour flush twin pit latrine design is promoted widely by PRED in the state. Upgradation approach, based on a range of toilet designs and options has also been taken up since 1997.
Use of alternate delivery system to promote sanitation.	Being promoted through Rural Sanitary Parks.
RSMs or production centres in 20% of blocks	Production centres have been established in each district (through A.P. State Housing Corportion). RSM approach still needs scaling up.
Use of the seven components of sanitation	Impetus given to hand washing, environment protection around water sources, construction of drains / soak pits (liquid waste disposal), washing platforms etc.
Safe water handling practices, as part of IEC	IEC activities have been started in four districts.
Functioning IEC cells at State level	Functional since 1997
School sanitation introduced	State still to accord priority
One spot source of drinking water for 150 people	State norm remains 1:250
Reduced dependence on UNICEF for support for State water well drilling operations	Yes. PRED is contracting out almost all drilling operations.
Increased success rate in well drilling, resulting from the use of scientific source finding techniques	Yes. State capacity and infrastructure improved with the supply of Geophysical equipment.
Proper well construction techniques	Still a long way to go
Maintenance and repair of handpumps with community participation, especially women	Pilot projects launched in a few districts have shown mixed results.
Cost-recovery for handpump maintenance and repair	Cannot be taken up until decentralized handpump maintenance is prioritised throughout the state.
Use of VLOM type handpumps (IMIII and TARA)	Modified India Mark III (VLOM-50 mm OTC) field tested successfully in Ranga Reddy district
Village WatSan Committee at Panchayat level	Being prioritised by the state in four selected districts.
Use of low-cost and appropriate water supply technologies	Conservation of water through rain water harvesting methods is being prioritised by the state, particularly in urban areas.
Use of appropriate water treatment at home/community level	Candle type two chamber water filters are widely used in the state. DDFUs have been introduced in Anantapur.
Effective operational linkages between water, environmental sanitation and health interventions	PRED and APARD have started focussing on building effective operational linkages in four districts.
WES interventions as an effective entry point for CDD, nutrition and women's development	Successes reported from Ranga Reddy and Anantapur districts.
Appropriate watershed management	Development of watersheds is being taken up vigorously by the Department of Rural Developmen, Andhra Pradesh . During 1997-98, over 1680 borewells were successfully Rejuvenated using 3 HFUs and 5 TMCs.
Effective use of well rejuvenation technologies	
Use of Management Information Systems relevant and practical to the WES sector	MIS has been made functional in certain areas such as HMS, RIMs, SPMS, relevant to monitoring performance of rigs, hydrofracturing units and related spare parts.

Partners

UNICEF's partners include:

Government

Panchayati Raj Engineering Department, Department of Rural Development, A.P. State Housing Corporation, District Administrations, Relief Commissioner, Tribal Welfare and Panchayati Raj Institutions.

NGOs

Mass Education and Organisation Society (MEOS), Society for Participatory Developmen (SPD), Annie Owe Memorial Orphanage (AOMO), Vijaya Mahila Mandali (VMM), Syndicate Farmers Association (SFA), Development Action for Rural Environment (DARE) etc.

Bilateral Agencies

Netherland Assisted Project (NAP), DFID, UNDP.

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PRED Annual report 1997
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Census 1991
National Nutrition Monitoring Bureau
AP-DPEP Manual

ANNEXURE I

District-wise construction of household sanitary latrines Through Government programme

S.No.	District	Total No. of Households (as per 1991 Census)	Total No. of I/Ls constructed upto March 98
1	Srikakulam	452815	10733
2	Vizianagaram	386930	12104
3	Visakhapatnam	447965	25034
4	East Godavari	784725	59052
5	West Godavari	619690	53465
6.	Krishna	551625	62522
7	Guntur	680620	49437
8	Prakasam	504975	29769
9	Nellore	427350	24337
10	Chittoor	552215	17362
11	Cuddapah	378875	16009
12	Ananthapur	475860	21236
13	Kurnool	413580	12507
14	Mahbubnagar	516920	14578
15	Rangareddy	250535	25125
16	Nalgonda	519655	28067
17	Medak	355840	5269
18	Nizamabad	317120	11427
19	Warangal	480090	29240
20	Khammam	373970	16202
21	Karimnagar	517750	8725
22	Adilabad	332150	4331
	Total	**10341255**	**536531**