

**PROCEEDINGS
OF
THE CONFERENCE OF STATE
CHIEF PUBLIC HEALTH ENGINEERS
(INDIA)**

**Preparation for the International Drinking
Water Supply and Sanitation Decade (1981-1990)**

- November 18-20, 1979

NEERI, NAGPUR-440 020

Collaborators

**REGIONAL OFFICE OF SOUTH-EAST ASIA
WORLD HEALTH ORGANIZATION, NEW DELHI**

**CENTRAL PUBLIC HEALTH & ENVIRONMENTAL ENGINEERING ORGANIZATION
MINISTRY OF WORKS AND HOUSING, NEW DELHI**

**NATIONAL ENVIRONMENTAL ENGINEERING RESEARCH INSTITUTE
NAGPUR**

INTERNATIONAL CONFERENCE CENTRE
FOR COMMUNITY WATER SUPPLY

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SUMMARY

The Conference was of the view that the decision makers and planners should be actively involved at all levels in respect of the Decade Programme and its goals.

There was also unanimity of opinion that provision of a minimum level of service of access to safe water and sanitation to the people who are deprived of this should be the first objective, with future plans to improve these levels of service being left to the subsequent Decades. To achieve the set goals, strong and appropriate organizations should be set up both at the Centre as well as in the States.

It was also stated that emphasis should be laid on :

- i) training facilities for the personnel;
- ii) ensuring adequate supply of materials and equipment for the water supply and sanitation projects ;
- iii) effective operation and maintenance of the services; and
- iv) involvement of the local community in the project planning, programming and implementation.

Replies to the WHO Questionnaire seeking information on Sector Status and preparations for the Decade in connection with the Regional Consultation on activities for the International Drinking Water Supply and Sanitation Decade (1981-90) were received from majority of the States at the Conference.

2. OBJECTIVES OF THE CONFERENCE

The Conference was devoted to :

- i) an overall review of the preparatory activities of the International Water Supply and Sanitation Decade;
- ii) assess the constraints and other pertinent issues; and
- iii) outline the follow-up actions needed to accelerate the progress in respect of water supply and sanitation.

3. CONVENERS AND PARTICIPANTS

The Conference was jointly convened by the Central Public Health & Environmental Engineering Organization of the Ministry of Works and Housing and the National Environmental Engineering Research Institute, Nagpur, with the cooperation of the Regional Office of World Health Organization, New Delhi. The participants included State Chief Public Health Engineers, Professors of Public Health Engineering as well as Research Workers in the field of Public Health Engineering and the representatives from UNICEF, New Delhi.

4. CONDUCT OF CONFERENCE

At the inaugural session on the 18th of November, 1979, Dr. B.B. Sundaresan, Director, NEERI, welcomed the participants after which Mr. S.T. Khare, Chief Engineer, Maharashtra, was elected unanimously as Chairman. Mr. P.K. Chatterjee, Adviser(PHEE) then delivered the opening address following which Mr. D.V. Subrahmanyam, Regional Adviser(EH), WHO, spoke on the

International Drinking Water Supply and Sanitation Decade. Dr. John D. Skoda of UNICEF spoke on " UNICEF's Role - India Programme ". Thereafter, the agenda was adopted and the State Chief Engineers were invited to present a brief State Review.

On 19th of November, 1979, 3 Working Groups were formed to discuss the issues as listed below :

WORKING GROUP NO. 1 :

- i) Service levels and targets;
- ii) Urban and rural excreta disposal; and
- iii) Project formulations.

WORKING GROUP NO. 2 :

- i) Institutional framework and management;
- ii) Human resources; and
- iii) Materials and supplies.

WORKING GROUP NO. 3 :

- i) Operation and maintenance of water supplies and sewage disposal; and
- ii) Involvement of local authorities and communities.

The 3 Working Groups discussed separately and came out with a report stating the problems, reviewing the constraints and listing recommendations.

The plenary session wherein all the participants were present discussed the following issues :

- i) India and Decade goals;
- ii) Coordination of water supply and sanitation programmes with development programmes in other sectors;
- iii) Coordination of development of water supply for drinking purposes with the development of water resources; and
- iv) Involvement of decision makers in the Decade goals and programmes.

On the morning of the 20th of November, 1979, a field visit was arranged wherein the inauguration of Slow Sand Filtration Demonstration Plant at Burujwada was attended by the participants.

The Conference ended with a concluding session on the afternoon of 20th November, 1979.

5. RECOMMENDATIONS

5.1 India and Decade Goals

- 5.1.1 India having participated in and agreed to the resolutions of the UN Water Conference in Mar del Plata, Argentina, should endeavour to achieve the goals set for the Decade (1981-1990) and provide to its citizens a suitable level of service that would improve their quality of life in general.
- 5.1.2 The Government of India should take a policy decision on water supply and sanitation and declare the same as for industry, education, etc., setting forth the targets, method of approach with a positive commitment to meet the goals which will fit in with the overall

Decade Programme. The decision should be conveyed to the State Governments at the highest level highlighting the importance of implementing the same. The Planning Commission should be involved in the policy decisions.

- 5.1.3 The total outlay for the Decade Programme being of a very high magnitude, the strategies for implementation have to be thoroughly gone into, particularly on aspects like trained manpower, materials required for projects, operation and maintenance as well as timely flow of financial resources.
- 5.1.4 The total quantity of water available being limited, different agencies compete for a share of water. Water for drinking purposes being a small fraction in comparison with irrigation and power, specific commitment for apportioning the required quantity should be clearly set forth. In view of the quality deterioration in surface and ground water due to domestic and industrial pollution, proper management to safeguard water quality and conserve the available water should be ensured.
- 5.1.5 Although the Decade goals have been set almost three years ago, the preparatory phase (1978-80) of the programme is yet to gather momentum. Steps have to be taken urgently to speed up the activities to enable commencement of the programme by 1981.
- 5.1.6 The State Public Health Chief Engineers should get actively involved in implementing the programme by suitable recasting and restructuring of programme and priorities to enable achievement of targets as early as possible.

5.2 Service Levels and Targets

- 5.2.1 In view of the pressure on capital for various development programmes, a realistic approach should be adopted to meet the objectives of providing a minimum level of service through access to safe water supply and sanitation to the people who are deprived of this service. The financial resources that will be available during the Decade should be indicated by the Government of India, so that the projects could be designed with appropriate levels of service. Resources should be maximised through involvement of communities in the projects. In the Decade following, suitable programmes should be instituted to improve the levels of service for the population. In as much as it is possible through appropriate technology to provide water of a quality that would ensure safety against intestinal water-borne diseases, such a standard should be adopted as the minimum for promotion of public health.
- 5.2.2 During the Decade, at least 50 per cent of the households in each State should be provided with sanitary latrines. So far, there is no breakthrough in this area and in order to achieve the modest targets given above, a multi-disciplinary organisation exclusively for this purpose should be set up, which will motivate the communities and enable carry out the programme.
- 5.2.3 All residents of urban communities should have access to a sanitary latrine connected to a suitable collection and disposal system. Where individual household latrines are not possible for some reasons, community latrines supported with adequate cleaning and maintenance arrangements should be provided. Where sullage is creating nuisance or health hazards (either in rural or urban areas) suitable collection and disposal systems should be provided.

5.2.4 Action should be initiated at the Chief Engineers' level to assess the magnitude of the problem at the State level. Inadequacies in research and development in the relevant areas should be taken up by research organizations.

5.3 Project Formulation

5.3.1 Projects should be put up for investment on the basis of priority established in the National Programme. Information on criteria and conditions of different funding agencies (both internal and external) should be collected, collated and used at the State level as well as at the Centre. The planning capability should be strengthened at the Centre as well as in States to ensure optimum utilisation of resources.

5.3.2 Every State must have a separate evaluation cell to assess the deficiencies and short-comings including organisational aspects and report in suitable form for necessary feed-back.

5.4 Institutional Framework and Management

5.4.1 The administrative and institutional frame-work and managerial capabilities available in the States are inadequate to meet the challenge of the task lying ahead. It is necessary to establish appropriate institutions at the State level with a clear policy, mandate and autonomy, and endowed with the required resources to fulfil the task. Responsibility and accountability for fulfilling the mandate could then be ensured.

5.4.2 In order to coordinate and help the State efforts and formulate national policies and provide guidance, the existing organisational set-up at the Centre is grossly inadequate. A strong organisation similar to the Central Water Commission should be created at the Centre which might be designated ' National Commission for Water Supply and Sanitation '.

5.4.3 An effective information system is essential for sound planning, management, implementation, operation and maintenance. Action must be taken to develop a suitable system at the State and National level.

5.5 Human Resources and Training

5.5.1 At the professional level, different categories of engineers are by and large adequate in the country to meet manpower requirements of the Decade programme except certain specific professional categories, such as, public health engineers, financial analysts, system analysts, hydrogeologists and geophysicists. Advanced level training in these select areas for managerial personnel will be required.

5.5.2 A crucial deficiency is noticed at the sub-professional and artisan level. The specific categories where training programmes have to be instituted include drillers, plumbers, master mechanics, technicians and water and sewage plant operators.

5.5.3 Training facilities in the existing institutions should be strengthened and augmented to meet the requirements at state, regional and national level. New institutions will also be required in select regions for this purpose.

5.6 Materials and Supplies

- 5.6.1 In view of the acute shortage experienced by various States in the supply of pipes and specials of all categories, steel, cement, chlorine cylinders, chlorine and alum, it is essential that the existing plants be worked to full installed capacity. All restrictions imposed in utilizing the existing production capacities should be lifted. Additional capacities in selected areas need also be created.
- 5.6.2 An assessment of the material needs in the decade programme be undertaken and the concerned Ministries made aware in order to plan for meeting the gaps.
- 5.6.3 A coordinated programme in the production and movement of these materials between various Central Ministries, Industries and State Agencies should be arranged and ensured for timely execution of the projects. Supply of materials for water supply and sanitation projects should be ensured on priority basis.

5.7 Operation and Maintenance

- 5.7.1 Preparation of projects should be made in consultation with local bodies and public representatives, taking into consideration the needs of the community and its ability to pay for the services. Care must be taken so that facilities provided are amenable for easy and trouble-free operation. Local talent should be utilised for operation and maintenance organisations.

- 5.7.2 It is desirable to designate the operation and maintenance agency at the time of sanction of the scheme. Full details regarding levy of taxes and/or charges, mode of collection, etc. should be worked out and the agency responsible for collection decided before the construction work is taken up.
- 5.7.3 The State Public Health Engineering Departments should directly operate and maintain sophisticated water and sewage treatment plants as well as plants built to serve a group of villages or towns.
- 5.7.4 A time bound programme of training and take over should be established to enable the local communities to undertake operation and maintenance of water supply systems which have already been completed.

5.8 Involvement of Local Authorities and Communities

Project planning, programming and implementation are to be done so as to ensure the fullest involvement and participation by the local authorities/communities concerned. Relevant decisions for implementation, operation and maintenance of the facilities must be agreed between the executive department, local Government/Panchayat Departments, etc. well in advance of launching the projects.

A G E N D A

Item No.	Time	Agenda Item	Introduced by
<u>Sunday 18, November 1979</u>			
1	0900	<u>Registration</u> at Conference Hall Lobby (folders, travel arrangements, conference facilities, administrative formalities)	NEERI Staff
2	0930	<u>Inaugural Session</u> Welcome	Dr. B.B. Sundaresan, Director, NEERI
3	0935	Election of Chairman	
4	0940	Opening Address (Recommendations of past State Chief Public Health Engineers' Conference , objectives of present conference, goals & allocations for the Decade in the Five Year Plan, Prospects for the future)	Mr. P.K. Chatterjee, Adviser, CPHEEO, Min. of Works & Housing, G.O.I.
5	1000	<u>The International Drinking Water Supply and Sanitation Decade</u> (The UN Water Conference, Decade goals, Conference recommendations, Role of governments, WHO and other international and bilateral agencies)	Mr. D.V. Subrahmanyam, Regional Adviser, EH, WHO SEA Regional Office, New Delhi
6	1030	UNICEF's Role - India Programme	Dr. John D. Skoda, Senior Programme Officer, UNICEF
	1045	<u>Coffee</u>	
7	1100	Discussion on items 4, 5 & 6	

Item No.	Time	Agenda Item	Introduced by
8	1130	<u>Adoption of Agenda</u> (mode of work, discussions on questionnaire)	
9	1200	<u>State Reviews</u>	State Public Health Engineers
	1300	L u n c h	
	1400	State Reviews (contd.)	
	1530	<u>Tea</u>	
	1545	State Reviews (contd.)	
	1700	<u>Tea</u> (Hosted by IWWA-Nagpur Centre)	

Monday 19, November 1979

10	0900 - 0930	Formation of Working Groups	Chairman
	0930 - 1100	Sessions of Working Groups I	
	1100 - 1115	<u>Tea</u>	
	1115 - 1300	Sessions of Working Groups II	
	1300 - 1400	L u n c h	
	1400 - 1530	Sessions of Working Groups III	
	1530 - 1545	<u>Tea</u>	
	1545 - 1700	Sessions of Working Groups (A draft report of each Working Group should be handed over to the Chairman by 1700 hrs.)	

Item No.	Time	Agenda item	Introduced by
<u>Tuesday 20, November 1979</u>			
11	0800	<u>Departure for Burujwada- Inauguration of Slow Sand Filtration Demonstration Plant</u>	
	0900	Inauguration	
	1100	Coffee at NEERI	
12	1130 - 1300	<u>Consideration of Group Reports - Plenary Session</u> (Report of each Working Group will be introduced by each Group Chairman and discussed issue by issue)	
	1300	L u n c h	
	1400	Consideration of Group Reports - Plenary Session (contd.)	
	1530	<u>Tea</u>	
	1545	F i l m	
13	1630	<u>Summary, Recommendations of Conference-Plenary Session</u>	Chairman
14	1700	<u>Concluding Session</u>	

NATIONAL WORKSHOP ON R & D NEEDS DURING THE
WATER SUPPLY AND SANITATION DECADE : 1981-1990

21.11.1979

0930 - 1115

Session I

1. R & D Strategy in Environmental Engineering & Sciences - Dr. B.B. Sundaresan
2. Research in the Development of Appropriate Technology for Improvement of Environmental Health at Village Level in the WHO SEARO Region - Dr. W.L. Reyes
3. R & D Needs for the Decade Rural Water Supply - Shri S.T. Khare
4. R & D Support to Planning & Management of Urban Sewerage System - Shri V.D. Desai
5. Conservation of Water with reference to National Water Supply and Sanitation Decade - Shri V. Raman

1115 - 1130

T E A

1130 - 1300

Session II

1. Water Quality Management in India - Problems, Approach and Areas of Investigation - Dr. Nilay Chaudhuri
2. Use of Mathematical Models in Water Distribution System Designs - Prof. R. Pitchai
3. Optimisation of Wastewater Collection System - Prof. P. Khanna
4. Simplified Water Treatment Systems - Prof. S.V. Patwardhan

1300 - 1400

L U N C H

1400 - 1500

Session III

1. Relevance of the Current Curricula for the Graduate & Post-graduate Training in Environmental Engineering to R & D Needs and Proposed Improvement - Prof. S. Subba Rao

Contd :

2. In-service Training Needs for Water and Wastewater Engineering Personnel - Prof. A.G. Bhole
 3. Role of Consultants and their Contribution to R & D in Environmental Engineering - Prof. G.N. Radhakrishna
- 1500 - 1515 Formation of following Working Groups :
1. Water
 2. Sanitation
 3. Professional Development
 4. Information Systems
- 1515 - 1530 T E A
- 1530 - 1730 Meeting of the Working Groups
- 22.11.1979
- 0900 - 1115 Meeting of the Working Groups continues.
- 1115 - 1130 T E A
- 1130 - 1230 Meeting of the Working Groups continues
- 1230 - 1300 Formulation of draft recommendations by the Working Groups
- 1300 - 1400 L U N C H
- 1400 - 1515 Presentation of draft recommendations by the Chairmen of different Working Groups
- 1515 - 1530 T E A
- 1530 - 1730 Plenary Session - Finalisation of recommendations and discussions

LIST OF PARTICIPANTS

<u>Name and Designation</u>	<u>Address</u>	<u>Telephone No.</u>	
		<u>Off.</u>	<u>Res.</u>
1. V. Venugopalan Dy. Adviser(PHE)	CPHEEO, Ministry of Works & Housing, New Delhi-110011	388515	674099
2. D.N. Singh Deo Chief Engineer(PH)	Bhubaneshwar, Orissa	51825	51825
3. G.F. Khambati Chief Engineer (Sewerage Project)	Municipal Corpora- tion of Greater Bombay, Bombay-1	265149	463676
4. S.V. Patwardhan Prof. & Head Rural Devp. Centre	I.I.T. Delhi-110029	666979 (Extn.225)	666979 (Extn.227)
5. Virendra Kumar Supdt. Engineer	U.P. Jal Nigam, Jhansi	716	683
6. S. Daivamani Chief Engineer	MMWSS Board, GRAEMES Rd. Madras-6 (Metro Water)	88985	441515
7. F.F. Shah Chief Engineer(PH) & Jt. Secretary to Govt. of Gujarat	Sachivalaya, Gandhinagar, Gujarat State	2765 (Gandhi- nagar)	51231 (Ahmeda- bad)
8. P.L. Bodas Chief Engineer MWSSB and Ex-Officio Joint Secretary, RPD	New Administrative Building Opp. Mantralaya Bombay	245354	241838
9. R. Krishnaswamy Chief Engineer	TWAD Board, 807, Anna Salai, Madras-600002	812086	612937

	<u>Name and Designation</u>	<u>Address</u>	<u>Telephone No.</u>	
			Off.	Res.
10.	N. Jayapal Supdt. Engineer C.P.M.C. for UNICEF Stores	Commerce House, Ballard Estate, Bombay-38	263267	826729
11.	M.L. Salian Supdt. Engineer	P.H.E. South Zone, Bangalore Karnataka	29466	52693
12.	S. Subba Rao Prof. & Head of the Dept. of Sanitary Engineering	All India Institute of Hygiene & P.H., 110, Chittaranjan Avenue, Calcutta-700073	34-5271	48-1530
13.	L.M. Chaudhari Engineer-in-Chief	Haryana PWD Public Health Branch Sec. 19B Chandigarh	23596	24073
14.	Mallinath Jain Chief Engineer (Water) W.S. & S.D.U.	Municipal Corpn. of Delhi, Link House, B.S.Z. Marg, New Delhi-110002	274333	273136
15.	A.K. Poddar Chief Engineer PHE Directorate	1, KS Roy Road (6th Floor) Calcutta-700001	23-2181	46-5584
16.	S.K. Das Gupta Chief Engineer I PHE Directorate	1, KS Roy Road (6th Floor) Calcutta-700001	23-1813	47-6468
17.	I.D. Mirchandani Chief Engineer	P.W.D., U.S. Club, Simla	2720	3193
18.	A.G. Bhole Prof. Public Health Engg.	Dept. of Civil Engg., VRCE, Nagpur-440011	24626	26434
19.	M.G. Vaidya Chief Engineer (West Zone)	P.H.E. Department, Madhya Pradesh, Bhopal	61449	61740

	<u>Name and Designation</u>	<u>Address</u>	<u>Telephone No.</u>	
			Off.	Res.
20.	P. Arunachalam Chief Engineer(PH)	Meghalaya, Shillong-793001	6897	3840
21.	R. Sivaramakrishnan Sales Manager, Pipes	Chemicals & Plastic India Ltd. 827, Mount Road Madras-2	83821	76848
22.	N.K. Rengarajan Manager (Operation)	Chemicals & Plastics 827, Mount Road, Madras-2	83821	445746
23.	D.V. Pathak Rep. of Shri Digvijaya Cement Co. Ltd.	Ahmedabad	54846	53283
24.	W.L. Reyes WHO Sanitary Engineer	WHO South-East Asia Regional Office, World Health House, Ring Road, New Delhi		
25.	John D. Skoda Senior Programme Officer(Water)	UNICEF 11, Jorbagh, New Delhi		
26.	K.S. Ramakrishnan Shree Digvijaya Cement Ltd.	Shree Niwas House, 268241 Waudby Road, Port, Bombay	664943	
27.	T.R. Chatterjee Supdt. Engineer (P & D)	Govt. of Tripura, Kunjaban Agartala, Tripura-799006	1699	1698
28.	A.A. Besa WHO Sanitary Engineer	C/o UNICEF 11, Jorbagh, New Delhi		

<u>Name and Designation</u>	<u>Address</u>	<u>Telephone No.</u>	
		<u>Off.</u>	<u>Res.</u>
29. P.N. Kaul E.E. PHE Investi- gation-Cum-D&P Division J&K State	Karan Nagar, Srinagar(Kmv)	77202	
30. M.S. Sandhu Managing Director	Punjab Water Supply & Sewerage Board, S.C.O. 1,2,3 Sec. 17-B Chandigarh	26488	25459
31. S.K. Gupta Exe. Engineer	Punjab Water Supply & Sewerage Board S.C.O. 1,2,3 Sec. 17-B, Chandigarh	20531 20874	
32. H.S. Puri Chief Engineer	P.W.D. Public Health (RWS) Patiala(Punjab)	4666	3666
33. N.S. Kalsi Exe. Engineer (Monitoring)	P.W.D. Public Health Patiala(Punjab)	5285	
34. S.T. Khare Chief Engineer & Jt. Secretary	Urban Planning & Env. Engg. Dept. Government of Maharashtra, Mantralaya Bombay-1		
35. P.K. Chatterjee	Adviser, CPHEEO Min. of Works & Housing Govt. of India New Delhi		
36. D.V. Subrahmanyam	Regional Adviser EH, WHO SEA Regional Office New Delhi		

<u>Name and Designation</u>	<u>Address</u>	<u>Telephone No</u>	
		<u>Off.</u>	<u>Res</u>
<u>NEERI, Nagpur-440020</u>			
37. B.B. Sundaresan	Director	23893	25222
38. K.R. Bulusu	Dy. Director, Water Chemistry Division	26252	23513
39. V. Raman	Asst. Director Sew. Treat. Dn./ Env. Engg. Consultancy Dn.	26026	23717
40. P.V.R. Subrahmanyam	Asst. Director Industrial Wastes Division	25582	25191
41. S.R. Kshirsagar	Asst. Director T.D.D.	26071	23792
42. S.B. Dabadghao	Asst. Director TILE Division	25254	25640

OPENING ADDRESS BY MR P.K. CHATTERJEE, ADVISER(PHEE),
GOVERNMENT OF INDIA, MINISTRY OF WORKS & HOUSING,
NEW DELHI

The U.N. Water Conference held at Mar del Plata, Argentina in March 1977 set the target to provide clean water and sanitation for all the people during the Decade 1981-90. It was also recommended that the Decade should be designated as " International Drinking Water Supply and Sanitation Decade ". The 31st U.N. General Assembly endorsed the recommendations of the Water Conference. As you are aware, India is perhaps the first amongst the developing nations which have made an impressive beginning to tackle the problem soon after the Mar del Plata resolution. The rapid assessment of the situation of Drinking Water Supply and Sanitation was undertaken by the WHO with the help of Government of India so that a clear picture emerged in respect of remaining problems. The Sector Study in the field of Water Supply and Sanitation is also to be carried out State by State with a view to evaluate the country's preparedness with the accelerated pace of development to assess constraints likely to hamper the developed activities in the sector, to take actions required for preparation of National Plans well before the Decade starts and to assess the overall needs for the Sector upto 1990 to explore total funding sources both bilateral and international.

When the Sector Study report of a State is ready, it will serve as a useful tool to the Chief Engineer of the State to assess the gap between the total requirement and the Plan provision and to take up the matter with the State Planning authorities to increase the Plan outlays at least in the subsequent Five-Year Plans. This report will also serve to assess the overall material requirements for the State for implementation of the projects in the Water Supply and Sanitation Sector during the Decade.

The provision of water supply and sanitation facilities in India was started in an organized manner during the First Five-Year Plan period and a total sum of Rs 18 crores was provided during the First Five-Year Plan for the Sector activities. As compared to that, the Sector outlay for the VI Five-Year Plan, namely, 1978-83, is of the order of Rs 2711.5 crores (Rs 1388 crores for Rural and about Rs 1324 crores for Urban Sectors). The Statement in Table 3 gives the Plan outlays in the Water Supply and Sanitation Sector separately for Urban and Rural starting from the First Five-Year Plan to the Sixth Five-Year Plan.

In respect of physical coverage, water supply has been provided to about 83% of the urban population. In the Rural Water Supply Sector, out of 1.53 lakh problem villages, about 53,000 villages have been covered by March 1978 leaving about 1 lakh villages to be covered. In the field of urban sewerage and rural sanitation, very little has been done in the last 25 years and it is expected this will get greater attention during the next Decade with a view to achieve complete coverage.

As you are aware, a Workshop on " International Drinking Water Supply and Sanitation Decade " co-sponsored by the Government of India and World Health Organization was held in Delhi from 6-8 November 1978 wherein most of you would have participated. Wide ranging topics such as financial constraints, technical problems, organization, planning and management in the sector, requirement of materials and equipment and projection of funds required for the various components of the sector during the Decade 1981-90 were discussed. The statement in Table 1 indicates the projected requirement of funds for the Decade as collected during the Conference and compiled. The figures indicated therein, though tentative, gives an indication of the magnitude of funds to be ploughed in during the Decade to achieve the goals set by the U.N. General Assembly. The projected fund requirement for urban water supply and sewerage is of the order of Rs 5,475 crores while for rural water supply it will be of the order of Rs 7,057 crores. If you look at the plan outlays for the Sector during the VI Plan 1978-83, it will be seen that what has been provided for urban water supply and sewerage and rural water supply are sizeable in quantity and will have to be considerably stepped up during the VII & VIII Five-Year Plans. The statement showing the proposed outlays for the VI Five-Year Plan 1978-83 may be seen in Table 2. It will also be seen that practically there is no provision for rural sanitation during the VI Plan period. A closer examination of the proposals of the State Governments has also indicated that the major provisions for urban sector are mainly for urban water supply - new and improvement schemes, while very little has been provided for sewerage schemes during the VI Plan. It goes without saying that lot of efforts will have to be taken in the VII and subsequent Plans for better coverage of population with urban sewerage and rural sanitation.

Here, we should consider whether we will be able to generate adequate funds during the International Decade from governmental sources and beneficiaries. I am sure it will be readily agreed by all of you that assistance from bilateral and international agencies will have to flow in a greater measure during the Decade if India has to achieve the said goals by 1990.

Let us also consider material resources as well as manpower needs to meet the challenge before us. While the country is producing essential materials and equipment such as pipes, steel, cement, rigs, power pumps, handpumps, etc., and also exporting such items, it is a known fact that we have come across shortage of all the important materials cited above. It will be necessary to assess the overall requirement for materials and equipment required for our programme in the country and also take into account the export requirements, policy will have to be evolved for streamlining the production of such items on a long term basis. Further, in respect of technical manpower required for the programme during the Decade we will have to make an assessment of the total manpower to be trained in the field for meeting the challenge.

I am sure this Conference will come out with concrete suggestions regarding the future requirement of funds, materials and manpower required for the Water Supply Sector during the Decade. Such a picture will not only help the national Government in planning future activities but will also help international agencies, such as UNDP, WHO, UNICEF, World Bank, etc. to come forward with technical and financial assistance to assist our Government in fulfilling the goals set for 1990.

TABLE- 1

INTERNATIONAL DRINKING WATER & SANITATION DECADE, 1981-90

Projected requirement of funds
(Amount in Rs millions)

S.No.	States	Urban Water Supply	Urban Sewerage	Rural Water Supply	Rural Sanitation
1	Andhra Pradesh	5,800	1,110	4,000	-
2	Assam	350	807	2,165	4,357
3	Bihar	1,000	3,000	7,640	2,000
4	Gujarat	495	666	590	323
5	Haryana	571	565	2,887	2,000
6	Himachal Pradesh	211	220	1,628	380
7	J. & K.	344	1,363	-	-
8	Karnataka	900	400	1,710	1,000
9	Kerala	600	650	3,100	1,000
10	Madhya Pradesh	3,000	1,600	10,150	1,750
11	Maharashtra	1,085	2,341	3,900	1,000
12	Manipur	60	50	276	-
13	Meghalaya	150	-	370	-
14	Mizoram	-	-	-	-
15	Nagaland				
16	Orissa	1,000	600	4,000	400
17	Punjab	720	1,000	4,050	2,500
18	Rajasthan	1,000	2,000	6,000	2,000
19	Tamilnadu	1,000*	4,000	1,500	1,000
20	Tripura				
21	Uttar Pradesh	1,150	1,950	16,000	6,300
22	West Bengal	1,000	2,000	600	7,000
23	Arunachal Pradesh				
24	Sikkim				
	Total	20,436	24,322	70,566	33,010
		+ 10,000			

* Another 10,000 million for Madras City

TABLE - 2

WATER SUPPLY AND SANITATION SECTOR

TENTATIVE OUTLAY FOR 1978-83

(Rs in Crores)

S.No.	States	Total	R M N P component
1	Andhra Pradesh	192.00	122.00
2	Assam	35.00	22.72
3	Bihar	95.00	65.00
4	Gujarat	85.00	45.00
5	Haryana	94.00	65.00
6	Himachal Pradesh	36.35	31.45
7	Jammu & Kashmir	55.00	32.00
8	Karnatak	98.00	22.00
9	Kerala	75.00	19.00
10	Madhya Pradesh	120.00	64.00
11	Maharashtra	448.50	100.00
12	Manipur	18.60	9.00
13	Meghalaya	33.00	19.75
14	Nagaland	12.00	10.00
15	Orissa	45.00	24.00
16	Punjab	83.00	29.05
17	Rajasthan	150.00	110.00
18	Sikkim	6.19	5.02
19	Tamil Nadu	198.63	30.00
20	Tripura	12.20	6.00
21	Uttar Pradesh	273.00	178.50
22	West Bengal	80.00	28.00
	Total All States	2,246.47	1,037.49
	<u>UNION TERRITORIES</u>		
1	Andaman & Nicobar Islands	2.43	1.50
2	Arunachal Pradesh	7.00	6.80
3	Chandigarh	4.00	-
4	Dadra & Nagar Haveli	0.40	0.40
5	Delhi	81.00	7.00
6	Goa, Daman & Diu	22.00	1.70
7	Lakshadweep	0.21	0.11
8	Mizoram	9.00	6.00
9	Pondicherry	4.00	0.70
	Total Union Territories	130.04	24.21
	Total (States & U.Ts.)	2,376.51	1,061.70
	<u>CENTRAL PLAN</u>		
1	Acc. Rural W.S. Programme	326.00	326.00
2	Other Programmes	9.00	-
	Sub Total (Central Plan)	335.00	326.00
	GRAND TOTAL	2,711.51	1,387.70

TABLE - 3
WATER SUPPLY AND SANITATION SECTOR
PLAN OUTLAYS (1951-1983)

		Urban	Rural
I Plan	--	127	60
II Plan	--	570	280
III Plan	--	808	670
Annual Plan, 1966-67		195	121.5
Annual Plan, 1967-68		180	90.8
Annual Plan, 1968-69		205	100.3
IV Plan	--	2 800	1 645
V Plan	--	4 310	5 470
VI Plan	--	13 238	13 877

SELECTED STATEMENTS FROM PARTICIPANTS

Dr. B.B. Sundaresan, Director, NEERI, Nagpur welcomed the delegates to NEERI and outlined the programme for the conference and the R & D Workshop immediately following it. He stressed also the importance of research workers and operational personnel getting together to discuss research and development issues for the decade.

Mr. S.T. Khare was unanimously elected as the Chairman.

The Agenda of the Conference was adopted (Annexure I).

Mr. P.K. Chatterjee, Adviser, CPHEEO, Min. of Works & Housing, Govt. of India delivering the opening address, recapitulated the recommendations of the U.N. Water Conference held in March, 1977 as well as the U.N. General Assembly's endorsement of the recommendations of the water conference. He briefly explained the steps taken by the Government of India to increase the input under Five Year Plans for water supply and sanitation sector. The sector studies initiated with the help of WHO/WORLD BANK and the action taken under the national plan in the preparatory phase of the International Water Supply & Sanitation decade (IWS&SD). He also drew attention to the financial projections made by the Chief Engineers for implementation of the decade programme. For the country as a whole this would be the order of Rs 15,800 crores.

He also stressed upon the need to plan the material and manpower resources and to undertake the necessary research & development work needed for the decade.

Mr. D.V. Subrahmanyam, Regional Adviser, EH, WHO SEA Regional Office, New Delhi outlined the recommendations and the target adopted by the U.N. Water Conference and the General Assembly for the decade under the Mar del Plata action plan. Within this framework, each member country has to set its own target. He dwelt upon the magnitude of the problem. Out of 2,000 million population in the developing countries (excluding China) nearly half are in South-East Asia; two-third of that resides in India. It is generally known that people who lack water supply and sanitation facilities; also people who are left behind in development in other sectors such as education, health,

/are

housing, etc., the main objective is to provide basic minimum quantum of drinking water for all the people by 1990. This objective is universally accepted. He stressed the need for change in strategy in planning process and as well as involving the community in planning and implementation stages.

The Organisation of the U.N. System (in particular WHO) are ready to cooperate with member countries in this process, during the preparatory phase, namely, 1978 to 1980. It is very essential to make an assessment of

- 1) number of people without reasonable access to water supply and sanitation facilities ; and
- 2) money, personnel and equipment required.

It is important to reorient the plans and programmes to meet the needs in a realistic manner keeping the resources available in view. It is also important to generate projects that are socially relevant, technically appropriate and financially viable to attract external investment.

The WHO is preparing a donor catalogue which will supply the information about the policies, priorities, criteria, procedure, etc. of their assistance. Similarly, a catalogue of fundable projects from developing countries is also needed. Apart from information directly related to programmes and projects, exchange with regard to appropriate technology institution and procedures was also needed particularly between developing countries themselves (TCDC). He referred to the cooperative action amongst the UN agencies, namely, WHO, UNDP, World Bank, UNICEF, UN, FAO and ILO to assist the member countries in achieving the goal of the International Decade set out at Mar del Plata.

As a preparation, an inter-regional consultation between countries in South-East Asia Region is being organised by WHO at New Delhi from 26-28 November, 1979.

The United Nations' General Assembly will hold a one day Special Meeting on Water Supply and Sanitation at New York to officially launch the Decade in late 1980.

Dr. J.D. Skoda, Senior Programme Officer, UNICEF stated that role of UNICEF is to promote children's health by measures such as provision of safe drinking water, sanitation facilities, etc. Their assistance is

mainly in rural areas and their assistance relates to i) survey and programming, ii) technical support, iii) inservice training, iv) supply of equipment, v) local manufacture of supplies, e.g., handpumps, vi) health education programme- personal hygiene, and vii) support to aided projects. He said that about 25 per cent of UNICEF overall budget goes for rural water supply and sanitation. In India, it is 33 per cent. He finally read out the recommendations brought out by the UNICEF Water Supply Survey Mission.

The State Chief Engineers then presented state reviews briefly. 22 State representatives briefly reviewed the status of water supply and sanitation facilities covered under rural and urban areas in the respective States, projected the remaining programme to be tackled along with their estimates of requirement of funds and narrated the constraints in achieving the goal set for decade. The constraints listed are given below :

- i) Inadequacy of funds needed by the Central and State Governments under Five Year Plans.
- ii) Shortage of material such as pipes, cement, steel, etc.
- iii) Shortage of technical manpower.
- iv) Lack of training facilities.
- v) Lack of local participation particularly in operation and maintenance.
- vi) Rigid criteria in respect of design of water supply and sanitation facilities.
- vii) Magnitude of rural sanitation programme both physical and financial.
- viii) Inadequacy of proper institutional framework and management in R&D with a view to evolve low cost appropriate technology.
- ix) Defects in planning process both at grass-root levels as well as national levels.
- x) Poor monitoring and evaluation as well as lack of information system.

Following are some of the major observations made by the delegates :

- i) Ministers, planners and administrators both at the Central and State levels should be involved in this process of planning for water supply and sanitation decade programme.
- ii) Water supply and sanitation should be included in the core sector of the National Plan so as to achieve the goals of the Decade.
- iii) Each State may prepare a Master Plan saying how to cover the entire area with water supply and sanitation facilities indicating priorities. No rigid criteria such as per capita cost and per capita water supply should be insisted upon. It may vary from region to region.
- iv) During water supply and sanitation decade the stress should be made on rural and urban sanitation programme.
- v) Level of sanitation services may be defined as a National norm depending on the size of the population for deciding whether conventional sewerage system or construction of latrines, septic tanks, aqua-privi be provided.
- vi) Facilities for open market borrowing and drawal of loans from cooperative banks for urban and rural water supply and sanitation projects should be permitted.
- vii) Policy should be evolved to continue the LIC assistance to the urban, local bodies throughout the International Decade. Further, LIC should advance loans for even smaller towns where the cost estimate is less than Rs 15 lakhs. The quantum of assistance from LIC should also be increased.
- viii) HUDCO is also giving financial assistance for water supply purposes along with housing projects with the repayment period of 12 years. The period of repayment may be increased to 20 years on par with the LIC terms.
- ix) Criteria for repayment of capital and operation and maintenance to be clarified in respect of World Bank and Bilateral Agency assisted projects.

- x) Early steps should be taken by the States to set up autonomous boards for dealing with the water supply and sanitation facilities,
- xi) The Central Government should make a detailed study of the requirement of materials vis-a-vis production capacity and take advance action to increase the production of essential materials and equipment required for the programme during the decade.
- xii) For want of railway wagons it is observed that materials such as pipes, steel, cement, etc, to be transported by road transport which, in turn, increases the cost of the project particularly in rural areas of North-Eastern States. Priority for wagons also to be arranged.
- xiii) DGS&D Rate Contract facilities should be made available to the Water Supply & Sewerage Boards as applicable to the Departments; as otherwise it will inflict additional financial liabilities to the Boards.
- xiv) The PHE training programme should be continued by the Central Government as in the past,
- xv) A training institute should be set up in each State to provide periodic training courses to the technical personnel,
- xvi) Training institutes should be developed by the Central Government for providing training facilities to those who will be manning the State level training institutes.
- xvii) NEERI should be entrusted with the work of evaluation and arrive at per capita supply and other design norms.
- xviii) Cooperation with the State Electricity Boards should also be initiated so as to have power in time for installation of water supply facilities particularly, in rural areas.
- xix) Targets for the decade in terms of financial requirements can be worked out in broad outlines but actual allocation yearwise will depend on overall plan provision to be agreed between State Governments and the Planning Commission.