NETHERLANDS ASSISTED PROJECTS

NALGONDA DIST.

INTEGRATED APPROACH HRD DOCUM

NAP-AP III

NALGONDA

COMPONENT:

INSTITUTION DEVELOPEMENT.

PART 1: HRD.

VOLUME 1.

NETHERLANDS ASSISTED PROJECTS - ANDHRA PRADESH
AP III - NALGONDA - PHASE 1

INSTITUTION DEVELOPMENT COMPONENT
ACTITVITY 2: HUMAN RESOURCES DEVELOPMENT

TOTAL COST: Rs. 894.88 LAKHS
PHASE 1: Rs. 536.93 LAKHS

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1. RURAL WATER SUPPLY AND SANITATION SECTOR SCENARIO:

1.1 Background:

Andhra Pradesh is the fifth largest state in India (70 million people and surface area 2.77 lakh sq km). 3/4 of the state is rural, with 50 million people living in 27,379 villages and 35000 hamlets, in cluster habitations widely scattered all over the 22 districts. At the fringes of these villages are the harijanwadas (about 10 million people) and the isolated tribal thandas (about 5 million tribal population).

1.2 Sector Interventions:

RWS/S sector is three decades old. It started with borewell programmes for drought hit districts and has steadily grown over the years. Investments are estimated at Rs.543 crores.

Out of total 27379 villages, 22860 problem villages have been identified. By the end of VII plan (April 1990), 17316 problem villages were covered through 1.60 lakh bore wells and 8067 PWS schemes and 5 CPWS schemes. The balance 5544 problem villages are planned to be covered during the VIII plan.

With falling ground water tables, bore well schemes are now yielding inadequate supplies. This adds annually to the list of problem villages under the category of scarcity. Further fluoride/salinity effected areas have to generally depend on surface water sources. These problems have placed heavy resources constraint on the Government. It is hoped that external assistance can be mobilised in a bigger way to meet the challenges. The PRED is also gearing itself up to meet the growing demands and challenges in the sector.

1.3 External Support:

External interventions in rws/s are limited to Netherlands, UNICEF, and now the World Bank. Netherlands inputs over two phases (1979-1991) have been Rs. 51.50 crores for covering 489 villages in 8 districts with 16 CPWS and 83 PWS schemes. A lift irrigation scheme is also taken up, at a cost of RS.8.5 crores. Apart from this, NAP has committed 7.80 crores for the support activities. The World Bank credit of Rs.20 crores is to cover rehabilitation of 328 cyclone affected schemes and construction of 30 CPWS (covering 200 villages) in cyclone-prone coastal districts. The borewell programme has been supported partly by UNICEF.

1.4 Technology:

The technology adopted for RWS ranges from simple handpump fitted borewell to complex comprehensive scheme covering a population of over 1.25 lakh (111 villages), with treatment units, large pumping mains, overhead service reservoirs, intermediate booster stations, and internal distribution through public standposts. The treatment units range from disinfection with bleaching powder to rapid sand filtration followed by disinfection (primary and booster). Under the Technology Mission, desalination and defluoridation plants are also being introduced.

1.5 Sanitation Interventions:

Coming to sanitation inputs, the policy has been to spread thin the meager resources. The programme (Vimukthi) was launched in 1983. Investments have been Rs. 14 crores and facilities provided 1.07 lakh individual and 1500 community latrines.

Achievements are thus generally negligible. However, a fresh start is now being made under the auspices of UNICEF, involving voluntary agencies, and adopting intense coverage approach.

2. SECTOR AGENCY:

The task of providing safe drinking water and sanitation facilities is vested with the Panchayati Raj Engineering Department. PRED is also the rural engineering service, with responsibilities for: rural infrastructure development such as construction and maintenance of school buildings, health centres, panchayati raj buildings, minor irrigation works, panchayat roads etc.

2.1 Organisational Set Up:

The department has at the moment 4 Chief Engineers, 20 Superintending Engineers, 95 Executive Engineers, 2500 graduate/diploma holder field engineers and a large number of technical and administrative support staff.

At the state level the Chief Engineers are responsible for specific sectors of activities. At the district, division and sub-division level, the monitoring and implementing staff are responsible for all activities and report to all CEs. At the field level (mandals), one junior engineer is to be responsible for gram panchayat and mandal works and another for Zilla Praja Parishad works and rural water supply/sanitation.

Administration is with the seniormost Chief Engineer, who has the rank of Engineer-in-Chief.

As the engineering wing of the panchayati raj institution, PRED is also accountable to peoples bodies and district administration.

2.2 Budget:

The annual budget of the department (for all works) is around Rs.300 crores, of which allocation for rws/s is around Rs.50 to 55 crores. The sources of funds for rws/s are: centrally sponsored ARWS, state sponsored MNP (bilateral funds are included under this head), special programmes such as DPAP etc. 15% of all funds are earmarked as SC component and 6% for ST component.

The allocation under the VII plan had been Rs.224 crores for RWS and Rs.17 crores for sanitation. Under the VIII plan, the proposed outlay for RWS is Rs.450 crores, and for sanitation Rs.25 crores. This includes anticipated inputs from bilateral assistance, and World Bank. Outlay include HRD (1 crore), MIS (2 crores), O/M (25 crores), water quality monitoring (3.45 crores), community participation (1 crore).

3. CRITICAL SECTOR ISSUES:

3.1 Operation and Maintenance:

The most critical issue now being faced by PRED is the operation and maintenance of the rws assets created, and to be created.

The present practice is to hand over the scheme to the Gram Panchayat after its completion. The GP is expected to maintain the scheme with its own resources and man power. All except major panchayats are exempt from electricity charges on PWS schemes. PRED is responsible only for breakdown maintenance, and for periodic corrective/ preventive monitoring. Often the GPs have neither the financial resources nor the technical know-how to manage a scheme, especially when it involves treatment units, pumps and large distribution net work. Majority of the schemes operate below acceptable standards.

At mandal level, a junior engineer is to be responsible for all water supply schemes (average no. of schemes: 15 to 20). But, due to inadequacy of staff, the junior engineer responsible for the GP works has to look after also rws. Infrastructure, mobility and resources at his command are inadequate. And O/M of rws comes very low in the priority of a field engineer.

3.2 Inadequacy of Ground Water Sources:

Excess fluoride, salinity/brackishness and scarcity constitute the main source problems. Further, most of the bores especially in the interior districts of Rayalseema and Telegana fail during summer. Unregulated tapping of ground water for irrigation compounds the problem. PRED is now of the opinion that only the tapping of surface sources (rivers/reservoirs/irrigation canals) can provide lasting solution to the water supply problems in the state.

3.3 Institutional Memory:

In a generalist department, it is inevitable that specialisation suffers. Consequently, skills and capabilities for planning and executing, and more important, for maintaining water supply schemes do not easily get institutionalised. Cumulation of experiences, and learning from one's own and from others' mistakes become difficult.

Such lack of specialisation has backward linkages on the quality of work and down stream repercussions on articulation of need for specialisation, in-service learning, improved institutional set up for design, construction, monitoring, O/M etc.

In sum, institutions and procedures have not been reshaped to suit the changed sector reality - from simple borewells to more complex piped water supply systems, which require specialist skills in planning and execution, and a totally different approach to O/M.

3.4 Institutionalisation of Integrated Approach:

The integrated approach to water supply and sanitation advocated by the Netherlands Government and by the IDWSSD has now been adopted by the Government of India as the strategy to be adopted for all rural

drinking water supply and sanitation programmes. Hence it is critically important that the PRED is equipped with know-how and institutional capabilities for planning, executing, maintaining and monitoring integrated water sanitation projects.

3.5 Responses Initiated:

Among the steps being initiated the most note worthy are: an in-house training centre, external training of departmental engineers, introduction of improved management techniques/information and monitoring systems, setting up of exclusive project cells both in the field and in headquarters, a study taken up on viable and sustainable institutional options for O/M of rural water supply schemes.

4. NAP INTERVENTIONS IN AP

The Royal Netherlands Government has been supporting the Government of Andhra Pradesh with bilateral assistance for meeting the targets of the International Drinking Water Supply and Sanitation Decade.

4.1 Objectives of NAP Intervention:

a. To support the GOAP in its efforts to provide protected drinking water to identified problem villages within the frame work and strategies of the IDWSSD.

b. To further enhance the effectiveness of the project through the introduction of an integrated approach involving multiple inputs from various specialist agencies.

c. To support institution development efforts of PRED and other collaborating agencies to equip them to adopt an integrated approach to water and sanitation, at the sector level.

4.2 History of NAP Intervention:

Under Phase I (1979-1990), 201 villages were taken up in 6 districts at an original estimate of Rs.1441.00 lakhs (later revised to Rs.1825.51 lakhs). The schemes are nearing completion and administrative closing report is to be ready in March 1991. During this phase 4 Comprehensive Protected Water Supply Schemes (CPWS) and 50 individual schemes (PWS) have been taken up.

Phase II was taken up from 1988 and is to be completed in March 1993. 288 villages in 4 districts are to be covered through 12 CPWS and 33 PWS schemes. 10000 acres of land are to be irrigated through a Lift Irrigation scheme. The sanctioned estimate for these second generation projects is Rs.2889.40 lakhs (now being revised to Rs.4238.00 lakhs).
Under Phase II, in keeping with the integrated approach recommended by the IDWSSD, and subsequently adopted by GOI, support activities such as community education and participation, health awareness, sanitation, income generation, external water quality monitoring, consultancy support for various activities etc. are being taken up at a sanctioned estimate of Rs.780 lakhs. The estimate for these components is likely to be revised to Rs.900 lakhs.

4.3 Institutional Arrangements for Overall Coordination:

a. State Level: Apex Steering Committee headed by the Chief Secretary

b. Nodal Agency: PRED headed by Engineer-in-Chief

c. Dist. Level: Exclusive NAP-PRED Circles (2) and Divisions (5). The Superintending Engineer is the chairperson of the District Project Committee involving District level project agencies and health/education departments.

d. Proj. Level: The Executive Engineer is the Chairperson of the Project Coordination Committee involving the PRED and NGO.

e. Vill. Level: The Village Action Committee being set up by the NGO and involving the community, GP, PRED ground level operators, school teachers and PHC staff.

4.4 Third Generation Projects:

4 third generation projects are under various stages of formulation for covering more than 1200 villages/hamlets in four (Nalgonda, Prakasam, Ananthapur and Krishna) districts. The anticipated project cost will be Rs.275 crores, including all cost escalations during the project execution period of 8 to 10 years.

Project Components include:

1. Technical Component: construction of water supply scheme

2. Community Based Support Activities:

   - community participation and health education
   - income generating activities
   - mother and child welfare
   - sanitation

3. Institutional Development:

   - human resources development
   - management information systems
   - strengthening of planning/monitoring/design cell
   - support in developing sustainable and community based operation and maintenance systems

These third generation projects are much more ambitious in nature, both in terms of coverage and costs. Unlike the two previous projects, the department has given considerable attention to the formulation of the project, drawing lessons and experiences from the past. Voluntary organisations and other governmental agencies are being involved right from the outset to ensure that the project has inbuilt provisions for the active involvement of the community and to ensure that the project will indeed go to enhance the quality of life and health standards of the community.

Though preliminary proposals for all 4 projects have been presented to RNE through GOI, after detailed discussions with the RNE, it was decided by the Netherlands Government that the Nalgonda project would be taken up first for more detailed project formulation. Given the cost of the project, it was also agreed that each proposal would be reworked as two-phased.

4.5 Significance of NAP Interventions:

In terms of financial inputs and physical coverage, NAP contributions are limited. NAP inputs will probably be no more than 15 to 20% of annual sector investments, given the present RNG resource allocation for the sector.

Hence, the contribution of NAP to rws/s sector in AP is to be measured not so much in terms of the capital investments, but more for the new perspectives, capabilities... that NAP has contributed to generate, within the sector. The approach, the areas of intervention, and the interactions themselves are as important as the quantifiable achievements.

5. AP III - NALGONDA PROJECT

5.1 Outreach:

Nalgonda district consists of 1141 revenue villages and 1812 hamlets in 59 mandals. The District has a population of 29.40 lakhs, and is spread over an area of 14240 sq.kms.

5.2 Coverage and Phasing:

The project will cover a 1981 population of 375380, a 1992 population of 482655, and an ultimate 2022 population of 877370.

It is planned to take up the project in two phases, keeping in mind both technical and financial parameters. 82 villages and 99 Hamlets are to be covered in Phase I. Of these, 76 villages are fluoride problem villages, 6 are scarcity problem villages. 144 villages and 238 hamlets will be taken up in Phase II. Of these, 94 are fluoride affected and the balance 50 are scarcity problem villages.

Details regarding population coverage are provided below:

			Population		
Zone	Vil	Hmlts	1981	1992	2022
Phase1	82	99	174940	225677	408000
Phase2	144	238	200440	256978	469370
	226	337	375380	482655	877370

5.3 Project Components:

The project components are broadly categorised as:

- Technical Component (water supply construction)

- Community Based Support Activities
- Institution Development Support

COMPONENT	NODAL AGENCY	BUDGET	TIME SCH
Water Supply	PRED	9742.000	6 years
CEP/HEP	NGO (ASM)	96.569	5 years
Sanitation	PRED/ASM	950.000	7 years
Income Gen.(Dairy)	NARMUL	347.000	4.5 years
IG (Sericulture)	SERIFED	151.760	5 years
Mother and Child Dvpnt	ICDS	198.400	4 years
MIS Development	Consultancy	125.000	4 years
Human Resources Devpt.	PRED(RDTC)	894.880	5 years
8 components	6 agencies	12505.609	6 years

5.4 Institution Development Component:

This component (human resources development, and support for an MIS development for improved monitoring of integrated approach and interagency coordination) aims at enhancing the capacity of the PRED to plan, implement and monitor an integrated and participatory approach to water and sanitation, first within the NAP environment, and eventually at the total sector level. The estimated cost of the two components is Rs. 1019.880 lakhs. The cost sharing pattern proposed is: RNG - 75%, GOAP - 25%.

5.5 Estimates for Phase 1:

The cost of Phase 1 is projected at Rs.5364.410 lakhs (43% of total project cost). Abstract is provided below:

- Water supply : 3863.000 lakhs (40%)
- Comm. based actvts : 870.730 lakhs (50%)
- Insttnl. Devpt. : 630.680 lakhs (62%)

5364.410 lakhs (43%)

5.6 Budget for Institution Development under Phase 1:

COMPONENT	TOTAL COST	COST OF STAGE I	RNG SHARE	%	GOAP	%
HRD	894.88	536.93	402.70	75%	134.23	25%
MIS	125.00	93.75	70.31	75%	23.44	25%
TOTAL	1019.88	630.68	473.01	75%	157.67	25%

5.7 Rationale for Inclusion of Institutional Development under Nalgonda:

Though institution development is aimed at the sector and particularly PRED as a whole, this component is included under AP III - NALGONDA for administrative reasons. However the planning, implementation and monitoring of this component will receive separate attention as discussed in later parts of this document.

Further, AP III - Nalgonda will provide a good field laboratory for testing the validity, efficiency and impact of the several activities to be initiated.

6. INSTITUTION DEVELOPMENT:

6.1 The Concept:

The International Drinking Water Supply and Sanitation Decade (1981-90) had advocated an integrated approach as the strategy for the planning, execution and operation/ maintenance of rural water supply and sanitation programmes.

The integrated approach requires that the nodal activity of providing water and sanitation infrastructure be coordinated and supported by a spectrum of complementary activities, health and hygiene education, awareness regarding water collection/storage/use, effective operation and maintenance, O/M cost sharing, water quality surveillance, sanitation activities around water supply widening out to cover personal, domestic and environmental hygiene, income generation and other women and children oriented development programmes, organisation and education of the people - all designed to ensure the responsible participation of the community in the programme.

The sector agency responsible for water and sanitation was to take the initiative to develop the strategies and operational plans for such integrated approach, identifying and involving various specialist agencies (governmental and non-governmental) and co-ordinating. monitoring this inter-agency intervention.

The Delhi Declaration of 1990 (Some for All Rather Than All for Some) has once again underlined the validity of this approach. Further, the Governments of India and Andhra Pradesh have taken policy decisions to adopt this integrated approach for the total rural water/sanitation sector.

6.2 Netherlands Support:

The Royal Netherlands Government, one of our major external support agencies, has been advocating and funding the integrated approach for the last 3 to 4 years. RNG has now made it mandatory for further projects to be eligible for support that they have an integrated character and an explicit orientation towards community participation in project planning, execution and subsequent maintenance. Though the NAP Office will continue to support PRED in these areas, the draft policy framework for the 1991-2000 decade stipulates that within a mutually agreed to time schedule, the department take over the primary responsibility planning, executing, co-ordinating and monitoring the integrated approach.

However, the RNG has also indicated that PRED may seek financial and technical support for enhancing its capability for functioning as the pivotal agency for the integrated approach to water and sanitation. 10 areas when support could be availed of have been indicated in the discussion paper on "Institution Development Support", and the "Draft Policy Framework" indicates technical and programme support funds that may be tapped towards institution development. On an average 25% of the cost of all future projects posed to RNG is to be earmarked for complementary activities, which may include apart from community based development programmes, also institution development programmes for the department and other partner agencies.

6.3 The Challenges Ahead:

Apart from the limited objective of taking full advantage of the support offered by RNG, both the present sector realities and the challenges that lie ahead should be the real motivator for launching into an institution development project:

a) a growing shift from simple handpump technology to more complicated comprehensive piped water supply schemes, necessitated due to falling ground water tables, problems of fluoride and salinity in ground water and also equally by the demand from the public for higher levels of service.

b) increased consciousness on the quality and reliability of the services being provided

c) increased sector budget allocation and consequently the growing number and diversity projects and assets to be maintained.

d) the departmental responsibility for proper operation, up-keep replacement and upgradation of services provided.

e) the need to address sanitation issues much more realistically, ensure that the health benefits of improved water supply really reach the people.

f) the need for efficient, reliable and update information and data management for planning, monitoring, execution and operation/maintenance of schemes.

g) the absolute need to involve the community in cost/responsibility sharing for execution and O/M.

6.4 Areas for Institution Development Support:

PRED have identified some areas where the sector level interventions are required:

a) community based and sustainable operation and maintenance of rws

b) institutionalisation of integrated approach by building up expertise on water and sanitation with NGOs

c) improved monitoring/coordination with its connected components such as improved management information system (MIS), standing institutional arrangements for review/programme reorientation

d) developing the knowledge, skills and attitudes both technical and human of the personnel of the department so that their capability to address themselves to the demands and implications of integrated water supply and sanitation projects can be enhanced. This calls for a systematic approach to human resources development (HRD).

Enhanced performance is critically dependent on the building up of capabilities and institutions in the above five areas.

6.5 Approach to Institution Development:

During discussions with the First Secretary and Sectorspecialist - Mr. Peter M. Flik - at Hyderabad, it was agreed that the total concept of Institution Development would be taken up for serious study during a workshop involving PRED/NAP Office/RNE/Review and Support Mission.

During this workshop, it is hoped that the concepts, strategies and operational plans for institution development can be spelt out and later documented, with clearly defined task allocations and time schedules and monitoring mechanisms.

It was also agreed that PRED may make project proposals for further activities not covered under the HRD and MIS proposals, independent of Water/Sanitation project proposals.

As such, this document outlines the PRED proposal for only one of the components under institution development - HUMAN RESOURCES DEVELOPMENT. Support for MIS Development, which is also taken up under AP III - NALGONDA is discussed in detail in a separate document.

7. HRD AND THE NATIONAL WATER/SANITATION SECTOR

7.1 Introduction:

The GOI Planning Commission Working Group on Rural Water Supply and Sanitation has recognised the need for extensive training and education in agencies implementing water supply and sanitation programmes. It has recommended that at least one percent of the sector allocation under the VIII plan be ear-marked for HRD activities.

Based on its recommendation, the Department of Rural Development had

set up a committee to prepare an approach paper for HRD planning and implementation at national, regional and state level. The HRD is to cover the totality of the RWS/S sector to enhance the understanding, knowledge and skills of all those directly/indirectly involved in the sector. The committee has finalised its report and has presented it to GOI in December 1990.

7.2 Committee Recommendations:

Due to lack of planned approach to HRD, serious gaps have been observed in in-service training and continuing education, training and appraisal of performance of trainers, exposure of personnel to concepts and methods of modern management and training approaches, etc. As such the committee has recommended a systematic and planned approach to HRD, laying emphasis on developing and strengthening HRD institutions and their net-working at all levels.

The action plans proposed focus on the following:

a) Identification of the gaps in performance in the department from time to time

b) upgrading the existing skills of the each member of the rural water supply and sanitation sector

c) bringing in new knowledge and translating the same in to appropriate curricula of training

d) development of appropriate curricula for the state level and regional/sub-regional level training centres

e) development of R&D systems

The strategy proposes that the HRD plans be linked with field realities, so that trainers and trainees can test the adequacy and validity of the training concepts and content in real rural situations. For this each HRD centre is to adopt villages as field laboratories.

7.3 Proposed Institutional Frame-work:

A three tier National Human Resource Development Programme has been proposed under the umbrella of the DRD (Water Mission):

- Regional level Centres of Excellence
- Specialised Institutions
- State Level Training Centres

The report has stressed the need for each state establishing its own training institute, in addition to centrally sponsored institutions and programmes.

These institutions will cater to the training needs of:

- trainers

- decision-makers, nodal officers, professionals such as public health engineers, environmental scientists, hydrogeologists chemists, micro-biologists, geo- physicists, social scientists

key personnel of monitoring and co-ordination cells, technicians, managers, operators, administrative staff

- training of NGOs, GPs, village level functionaries of line departments involved in rural development, health, women and child welfare programmes

7.4 Training Methodology:

The Committee has recommended strong rural and field orientation in all training programmes, drawing heavily on practicals, demonstrations, field level action, group discussions and case studies. A participatory and holistic approach is stressed, demanding multi-disciplinary training inputs.

7.5 State Responsibilities:

The HRD plan for each state is to be prepared keeping in mind the following:

- trainers training
- trainees training
- orientation workshops
- specialised training
- sponsorship for long term training courses.

The report has indicated several courses and subjects that could be taken up under HRD. More than thirty subjects are indicated, covering a broad spectrum of subjects ranging from technology to participation of rural women.

(Annexure 1)

The report has also indicated that the State HRD also take up some R&D activities related to water/sanitation covering the areas of technology, management, action research on factors influencing performance of sector managers/functionaries, participatory research on rural community perceptions and strategies for community involvement etc.

(Annexure 2)

7.6 Training of Trainers:

Heavy emphasis is placed on the proper identification and training of trainers, and appraisal of their performance. Guidelines for selection of trainers, and trainers training have been indicated in the report.

Trainers are to be skilled not only in the areas of specialisation, but also in participatory and learner oriented training methods, and well exposed to rural realities.

External resource persons are also to be oriented to the sector realities and issues, before they are empanelled as guest faculty.

(Annexure 3)

7.7 HRD Budget:

The committee has recommended a budget allocation of Rs.20 crores under the VIII plan period.

8. HRD PROJECT PROPOSAL - RWS/S: AP

8.1 History:

In September 1988, PRED had presented to Review and Support Mission AP 20 a project proposal for strengthening its in-house training centre - the Nagarjuna Rural Engineering Training Centre (NRETC). Reference may be made to RSM 20 page 33 and annexure 19 and 20. It was agreed that the proposal would be discussed with NAP Office and better formulated.

During RSM 21, the guidelines for the formulation of an in-house training centre were further discussed. It was decided that NRETC should function as a nodal agency for all in-house training on rural water and sanitation, covering all levels of PRED staff, both engineers and ground level operators. It was also agreed that the training inputs will cover technical, managerial and community participation aspects.

In the meantime, the NRETC, now renamed Research, Development and Training Centre (RDTC) had further developed both its infrastructure and training activities, with a full time director and a skeleton support staff, with training faculty being drawn from various educational and governmental institutions, as well as field engineers from various departments. During RSM 22 (November 1989), it was decided that RNE would assist PRED in seeking an external consultancy for formulating a comprehensive human resource development plan (RSM 22, page 55).

Terms of Reference for the consultancy were jointly formulated by PRED/NAP Office/RSM. The consultancy costing Rs.3.644 lakhs for evolving a perspective plan and budget for human resources development within the PRED, was commissioned by RNE in the first half of 1990.

The consultant (Mr.P.Subramaniyam, CENTRE FOR DEVELOPMENT, RESEARCH AND TRAINING, Madras) and his team were involved in the training needs assessment study in 6 districts of the State, closely interacting with the department personnel at all levels. The consultancy has come up with a long term perspective plan and a five-year short term operational plan with budget for infrastructure development, training of trainers, curriculum development, recurring costs for training programmes and overheads (5 years).

The RDTC is to be upgraded and made the nodal agency for all in-house training programmes. The training load is to shared with three regional training centres, to be set up under the umbrella of the RDTC. Training programmes will be planned both centrally and at district and even lower levels, covering all rungs of the department from senior engineers to ground level operators/care-takers of water supply systems.

These in-house training activities will be dovetailed with specialised training programmes within the State, India and abroad. Activities are funded by the governments of Andhra Pradesh and India and by the UNICEF. For long term perspective plans, funds can be anticipated from UNICEF, State government, and Government of India.

The consultancy came up with a budget proposal of Rs. 1263.888 lakhs. After discussions with the NAP Office, this has been pruned to Rs.894.88 lakhs. Netherland's share is projected at 75%. GOAP will meet the balance 25%. It is anticipated that 60% of the funds would be required during stage I of Nalgonda.

8.2 The CFDRT Consultancy:

The CFDRT set up a Team consisting of 6 experts in order to undertake this study. PRED/NAP Office also set up a committee headed by the Chief Engineer, to whom the CFDRT had to report on a regular basis.

The study commenced in August 1990 and field studies from 1st September. The draft findings and recommendations of the study were presented to the PRED/NAP Office committee in a workshop at Hyderabad on 11 & 12 December 1990. Based on the discussions during the workshop, CFDRT finalised its report and presented it in January 1991.

The districts selected for the Training Needs Assessment study were: Rangareddy, Medak, Nalgonda, Vizianagaram, Kurnool, Prakasam and Guntur. One high and one low performing sub-division in each district was selected by PRED for the study. The functionaries studied by the CFDRT Team were: CE, SE, EE, DYEE, AEE/AE, Geologist, Chemist/ Water Analyst, Work-Inspector, Electrician, Draughtsman, Tracer, Pump Mechanic, Fitter, Pump Operator (Head works & OHSR), Filter Bed Operator, Linesman, Helper, Gangman, and Caretaker.

During the field work, interviews, observations, and group discussions with various functionaries, were the methods used for data collection. Also village observation study was conducted to understand the field realities of the villagers and how the villagers perceive the safe and protected drinking water projects.

In the study, the training needs, Attitudes, Awareness and Skills (AAS) gaps, problems and blockages to work performance were analysed in the light of the existing training programs for them at the RDTC, and suitable training proposals were developed for each functionary based upon the gaps identified.

8.3 Recommendations of the Consultancy:

a) The perspective plan/budget is for a period of 5 years. The proposal is to cover only water and sanitation related aspects, but for the entire sector.

b) The nodal agency is to be the RDTC, to be supported by three RTCs (Regional Training Centres). Each of these centres is to be provided with full infrastructure, hostel facilities, workshops etc., and are to be housed in permanent buildings.

c) The overall responsibility training is to be vested with a chief engineer (training) who is to be supported with a core faculty specialised in civil engineering, management and behavioural sciences. These in turn are to have support faculty. At the RTC level the responsibility will lie with a director of the rank of an SE and supported with core faculty.

d) Issues related to policies, management, budget etc., are to be guided by a Training Advisory Committee, to be chaired by the

Secretary PR&RD. Chief Engineer (Training) is to be the member-secretary.

e) While the RDTC is to be responsible for all training upto the level of junior engineers, RTCs will take up training for lower level personnel, including operators,

fitters, electricians etc. RTCs are to be mobile enough to conduct training programmes at field level as well.

f) The RDTC will be responsible for coordinating all training programmes for PR(RWS) including seminars, training programmes abroad, exposure programmes etc.

g) For the capital funds and recurring expenditures for 5 years, PRED is to seek assistance from RNG. It is also proposed to extend the training facilities also to CE (Tribal Welfare), CE (Public Health) and CE (Metro Water), Ground Water Board etc. so that additional funds can be pooled. E-n-C to approach GOI, NEERI etc. for conducting some of their courses at the RDTC, so that the burden of recurring expenditures can be shared/reduced. Further, this will give RDTC a national level status. Discussions have already been initiated with GOI and there are reasonable chances of RDTC being granted some of the national level training programmes.

9. NEED FOR IN-HOUSE TRAINING CENTRE

9.1 As discussed earlier, the task of providing safe drinking water and sanitation facilities to over 50 million rural population is vested with the PRED. The challenges ahead are formidable: operation and maintenance of assets already created, responding to demands for higher levels of service, the growing complexity of the technical solutions for hard core problem villages, the as yet unaddressed sanitation sector.

The demands these raise on the technical, managerial and administrative capacities of the PRED are also formidable. With growing sector allocations, work load on the PRED, both in terms of physical targets and technology management, is also increasing - in fact it is the second largest technical department in the state now.

PRED is urgent need of building up a large and professional man power base for especially for managing the water and sanitation sector, where increased specialisation is required, if crucial sector issues are to be addressed meaningfully.

9.2 The man power position and future projections are summarised below:

Category	Actual	Prjctns
Graduate Engineers	1194	1665
Diploma Holders	1470	1525
Accounts/Finance	87	163
Geologists/Geophysists	80	130
Draughtsmen	511	1272
Plant Operators		7755
Mechanics/Electrcns	762	7755
Fitters/Plumbers	12	7755
Drillers	104	252
Water Analysts	12	100

Apart from this, the Gram Panchayats are also directly recruiting and employing semi-skilled and unskilled people to work as operators of piped water supply schemes which are managed by the Gps.

9.3 Training Requirements:

The entire department needs in-service training, covering all levels of personnel, since all of them are involved in the planning, construction and management of water and sanitation projects.

The sheer number of people to be trained, both under induction/post promotion orientation and in-service refresher programmes demand an exclusive in-house training facility, both at the state and at regional levels.

Context-specific training, inter-hierarchy team training, participatory planning and evaluation, the need to relate technology with rural sociology and community based project management, etc., reinforce the need for in-house training institutions. Isolated and random training inputs are found to contribute very little to organisational changes or improved performance, because the promotive training/ learning environment is lacking, and because external training cannot often contribute to team commitment to performance.

This of course does not imply that facilities available with existing training centres will not be availed. In fact, one of the tasks of the in-house HRD team will be to inventorise such training programmes within the state and country as well as abroad and to plan deputation of personnel for such programmes as complementary to in-house training.

Some of the areas in which basic orientation and training in-house are essential are the following:

- Project Planning and Monitoring
- Personnel Management
- Operation and Maintenance
- Community Participation and Integrated Approach
- Personality Development
- Scheme Specific Training of Implementation/Maintenance Staff
- Introduction of Improved/Computer-based MIS

Such basic training programmes will be supplemented with external training where departmental personnel will have the opportunity to interact with other departments.

10. TRAINING PROGRAMMES PROPOSED

The Consultancy has recommended various training modules for all categories of personnel.

10.1 Chief Engineers (5):

Managerial inputs and opportunity to exchange notes with their counterparts are felt appropriate. It is proposed to depute the Chief Engineers for state and national level seminars/workshops. Also it is felt appropriate to send all the CEs in turn for suitable programs organised outside the country. It is suggested that at least once in 3 years every CE in FFED should be sponsored for a suitable programme abroad.

10.2 Superintending Engineers (20):

SEs need to be strengthened in project management and monitoring. It is suggested that SEs may interact with SEs of other departments of Andhra Pradesh and the SEs of other States in seminars/workshops/conferences, etc., organised at state/national level, as relevant to FFED. Project management workshop is suggested, 8 SEs may be sponsored every six months for national seminars/workshops, in rotation. Also it would be worthwhile to sponsor the SEs, in rotation, to suitable overseas programs through sponsorship by international agencies.

10.3 Executive Engineers (100):

The training gaps identified for EEs are:

- Management Information System
- Quality Control
- Materials Management
- Human Relations/Interpersonal Communication
- Project Planning and Control Techniques

Taking into account the gaps identified, and the training needs expressed, the following training courses are suggested for the EEs:

- Induction Training
- Refresher/Retraining Course
- Interaction workshop with other technical staff such as DYEE and AEE/AE
- Managerial Skill Development Workshop
- Computer Exposure Programme/MIS
- Personality Development
- Project Management
- Community Participation and Integrated Approach

It is also suggested that EEs may be sent to major water supply projects of other states to observe and learn the technologies involved in their operation. They may also be sent to National & International Seminars.

10.4 Deputy Executive Engineers (400):

In the case of DYEEs the gaps noticed were:

- Quality Control
- Materials Management
- Personal Management - Supervisory Skills
- Motivation - Managerial Skills
- Water Quality Monitoring
- Community Participation Techniques

In order to cover these areas, the following courses are suggested:

- Induction Training
- Refresher/Retraining/Post Promotion Orientation Course
- Interaction Workshop with other cadre engineers
- Managerial Skills
- Computer Exposure Programme
- Special Workshops
- Personality Development
- Community Participation and Integrated Approach

DYEEs will also be exposed to National and International level programmes.

10.5 Assistant Executive Engineers/Assistant Engineers (2000):

The gaps noticed were in the field of:

- Well Logging and Well Construction Techniques
- Quality Control
- Installation of Pumping Machinery
- Materials/Construction Management
- Interpersonal Communication
- Inadequate Exposure to Water Quality Monitoring
- Skills in Community Participation Techniques

The courses suggested to bridge these gaps are:

- Induction Training
- Refresher/Retraining Course
- Interaction Workshop with DYEEs and EEs
- Computer/MIS Training
- Intensive Computer Training
- Personality Development
- Supervision/Control/Management Techniques
- State of Art in Water/Sanitation
- Community Participation/Integrated Approach
- Communication Skills

Exposure at National and International level may be given to AEEs.

10.6 Geologists (50):

During the course of the study of Geologists, it was noticed that there was lack of adequate water quality monitoring skills and an absence of system of maintaining records of field observations.

- Refresher/Retraining
- Interaction

- Exposure to State of Art Technology
- National level Seminars

10.7 Chemist/Water Analysts (50):

For Chemists/Water Analysts, Refresher/Retraining course and exposure to National level programmes are suggested. During the course, there need to be emphasis on water quality monitoring aspects and on the need for maintaining records regarding the quality of water which they have analysed.

10.8 Work Inspectors (1200):

In the case of Work Inspector, the gaps noticed are:

- Quality Control
- Reporting System

Induction Training and Refresher/Retraining course are suggested.

10.9 Draughtsmen/Tracers (1200):

The Draughtsmen and Tracers have more or less identical functions will be given Induction and Refresher/Retraining course in a combined group. The gap to be taken care of is maintenance and updating of records.

10.10 Electricians/Pump Mechanics (4000):

The electricians are found to be lacking in the application of safety measures and preventive maintenance aspects. The two courses suggested are Induction and Refresher/ Retraining.

10.11 Filter Bed Operators/Fitters/Linesmen/Gangmen/Helpers (5000):

These categories of field staff need motivation and team training. They need basic knowledge in maintenance of protected water supply and maintenance of hygiene /sanitation around water supply installations.

10.12 Scheme-specific Training:

Scheme specific training may be given to a groups comprising AEE/AE, Work Inspector, Electrician, Pump Mechanic, Pump Operator, Filter Bed Operator, Linesmen, Fitters and Helpers with AEE/AE as the Team Leader.

10.13 Special Workshops:

Apart from the above courses, provision is made for the conduct of workshops thrice a year, at RDTC, on topics suggested by the Staff. The participants will be EEs, DYEEs & AEE/AEs.

10.14 Computer/MIS Training:

Special Courses will be organised in conjunction with the development and management of computer-base MIS systems. The training will consist of orientation/appreciation courses for senior engineers, programming/ system management training for AEEs and operation skills for clerical staff.

10.15 The details of the training programmes proposed by the consultant are annexed to this report.

(Annexure 4)

11. ORGANISATION AND MANAGEMENT

11.1 Training Network:

The consultancy has proposed one full-fledged state level training centre (RDTC) and three regional level centres for the coastal Rayalseema and Telangana regions.

The state level centre will take the responsibility for overall HR planning and co-ordination and will actually plan and conduct trainin programmes for the engineering personnel.

The regional training centres (RTCs) will be responsible for th organisation and conduct of training programmes for operating staff such as work inspectors, electricians, fitters etc. In addition, the RTCs will organise field based and scheme specific training programme especially for O/M staff.

11.2 HRD Team:

The in-house HRD Team will be headed by a Director of the rank of a CE He will directly manage the state level RDTC, with a core staff of specialists. Each RTC will be managed by a trainer of the rank of SE who will be reporting to the Director od RDTC.

The personnel organisation at RDTC is proposed as follows:

11.3 Staffing of RDTC:

There will be three divisions, each headed by a trainer of the rank SE:

Technical
Management
Behavioural Science

They will be supported by a civil engineer, a geologist, a managemer specialist, a research scholar, and an educational technologist, a of EE status.

To assist the above core faculty, provision is made for the followi personnel: mechanical engineer (1), electrical and electron engineer (1), computer specialist (1) and chemist (1), all of D status.

The other personnel proposed are: finance manager (1), librarian and secretarial staff consisting of office manager (1), stenos (2 typists (2), documentation assistant (1) and accounts assistant (

Other staff will consist of drivers (5), peons/attenders (5), sweepers (2) and watchmen (2).

Organogram is annexed.

(Annexure 5)

11.4 Staffing of Each RTC:

Under the Regional Director, there will be two broad divisions headed by a technical expert and a behavioural scientist, of EE status. They will be provided with adequate support staff consisting of a civil engineer (1) and a mechanical and electrical engineer (1) of the status of DYEE.

The remaining staff will be office manager (1), senior assistant (1) and a library Assistant (1). The other categories are steno/typist (1), drivers (3), attenders (2), watchman (1) and Sweeper (1).

Organogram is annexed.

(Annexure 6)

11.5 The Training Advisory Committee (TAC):

The need for a monitoring and evaluation system is emphasised so that a regular feedback from the trainees is obtained. Communication from the field situation to the training situation and communication back to the field situation without loss of time is the essence of this system. This will constitute a continuous Training Needs Assessment input into the training system which will thus get updated periodically.

A Training Advisory Committee will be constituted for monitoring the activities of the training centres. All the proposals including annual training master plan, training curricula and financial sanctions will be placed before this committee periodically.

The constitution of TAC would be as follows:

Secretary (PR & RD)
Ex-Officio Chairman

TAC - MEMBERS

1. Commissioner (PR & RD)
2. Engineer - in - Chief (PR)
3. Chief Engineer (PR)
4. Chief Engineer (Designs)
5. Chief Engineer (World Bank Project)
6. Chief Engineer (PH)
7. Chief Engineer (Metro Water)
8. Chief Engineer (Tribal Welfare)
9. Director, A.P. State Irrigation Development Corporation
10. Director, Ground Water Board
11. Director, RDTC (Member Secretary)
12. Management Consultant
13. Technical Consultant
14. Behavioural Science Consultant/ Training Expert
15. Representative - Finance Dept
16. Representative - NAP
17. Representative - UNICEF
18. Any other member coopted by TAC

11.6 Tasks of the HRD Team:

The HRD team, consisting of the Director and core team of RDTC and the Directors of the three RTCs, will have the following responsibilities:

a) Curriculum planning, modules development, identification of external resource organisations and persons
b) Monitoring and evaluation of training
c) Administration and Management of the training centres
d) Maintenance of HRD data base on all personnel of the department, and planning in-service training for them in consultation with the concerned heads
e) Identifying potential organisation for training of trainers
f) Plan and organise in-service training for trainers themselves
g) Establish linkages with other training centres
h) Inventorise/organise deputation of personnel for external trngs.
i) Inventorise training programmes abroad and organise deputation
j) Plan deputations for post-graduate courses/specialisations

In sum, the HRD team will be responsible for not only for the routine conduct of in-house training, but also for planning the man-power development of the organisation.

11.7 Responsibilities of the Director - RDTC:

a) He shall be the head of the HRD team and responsible for the performance of the team and for the efficient administration/management of the training centres

b) In capacity as member secretary to the TAC, he shall be responsible for orienting the TAC on long term policy issues, for securing approval of annual training plans and budgets, for convening periodic review/co-ordination meetings of the TAC

c) He shall be directly responsible for monitoring the impact of the training imparted, interacting closely with the other CEs and field personnel.

d) He shall make preliminary identification of personnel to be deputed for specialisations and trainings abroad, in consultation with the concerned chief engineers.

e) He will ensure efficiency of training by assessing the performance of the trainers, by planning further training input, by recruiting/inducting new personnel and planning well in advance replacements so that the continuity is not least and institutional memory/expertise is guaranteed.

12. SELECTION/TRAINING OF TRAINERS:

12.1 Selection of Personnel:

Though the detailed modalities for the selection of HRD Core Team and faculty are yet to be finalised, in principle agreement has been reached that engineering personnel would be drawn from the FRED. As far as social scientists and other specialists are concerned, suitable candidates will be recruited either on deputation from universities/other departments or drawn through open selection.

field experience in large-scale gw. water/pow. projects ?

Guest faculty will be drawn from universities/departments/ specialist organisations on ad hoc basis or on consultancy terms. Services of experts/professionals will be availed on ad hoc/consultancy basis.

The recruitment and posting of HRD faculty shall be the responsibility of the TAC.

12.2 Training and Orientation of Core Faculty:

Training of core faculty of RDTC and placing them shall precede the recruitment and training of the remaining faculty and administrative staff.

It is proposed that the training/orientation of the core-faculty be entrusted to a competent training management institute in India or abroad. This institute shall also assist the core faculty in setting up the RDTC and in initiating the preparatory work for training, such as curriculum development, preparation of modules, identification of guest faculty, operationalisation of planning procedures for organisation/conduct of training.

The core-faculty shall also plan with the consultants exposure programmes to other training centres, and shall if possible work as under study to the consultants, for a specified time period and shall also be placed as under study in training centres in India/abroad.

The consultancy support can be phased out gradually, as the core-faculty gathers experience and expertise. Such an approach to setting up of an in-house training centre has been adopted also by other departments, for example, the Metro Water Training Centre, Madras of the Madras Metropolitan Water Supply and Sewerage Board, set up with ODA assistance.

It is desirable that the core-faculty be exposed to the new methods of participatory training and develops adequate skills to organise such participatory training methodology in the in-house training programmes.

12.3 Training of Trainers:

It shall be the responsibility to plan and organise training of trainers for the rest of the faculty as and when they are recruited, drawing from their own training experiences. Such TOT may be organised in India and specialist courses offered abroad.

12.4 On-going Training:

TOT has to be a continuous process for two reasons: due to mobility of personnel recruited from departments/ universities, there will be the need to identify and equip a standing stock of in-house trainers. Apart from this, all trainers will require periodic refresher courses, orientation to new approaches, development of specialist skills etc. The responsibility for planning such on-going training shall lie with the Director - RDTC.

13. TRAINING INFRASTRUCTURE:

13.1 Buildings:

At present the RDTC is operating from a rented premise. Facilities available are inadequate for the proper planning and conduct of the HRD programmes as discussed above.

It is hence proposed that the RDTC be provided with its own premises and infrastructure. The proposed RDTC building would be located at Hyderabad in a spacious area.

The training centre will have 2 lecture halls, a library cum documentation hall, a computer room, a laboratory, office facilities, faculty rooms, rest rooms, and necessary toilet/bath/facilities.

Hostel facilities are proposed for trainees/guest faculty: 10 single, 10 double and 10 three-bedded rooms with required toilet facilities, lounge, canteen, office rooms, to accommodate 60 persons at a time. Staff quarters for the faculty and staff are also proposed.

As far as RTCs are concerned, as far as possible existing facilities will be availed, with provision for additional facilities as required. However, since the locations are yet to be decided, it is not possible at this stage to indicate what the additional facilities have to be. It is proposed that one full RTC infrastructure will be provided under the proj, the remaining two being the responsibility of FRED.

The RTC will have a lecture hall, a library, office facilities for the director, 2 faculty rooms, a room for the office staff, a computer room, a canteen and a lounge/reception, with toilet/bath facilities.

A workshop, a hostel with three dormitories (each to accommodate 10 persons), a few faculty rooms, etc are proposed. Residential quarters for full time faculty/ administrative staff are also proposed.

13.2 Furnishings/Equipments:

Budget provisions have been made for furnishing and equipping the buildings with table, chairs and other necessary furnishings. The hostels are also to be furnished. Teaching aids are also budgeted for: TV/VCR, video camera, film and slide projectors, over-head projectors, tape recorders, cameras, xerox machines, computer facilities. Budget provisions include procurement of equipments and tools for the laboratory and workshop. Vehicles for the RDTC and for one RTC have also been budgeted for: 3 cars, 3 jeeps and one mini-bus.

14. HRD BUDGET

14.1 Abstract Budget:

a) Non Recurring Expenditure:

1.	RDTC	235.79	
2.	One RTC	98.37	
3.	Training of Trainers	13.16	
4.	Curriculum Development	14.14	
5.	Revolving Fund for TA/DA	6.00	367.46

b) Recurring Expenditure:

1.	RDTC (5 years)	167.70	
2.	One RTC (5 years)	57.65	
3.	Orgstn of Trg (5 yrs)		
	- Training	155.95	
	- Training abroad	100.00	
4.	Trainers Trg	39.47	
5.	Monitoring	5.00	
6.	TAC Expenses	1.65	527.42
			894.88

14.2 Explanatory Remarks:

The non-recurring expenditures on RDTC and RTC include: cost of buildings, equipments, training equipments, furnishing, computers, initial investment on library,

purchase of vehicles and construction/furnishing of staff quarters. Provision is also made for landscaping etc.

The non-recurring expenditures on training of trainers is earmarked for the training and orientation of trainers, including consultancy services from existing training management institutes.

The non-recurring expenditures on curriculum development is provided for the preparation of training modules by the core HRD team. availing of consultancy support.

The budget for a revolving fund for TA/DA is provided so that the training centres can pay the trainees their travel and other daily allowances, immediately after the training course is completed, the centre, subsequently obtaining reimbursement from the department.

The recurring expenditures on RDTC/RTC are budgeted for 5 years. These include: salary for personnel, training overheads, stationery, maintenance of buildings and equipments etc. These cover both the training centres as also the hostels.

Recurring Expenditures for organisation of training programmes have been arrived at by projecting the total number of courses that are to be organised each year. In a year a total of 60 courses for various categories are proposed at the RDTC, with an average of 24 training days per month, except in February and March. Unit cost per course covers the cost of training materials, handouts, fees for guest faculty, food and refreshments, etc. In addition, cost of sponsorship of personnel for training in other centres is also provided for.

The budget provision for trainings abroad is made for sponsorship for specific training courses, not otherwise provided for in the RNG/UK sponsorships.

The budget provision for trainers training include short term consultancy services from management institutions abroad, cost of placement of HRD personnel as under study in training centres abroad, as well as refresher training courses/exposure/interaction programmes in India.

Detailed estimates are annexed.

(Annexure 7)

14.3 Cost Sharing:

The cost sharing pattern proposed is: RNG - 75% and GOAP - 25%. Further the GOAP will undertake the responsibility for meeting all recurring expenditures beyond the five year project period.

15. IMPLEMENTATION SCHEDULE

15.1 Activities under Phase 1:

It is proposed to implement the HRD project in two phases. During phase one the following activities are proposed:

a) Setting up of the TAC and finalisation of the modalities for selection and appointment of Trainers, for planning and organising training programmes

b) Identification/recruitment and training of core HRD team

c) Organisation of consultancy support from a training management institute for TOT and for initiating the various steps in setting up the in-house training centre

d) Setting up of the RDTC - construction of buildings, procurement of equipments

e) preparation of training master plan and detailed operational plan for three years

f) selection/training of trainers/ administrative staff

g) preparation of training curriculum and modules with support from consultants

h) organisation and conduct of training programmes in a phased manner, depending on the strategy finalised under the HRD master plan

i) setting up of one of the RTCs, along with identification and training of trainers, and initiation of some training programmes

15.2 Time Schedule for Phase 1:

Phase 1 is planned for a three year period, beginning from June 1992 and ending with March 1995. Detailed activity time scheduling within this period will be spelt out later.

15.3 Activities under Phase 2:

Under phase 2, the RDTC training programmes will be stepped up to maximum potential. Concurrently, the RTC set up during phase 1 will be supported to perform at increased levels of efficiency. In a phased manner, the remaining two RTCs will also be established.

15.4 Time Schedule for Phase 2:

Phase 2 is tentatively planned for the period April 1995 to June 1998.

16. BUDGET REQUIREMENTS FOR PHASE 1

a) Non Recurring Expenditure:

1.	RDTC	235.79	
2.	One RTC	98.37	
3.	Training of Trainers	13.16	
4.	Curriculum Development	14.14	
5.	Revolving Fund for TA/DA	6.00	367.46

b) Recurring Expenditure:

1.	RDTC (2 years)	72.00	
2.	One RTC (1 year)	15.00	
3.	Orgstn of Trg (2 yrs)		
	- Training	40.00	
	- Training abroad	25.00	
4.	Trainers Trg	15.00	
5.	Monitoring	2.00	
6.	TAC Expenses	0.47	169.47
			536.93

17. A TASK FORCE FOR INSTITUTION DEVELOPMENT

17.1 Why a Task Force:

As discussed above, HRD is seen by PRED as an integral part of institution development. In the face of challenges ahead, PRED needs to assess its existing capabilities in terms of personnel, skills, attitudes, knowledge, resources, organisation, procedures, institutions and identify the gaps and evolve plans for bridging the gaps, so that it is geared to the tasks ahead.

Personnel involved in the day to day running of the department, do have valuable insights into the areas where PRED needs to enhance its capabilities. But they may have little time to articulate these perceptions, and much less to evolve strategies and plans to actually take on this institution development.

17.2 Tasks:

Hence a special task force will be set up for institution development, to identify areas where the department requires to change/modify/further develop procedures, systems and institutions and where engineering personnel and ground level operators require in service and specialised training. Once key problem areas are identified, the team should also come up with specific and viable strategies for responding to the problems.

Once the strategies are approved by the department, the team shall also evolve operational plans and project proposals for the same, discuss the plans with the donor agency (s) and do the needful for their positive appraisal and funding. Once the projects are funded, the team shall also guide their efficient implementation and post implementation follow up.

The task force shall also work to generate ground level support for institution development, by organising workshops, training programmes, etc.

In short the task force is to act as initiators of new ideas and work to convert them into reality. In fact, given the challenges involved, institution development is to be considered as a project in itself, even if for practical reasons, funds are mobilised as part of the various water supply projects.

17.3 Some Specific Areas for Institution Development:

The following areas have been tentatively identified as indicative of the tasks of the team:

- human resources development project posed to the RNE and areas where the resources available from GOI can be pooled

- development of an effective and efficient MIS, with the EE in the field as the nodal officer and proposing appropriate institutions for MIS management, upgradation, training of personnel, trouble shooting

- organising an effective monitoring cell for the integrated approach and giving special emphasis to o/m of commissioned schemes and water quality surveillance

- developing strategies for community participation through NGOs and other peoples organisations

- developing an effective project planning/ investigation/designs cell with capability for planning integrated projects

- strategies for community based o/m, including the on-going village level water supply management study, preparation of o/m manual for Darsi etc.

17.4 It has been proposed that this task force participate in a planning workshop, in which Objective Oriented Project Planning methods will be adopted for conceptualising and opertionalising the strategies for Institution development. An expert from Management Development Foundation (MDF) is to be invited as a resource person for the workshop.

17.5 During this workshop, also strategies for setting up the in-house HRD project will receive special attention. These insights and action plans will be integrated into the HRD project. Till the HRD core team is identified and trained, this task force will also take the responsibility for carrying further forward this HRD Project proposal.

ANNEXURES

1. HRD Subjectsproposed by the National HRD Report
2. R&D Subjects proposed by the National HRD Report
3. Recommendations regarding Training of Trainers and Training Methodology
4. Details of Training Courses proposed by the Consultant
5. Organogram for State Level RDTC
6. Organogram for the Regional Level RTC
7. Detailed Estimates for HRD Project

NETHERLANDS ASSISTED PROJECTS

NALGONDA DIST.

HRD DOCUMENT ANNEXURES

NAP-AP III

NALGONDA

COMPONENT:

INSTITUTION DEVELOPEMENT.

PART 1: HRD.

VOLUME. 2.

ANNEXURE 1

Anx 1

9. COURSE SUBJECTS

The broad areas of training for various types of courses could consist of the following subjects :

1. Project planning, monitoring and evaluation; expected output and their measurement including operational considerations at village level.

2. Scientific source finding - Remote sensing, Geophysical/ Geohydrological surveys.

3. Source development : drilling, evaluation of aquifer parameters; pumping test, rig monitoring and hydrofracturing.

4. Management of surface and groundwater sources and designing of transmission and distribution.

5. Water quality : Minitoring and surveillance including management of water quality testing laboratory (stationary, mobile and portable kits).

6. Guineaworm eradication

7. Iron - Removal of excess iron

8. Fluoride - Defluoridation

9. Slow sand filteration

10. Disinfection/Chlorination

11. Salinity/Brakishness - Desalination including mobile desalination unit

12. Water Management

    12.1 Water harvesting structures
    12.2 Roof catchment
    12.3 Improvement of traditional sources
    12.4 Watershed management
    12.5 Use of ferro-cement technology for storage tanks and small check dams.

13. Rural Sociology - social mobilisation, people's participation and involvement of women including motivation, preparedness, culture of ownership, empowerment, formation of water and sanitation committees.

14. Software - communication, media, information, IEC, KAP, etc.

15. Handpump technology, VLOM pumps, shallow wellpumps including Tara' pump, involvement of women in O&M, supply of spares and isntallation equipment.

16. SPV and its application in RWS

17. Materials management : standards and quality control

18. Management of O&M at village level: operators, mechanics, caretakers and related feed-back mechanism and reporting.

19. Base line survey techniques and preparation of DPR.

20. Legislation and procedures for land acquisition for RWSS assets.

21. Water requirement modeling, water balance studies and pricing of water.

22. System of development of linkages with other development agencies, handling of conflicts, departmental rivelaries, problem idnetification, and problem solving, people's access to water sources specially rural poor and weak.

23. Cost and cost-conciousness - cost estimates, cost benefit/social cost, cost-effectiveness, cost-consciousness, cost recovery, costing of supply of safe water per litre/head including per cattle.

24. Financial management : tendering, identifiction of entrepreneur, placement of order, inspection at various levels, contract with entrepreneurs for pre and post delivery.

25. Methods of vulnerability assessment and techniques for the development of management strategies for natural calamity and climatological hazard reduction measures aimed at protecting lives and the natural resources base.

26. Management Information System: objectives, concepts and specific techniques for data processing, analysis, presentation of results, use of computers, practical application of system analysis, concepts of simulation, optimisation and decision analysis techniques.

27. Environmental Engineering :

    i) Health aspect of drinking water,
    ii) Behaviour for personal hygiene,
    iii) Low cost sanitation - domestic and community,
    iv) Waste water disposal including drainage system, and
    v) Management of solid wastes

28. Involvement of women in RWSS

8.1 COMPULSORY AND COMMON SUBJECTS FOR ALL COURSES

The following subjects should be covered in all courses irrespective of their specialisation :

1. Water Mission, India - an integrated and multi-disciplinary approach.
2. Rural sociology and social mobilisation
3. Role of S&T
4. MIS and use of computer
5. Water quality assurance for health for all
6. Cost and cost-conciousness
7. Preparation of case studies
8. Communication software

8.2 For participatory learning, group discussion, case studies and exchange of experiences would an important system of training. Each trainee would be informed in advance to come well prepared to present a case study in the area of their working, covering subjects of their choice.

ANNEXURE 2

Anx 2

INTRODUCTION

Science and Technology (S&T) has been an integral part of the Mission programme with focus on sub-missions and related activities in villages. In order to bridge certain gaps and shortcomings of the programme (op.cit), a number of R&D projects were sponsored by the Mission to various scientific research organisations of the country (See : annexure MOU between DRD and CSIR). While most of these projects have been completed and utilised directly or through commercialisation, a few are in progress.

1. The experience during the Decade showed that with high investments and increasing costs in RWS&S, it would be extremely essential to develop and adopt low cost, low energy, user friendly and affordable techniques, tools and technologies. The WSS system should be cost-effective in terms of its inputs, O&M, and waste management on one hand and in meeting new challanges of varying degrees in hydrogeological conditions and socio-cultural behaviour of rural community on the other hand. This demanded new solutions of emerging problems and of fronier areas.

2. **R&D proposals**

In tune to above needs, a few R&D projects are suggested below which could be sponsored by the Mission to appropirate research organisations :

1. Development of local infrastructure to fabricate handpumps and well screens;
2. Small and low-cost waste water stabilisation pond design development;
3. Development of household defluoridation and iron removal units;
4. Solid waste disposal system for scattered, congested, and thickly populated and drought prone villages;
5. Crisis management with reference to drought;
6. Water harvesting engineering for higher altitude, hills, arid zone and drought prone areas;
7. Pollution abatement and control due to human activities; and
8. Use of low cost materials and alternate materials in RWS.

3. R&D proposals made by the Planning Commission's Working Group (April,1989)

The Working Group also discussed the subject and suggested new areas of R&D in RWSS (refer annexure 1 and 2 of this part).

3.1 The Working Group recommended that an allocation of Rs.50 crores be made in VIII FYP for these R&D projects (refer para 8,p.16 of the Working Group report).

4. Action - Research in behavioural science

Experience of working with those empowered and engaged in RWSS system demanded study relating to behavioural aspects of such personnel in relation to their responses to mission activities, social interaction and sanitation programme. The behaviour could be influensed by personal, social, educational, familial, psychological, organisational, bureaucratic and professional, traits of such functionaries.

It would, therefore, be interesting if the Mission sponsors action-research project on 'factors influencing behaviour of a water manager/engineer to activities relating to modern systems of RWSS' and identify those elements which may smoothen their active support and participation in the programme.*

4.1 Behavioural study of rural community

A similar study would be desirable in case of behaviour of rural community and community women towards sectors system. This is generally influenced by socio-cultural heritage, income and education levels, habits, attitudes, reasources and awareness.*

4.2 These studies will help in strengthening HRD programme of the sector.

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* Details about behaviour sciences in relation to RWSS sector and their linkages with HRD will be discussed in another study later.

ANNEXURE 3

Training of Trainers. Anx 3.

1. INTRUDUCTION

TRAINERS have a vital role to play in HRD programme. This role becomes more challenging in training personnels managing Rural Water Supply and Sanitation (RWSS) in different geo-climatic zones and in remote villages.

For the purpose of HRD in RWSS under the Department of Rural Development (DRD), Government of India, the following categories of trainers could be considered for orientation and exposure to realities in rural backdrop:

1) The government institutions, including professional training institutes;

2) State level institutions;

3) Polytechnics providing diploma courses;

4) Industrial Training Institutes (ITI) and Community Polytechnics providing technical skills, including vocational training;

5) Institutions identified by Ministry of Urban Development for imparting graduate/post-graduate education in public health and environment engineering;

6) Universities, IITs and Engineering Colleges imparting education in civil and mechanical engineering (the entry level for public health engineering sector); and

7) Specialised institutions (Geophysics, Management System, Administration, Computer Software, etc.).

Other set of training centres are wholly oriented to rural needs like NIRD, Hyderabad, Rural Management Institute, Anand and Gandhi Gram University, Madurai, etc.

2. The Trainers

The trainers fall in the following categories :

1) faculty members of the professional, technical and specialised institutions;

2) faculty members/trainers of state institutions; and

3) faculty members providing degree/post-graduate courses in engineering.

2.1 Generally, the above faculty members are qualified engineers and professionals, chemists, geo-physicts, biologists, management experts, with teaching experience. All these institutions are, however, located in urban areas and developed towns.

2.2 These institutions are linked with some government departments in the centre or state or act as autonomous organisation funded by the government. Thus they are bound by a set of courses which are generally urban oriented.

2.3 None of these trainers/teachers have received any formal training in teaching institutions. In India, a post-graduate or Ph.D. is considered to be a self-styled teacher.

2.4 Except in a few cases, none of the above institutions are expected to cover rural needs and problems and for that matter the backward and remote areas, the underserved or unserved. There is a general apathy of working for/in rural areas/villages.

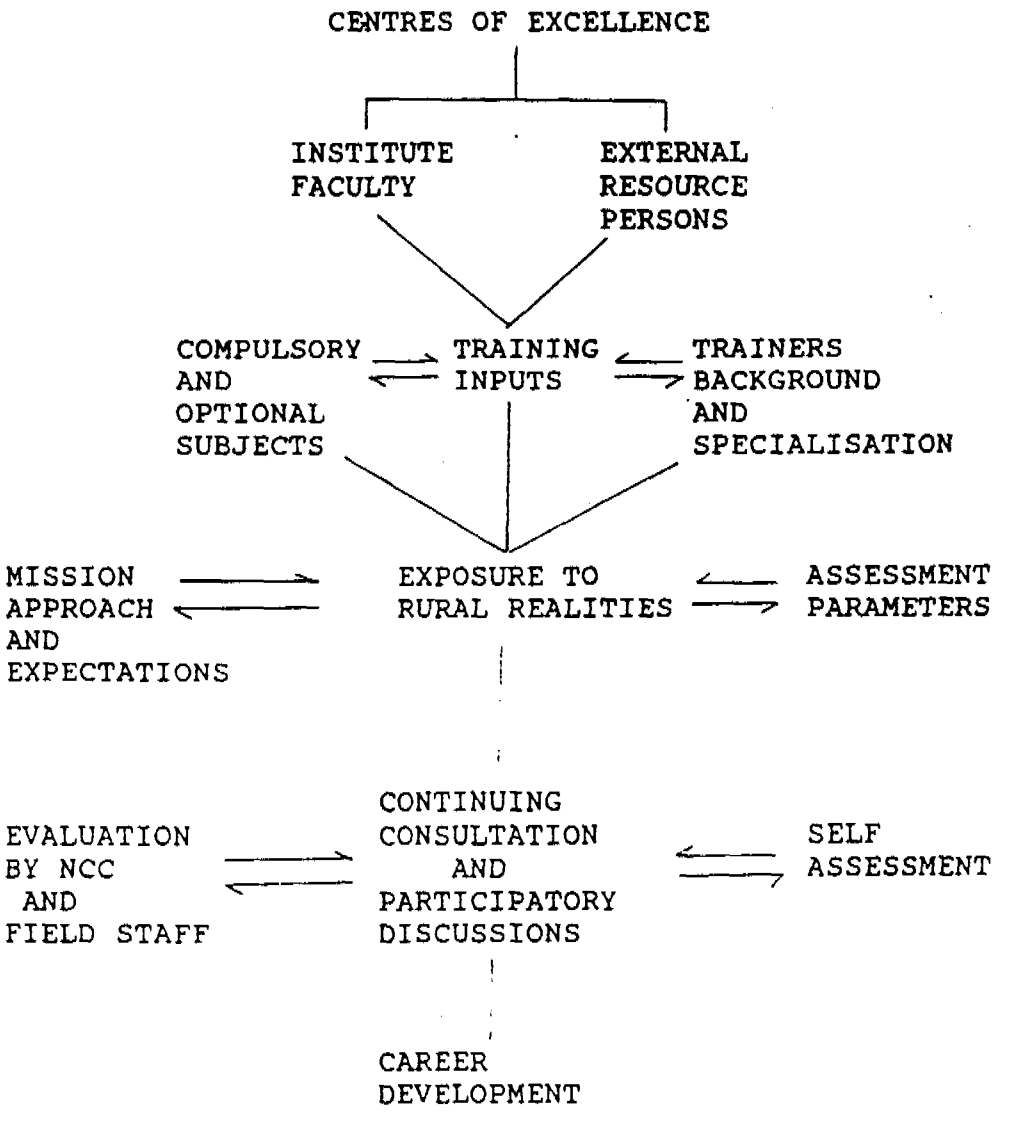
2.5 Some of the above institutions invite external resource persons, experts, engineers and faculty of other such institutions. It has, however, been noted that these rotate between one institution to other mostly falling under the "personally known category". These external resource persons mostly have urban bias, with little linkages with periurban towns and rural areas.

2.6 The foreign experts who participate in HRD efforts also possess similar qualities till they develop the appropriate appreciation for rural sector (rural sociology of India is different from other developing countries).

2.7 Some other contraints of training the trainers in RWSS have been discussed earlier. It is with this background that the 'Trainers Training in RWSS' has been conceived. The following diagram projects the programme.

TRAINERS ORIENTATION

(Path for career development)



Note : **Special assessment of the performance of Director/ Principal/Heads of COE, SI, and State Centres should also be made.**

3. Atributes of trainers

Trainers (faculty of institutions identified for organising training) in RWSS should have the following qualitites :

1) graduate/post-graduate in engineering, physical, chemical or biological sciences, economics, sociology, management, etc.;

2) at least 10 years experience in teaching/research with an apptitude for working in rural areas and/or field level experience of not less than 3 years in any project;

3) worked as water/sanitation/environment engineer in rural areas;

4) engaged in training or received training in India or abroad;

5) frequently visiting villages in connection with field experiments, trials, demonstrations, survey/study and social mobilisation study;

6) willing to accept new learning, skills, and technologies;

7) willing to work in training institutions located in backward areas and/or in small towns or rural growth centres;

8) willing to work in the field to gain first hand knowledge, experience and hardships of work place of field level functionaries; and

9) know application of computers; and

10) atleast know local language of the State, and HINDI.

3.1 These attributes though are difficult to achieve, yet they draw attention to sensitise the trainers with 'rural realities'.

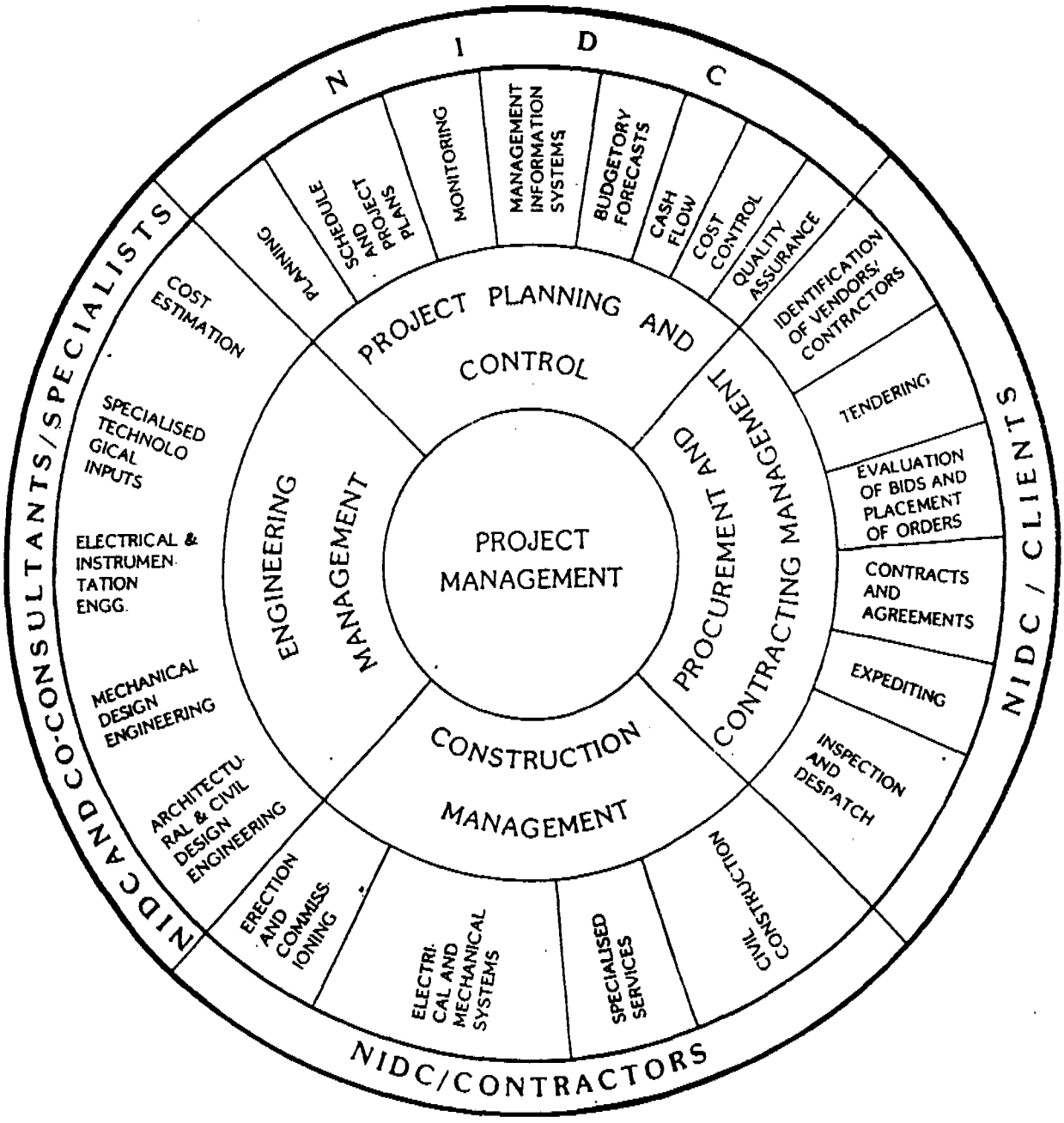
4. Training content

To acquire basic skills and to upgrade their knowledge in learning technology, training management and management training, the following areas should be covered in training content :

1) system approach to planning for training and HRD;

2) role to direct trainers in training functions;

CONCEPT OF
TURNKEY PROJECT MANAGEMENT*



* Designed and applied by NIDC(Consultant to Water Mission)

3) selection of intructional techniques;

4) principal ways of learning including application of transactional analysis;

5) composition of learning units;

6) learning by means of doing and repeating;

7) planning and preparing visual aids;

8) techniques of group dinamics, consultation meetings, participatory discussion, seminar leading, case study preparation;

9) direct trainers skills; and

10) techniques of self evaluation and assessment by the trainees.

4.1 Other essential areas of training content should include,

1) Rural sociology;

2) State of art in RWSS in different FYP; the role of water mission, and post-decade policies;

3) Relationship between water, sanitation, personal hygiene, health, environment, productivity and development;

4) Social mobilisation, participation of community and community women, relationship and linkages with Zilla Parishad, Block, Panchayat, rural institutions and voluntary agencies;

5) Social audit and engineering in training different levels and categories different levels and categories of trainees in terms of attitude, behaviour, faith/ confidance, assinilation, application, adaptation adoption and replication techniques;

6) Project planning, indicators idnetification, locating, implementing, monitoring, evaluating; and use of MIS;

7) Financial management including social cost and cost-benefit, cost-effectiveness, cost-concionsness, demystification, etc;

8) Water modeling and budgeting;

9) Case studies relating to successes and failures;

10) Issues formation for participatory discussion;

11) Enthusing confidance, faith and missionary spirit;

12) Exposure to

i) local resource constraints and conditions in geo-climatic, hardcore and remote villages;

ii) successful projects where water technologies have been installed; and

iii) conditons of RWSS in villages inhabited by poor and socially weak and tribals.

13) The latest innovation in management of RWSS, the information system, and communication;

14) Taking trainees to field visits for practicals in social mobilisation and promotion of environmental sanitation;

15) Materials, quality and standards;

16) Role of industries in RWSS; and

17) Coordination and inter-relationship between and among line agencies directly and indirectly envolved in rural development sectors.

The list is not complete, but indicative. These subjects should, however, be mandetory to all trainees.

5. **Orientation to external resource persons (RP)**

This category is also considered to be the trainers. Since they belong to higher status in learning and specialisation, there may be psychological aversion for inviting them, even for orientation. In order to sensitise them with the understanding of needs of training in RWSS, a tailor made note be prepared by covering the following subjects :

i) the state of art and science of RWSS systems and constraints in different geo-climatic zones;

ii) the composition of trainees (trainers group);

iii) work already done, being done and proposed to done;

iv) the VIII Plan approach;

v) training objective and expectations.

The external resource persons may be advised to prepare their presentation taking the above background into consideration. They should also suggest a bibliography of

the subject of their presentation and prepare necessary visual aids to explain the subject. The presentation should include issues to enable participatory discussion among the trainees.

The RP should be informed that they would be interacting with trainees who may have to replicate their presentation in their own way. Lecture notes be distributed in future courses/presentation or some of these could be tape-recorded. For these inputs the resource persons should be appropriately remunerated.

5.1 The presentation should be heavily weighed with examples, case study, cost, do's and dont's with rural bias.

5.2 Identification of resource persons

Since the names of training institutions are known (op.cit.), it would perhaps be advisable to invite names of resource persons being invited by them and covering following information :

1) name and age
2) educational attainments
3) experience and present activity
4) area of specialisation
5) languages they speak
6) complete address

These names may be reviewed, finalised and put to computer. List of such specialists be circulated to all training institutions for information. Sometimes experts/engineers working in field could be invited for practical demonstration and training. Similarly, industries involved in RWSS could also be invited for trainers training.

5.3 Each training institution identified should consider adopting some villages for field work by trainees. It would perhaps be advisable to take the external resource persons to these rural centres for interaction. They could make night-halt with the trainees.

6. Application

Another important element in 'trainers training' is (i) learning process, (ii) transfer of the learning to trainees; and (iii) wherever needed to end users.

The techniques of 'extension' should form part of this training. How the learning could ultimately be transformed into practise at micro-level. This element would also need

exposure to delivery system, O&M and feedback mechanism.

The interchange between education/training and the workplace demand of trainees should be emphasised to provide necessary competences to the trainees. The trainees (trainers) should also be made aware about development of infrastructural facilities, information and communication system in their institute.

7. Methodology and media

The following methodology could be adopted :

1)	Class room	-	Lecture, demonstration, practicals, group discussion, exercises, preparation of lecture notes,
2)	Use of equipment	-	Computers, photocopy machine, overhead projector, VCR, projectors, survey instruments, etc.
3)	Job assignment exposure	-	Job assignments of engineers, professionals and technicians, appreciation of trainees own workplace environment,
4)	Case studies	-	Special course
5)	Appraisal, monitoring and evaluation exercises		
6)	Handling visual aids		
7)	Preparation of lecture notes and handouts		

7.1 Perhaps a special input would be needed for training women trainers specially their approach to involvement of rural women in WSS.

8. Continuing education

There should be periodical orientation and exchange of experience, and coordination between all institutes identified for RWSS.

9. Evauluation

Trainers training is more than education and training of a general trainee. This aims at improving the trainers individual capacity for continued achievement and helping them to make their best better in transfering the knowledge.

9.1 The Centre of Excellence in consultation with experts should, therefore, develop proforma for (i) self-evaluation by trainers (trainees) themselves; (ii) evaluation of trainers/faculty members/external resource persons by the trainees; and (iii) assessment by the Director of the Institute.

9.2 With above evaluation, the head of institutions could say as to which area a particular trainee (trainer) would be suitable. Whether the said trainee would need higher education (if diploma holder to degree course or specilisation course), etc.

9.3 External refrees could also be involved in the above evaluation process.

10. Basic subjects

Each trainer irrespective of their background, specialisation and job requirement in their training institute should be given brief understanding and appreciation of basic/fundamental knowledge about water and sanitation and related technologies covering what, why, and how.

ANNEXURE 4

Annexure — 4

DETAILS OF TRAINING PROGRAMMES AND COST - CATEGORY WISE

No.	Category	Strength	Course	No. of days	No. of Participants	No. of course/ Year	UNIT COST Course (in Rs)	UNIT COST TA/DA (in Rs)	COST/COURSE Course (in Rs)	COST/COURSE TA/DA (in Rs)	COST/YEAR Course (in Rs)	COST/YEAR TA/DA (in Rs)	Remarks
1.	CE	4	Inhouse workshop	3	2	1	1,000	-	2,000	-	2,000	-	with C.E.S. of other depts. in the state - the course will be held at Hyderabad.
2.	CE	4	National level seminar	3	2	1	2,000	4,500	4,000	9,000	4,000	9,000	Interaction with C.Es of other states and the venue will be in some leading institutions.
3.	CE	4	Seminar at the International level	15	1	once in 3 Yrs.	18,000	1,98,000	18,000	1,98,000	18,000	1,98,000	
4.	S.E.	20	Interaction workshop	3	20	1	275	1,700	5,450	34,000	5,450	34,000	All the S.Es in the state meet at the R.D.T.C.
5.	S.E.	20	Interaction Programme	2	4	1	1,500	3,800	6,000	15,200	6,000	15,200	at the RDTC or elsewhere S.Es of neighbouring states and S.Es of other depts.
6.	S.E.	20	Project Management workshop	5	8	2	490	2,500	3,920	20,000	7,840	40,000	at the RDTC, specially on managerial skills.

No.	Category	Strength	Course	No. of days	No. of Participants	No. of course /Year	UNIT - COST Course (in Rs)	UNIT - COST TA/DA (in Rs)	COST/COURSE Course (in Rs)	COST/COURSE TA/DA (in Rs)	COST/YEAR Course (in Rs)	COST/YEAR TA/DA (in Rs)	Remarks
7.	S.E.	20	National Seminar	3	2	1	1,500	4,200	3,000	8,400	3,000	8,400	at some required institution.
8.	S.E.	20	International Seminar	20	2	1	13,500	1,44,000	27,000	2,88,000	27,000	2,88,000	some International agency could sponsor the S.Es.
9.	E.E.	100	Induction course	4	5	1	260	1,700	1,300	8,500	1,300	8,500	at the R.D.T.C.
10.	E.E.	100	Refresher training	3	20	2	205	1,400	4,100	28,000	8,200	56,000	-do-
11.	E.E.	100	Interaction Workshop	2	3	4	130	1,100	390	3,300	1,560	13,200	
12.	E.E.	100	Managerial skill	3	20	1	205	1,400	4,100	28,000	4,100	28,000	
13.	E.E.	100	Exposure Program on WS Scheme	3	2	2	1,500	2,400	3,000	4,800	6,000	9,600	
14.	E.E.	100	National seminar	3	4	1	1,500	2,400	6,000	9,600	6,000	9,600	
15.	E.E.	100	International Seminar	20	2	1	13,500	1,44,000	27,000	2,88,000	27,000	2,88,000	
16.	Dy.E.E.	450	Induction	4	10	1	260	1,300	2,600	13,000	2,600	13,000	This induction course is provided jointly to the EEs and Dy. E.Es.

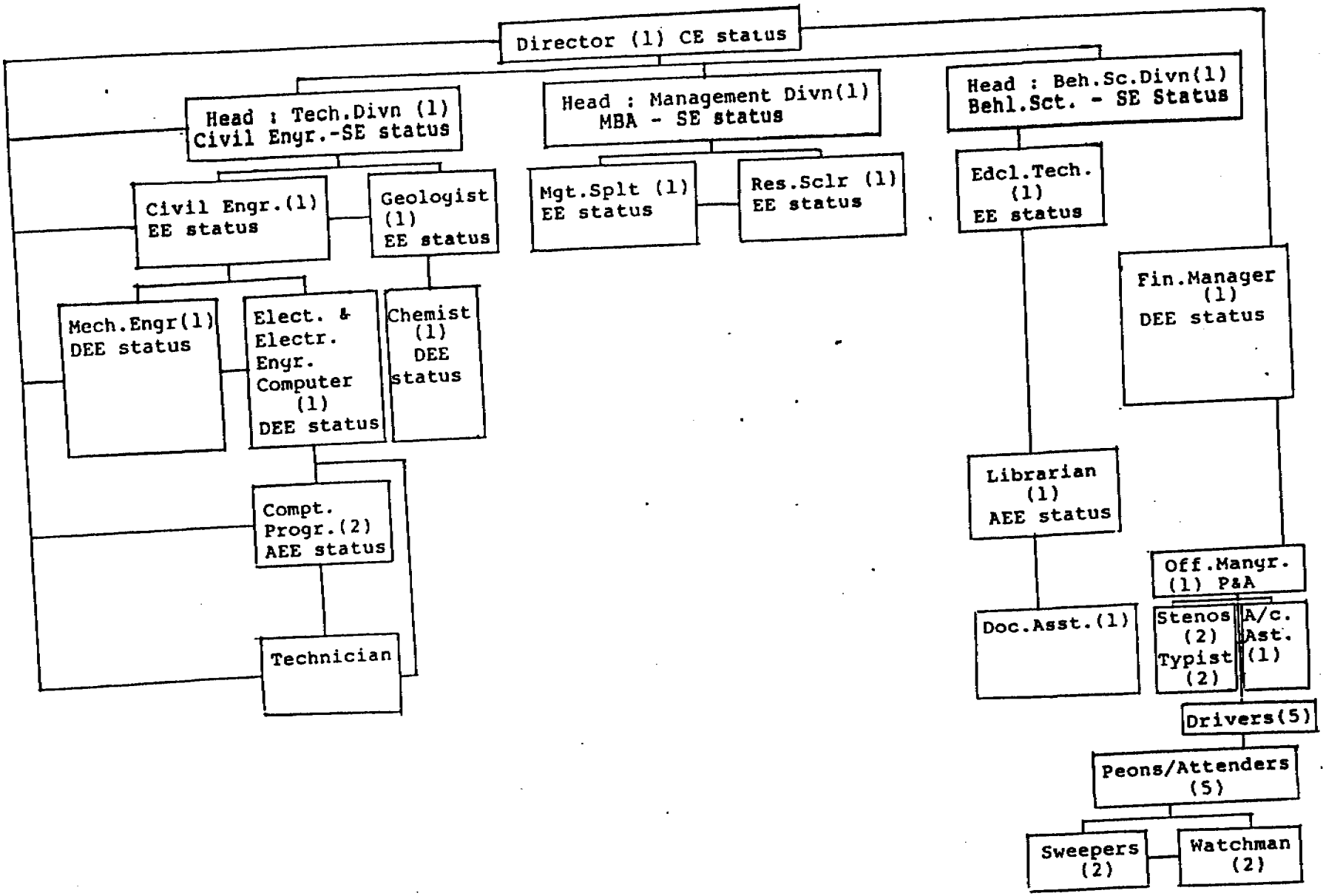
No.	Category	Strength	Course	No. of days	No. of Participants	No. of course / Year	UNIT - COST		COST/COURSE		COST/YEAR		Remarks
							Course (in Rs)	TA/DA (in Rs)	Course (in Rs)	TA/DA (in Rs)	Course (in Rs)	TA/DA (in Rs)	
17.	Dy.EE	450	Refresher	5	20	4	240	1,500	4,800	30,000	19,200	1,20,000	
18.	Dy.EE	450	Interaction	2	7	4	130	900	910	6,300	3,640	25,200	
19.	Dy.EE	450	Managerial skills	5	20	3	280 (rounded off)	1,500	5,550	30,000	16,650	90,000	
20.	Dy.EE	450	National level Exposure Programme	3	10	1	1,000	1,100	10,000	11,000	10,000	11,000	
21.	Dy.EE	450	International Programme	6 months	2	1	90,000	6,84,000	1,80,000	13,68,000	1,80,000	13,68,000	
22.	AEE/AE	2850	Induction	5	20	3	295	1,050	5,900	21,000	17,700	63,000	
23.	AEE/AE	2850	Refresher	3	25	24	150	750	3,750	18,750	90,000	4,50,000	
24.	AEE/AE	2850	Interaction Workshop	2	15	4	130	600	1,950	9,000	7,800	36,000	
25.	AEE/AE	2850	Managerial skill Trg.	5	20	5	270	1,050	5,400	21,000	27,000	1,05,000	
26.	AEE/AE	2850	Intensive Trg.	30	20	2	1,350	4,800	27,000	96,000	54,000	1,92,000	
27.	AEE/AE	2850	National Program	3	20	1	1,000	750	20,000	15,000	20,000	15,000	

No.	Category	Strength	Course	No. of days	No. of Participants	No. of course / Year	UNIT COST Course (in Rs)	UNIT COST TA/DA (in Rs)	COST/COURSE Course (in Rs)	COST/COURSE TA/DA (in Rs)	COST/YEAR Course (in Rs)	COST/YEAR TA/DA (in Rs)	Remarks
28.	AEE/AE	2850	International Program	1 Year	5	1	1,08,000	11,16,000	5,40,000	55,80,000	5,40,000	55,80,000	
29.	Geologist	45	Refresher	3	15	2	255 (rounded off)	600	3,800	9,000	7,600	18,000	
30.	"	45	Interaction	2	30	1	125 (rounded off)	500	3,700	15,000	3,700	15,000	
31.	"	45	State-of-art Technology	To be decided	2	One in 2 Yrs.	2,500	-	5,000	-	5,000	-	
32.	"	45	National level seminar	3	2	1	1,000	800	2,000	1,600	2,000	1,600	
33.	Technical staff	-	Special workshop	5	20	3	150	1,100	3,000	28,000	9,000	84,000	
34.	"	-	Exposure to computers	5	20	5	230	2,000	4,600	40,000	23,000	2,00,000	
35.	Chemist/ water analyst	20	Refresher	3	20	One in 2 Yrs.	170	500	3,400	10,000	3,400	10,000	This course will be held every alternate year.
36.	"	20	National level Program	3	2	1	1,000	700	2,000	1,400	2,000	1,400	

No.	Category	Strength	Course	No. of days	No. of Participants	No. of course / Year	UNIT - COST Course (in Rs)	UNIT - COST TA/DA (in Rs)	COST/COURSE Course (in Rs)	COST/COURSE TA/DA (in Rs)	COST/YEAR Course (in Rs)	COST/YEAR TA/DA (in Rs)	Remarks
37.	Work Inspector	3750	Induction	5	30	2	235	350	7,000	10,500	14,000	21,000	
38.	"	3750	Refresher	3	25	30	160	230	4,000	5,750	1,20,000	1,72,500	
39.	Draughtsmen/ Tracer	350/ 100	Induction	3	20	1	175 (rounded off)	560	3,450	11,200	3,450	11,200	
40.	"	"	Refresher	2	30	3	115 (rounded off)	440	3,400	13,200	10,200	39,600	
41.	Electrician	100	Induction	5	5	1	30	230	150	1,150	150	1,150	
42.	"	100	Refresher	3	20	1	135	150	2,700	3,000	2,700	3,000	
43.	Pump Mechanic (800) Fitter (1000) Linesmen 50 Fitter bed Operator 50 Pump Optr. 1060 Helper 500		Motivation course	3	40	24	115	200	4,600	8,000	1,10,400	1,92,000	
44.	"	"	Schema specific	2	30	2	135	210	4,050	6,300	8,100	12,600	It is a field oriented training, headed by the AE/ AEE.
45.	Gangman	750	Motivation course	1	25	6	44	40	1,100	1,000	6,600	6,000	

ANNEXURE 5

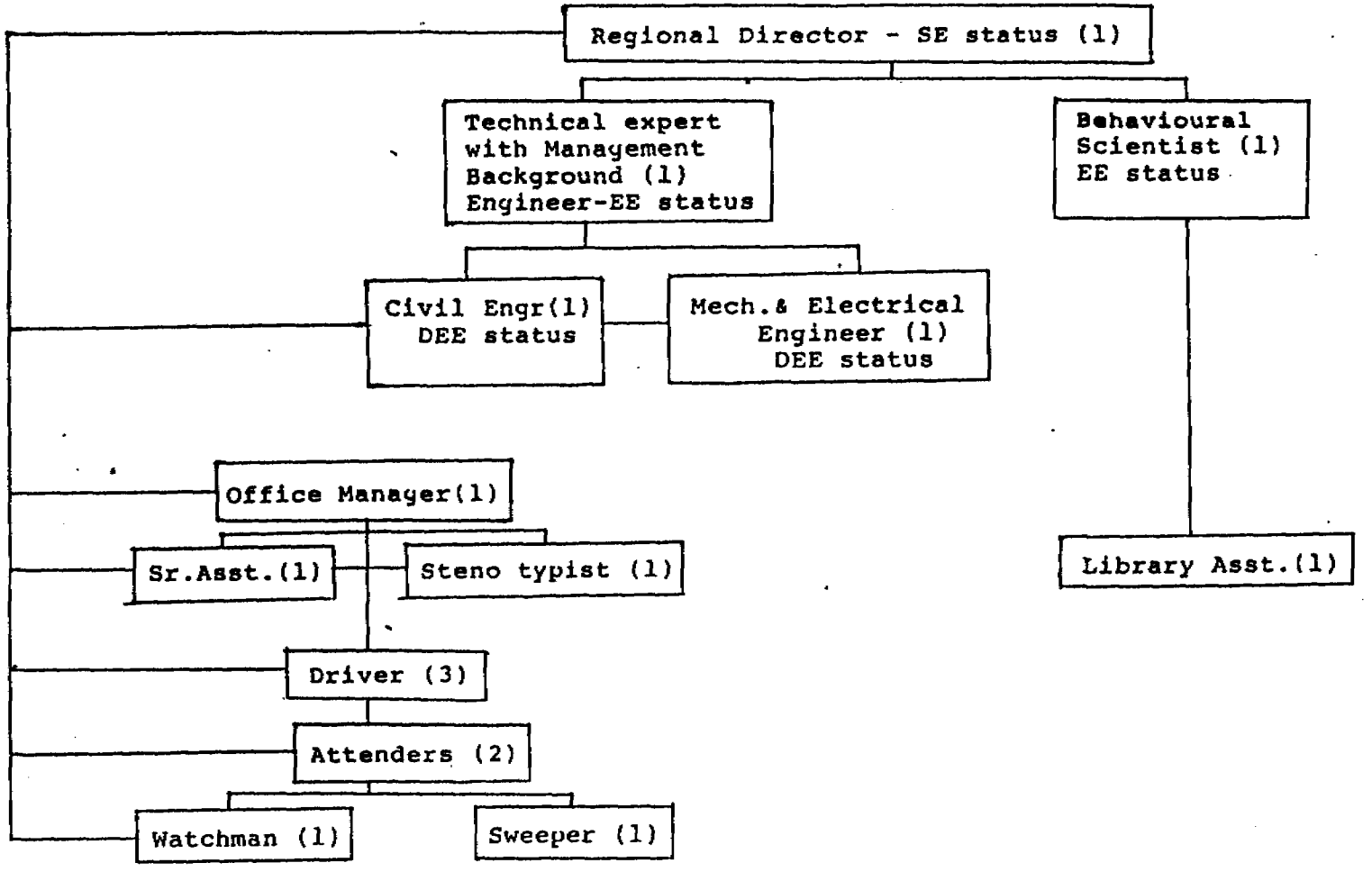
ORGANISATION STRUCTURE - RDTC



Annex 15

ANNEXURE 6

ORGANISATION STRUCTURE : RTC



ANNEXURE 7

R D T C

I. **Infrastructure : Cost**

1.	Lecture halls, 2 Nos. (50x30x2)	3000	sq.ft
2.	Director's room (20x15)	300	"
3.	Faculty rooms-3(20x15)	900	"
4.	Library and Documentation room (50x40)	2000	"
5.	Lounge and Reception	800	"
6.	Verandah and Corridor (including a room for office staff)	1600	"
7.	Computer Room	500	"
8.	Dining Hall (40x30)	1200	"
9.	Kitchen (20x15)	300	"
10.	Toilet and Bath (6x5x10)	300	"
11.	Rest room for outside faculty	400	"
		11300	"

at Rs.400/- sq.ft. the construction cost will be 45.20 lakhs

II Vehicle shed and Watchman's room (1000 sq.ft) at Rs.300/-sq.ft. the cost is 3.00 "

III Laboratory (1500 sq.ft.) at Rs.400/- sq.ft., the cost is 6.00 "

IV **Hostel (to be constructed on the first floor)**

1.	10 Independent rooms (15x12)	1800	sq.ft
2.	10 double rooms (20x12)	2400	"

3.	10 common rooms (3 in one) (15x20)	3000 "
4.	Lounge and Corridor (20x30)	600 "
5.	Toilet cum Bath (6x8x30)	1440 "
		9240 "
	At Rs.350/- sq.ft. the Cost will be	32.34 lakhs

V Equipments

a. Training Centre

1.	Slide projector - 2 Nos.	Rs. 20,000
2.	TV and VCR	30,000
3.	Video Camera	50,000
4.	OHP	10,000
5.	Amplifier etc.	50,000
6.	Video Cassettes (50 Nos.)	12,500
7.	Camera	12,000
8.	Water Cooler	10,000
9.	Electrical equipments (including A/c for the Computer room and the Director's room)	1,00,000
		Rs. 2,94,500

Rounded off to 2.95 lakhs.

b. Laboratory

1.	Electrical equipment including autoclave, refrigerator, incubator, Centrifuges, etc.	Rs. 75,000
2.	Chemical equipments (including glassware)	Rs. 50,000
3.	Work benches and partitions	Rs. 50,000
		Rs.1,75,000

c. Hostel

1.	Water cooler, refrigerator, geyser fans, bulbs, etc.	Rs. 80,000
2.	Utensils, corckery, grinder cooking range, stacks (for strong things)	Rs. 50,000

VI Furniture

a. Training Centre

		Rs.
1.	Tables (50)	75,000
2.	Chairs (110)	65,000
3.	Sofa set	20,000
4.	Cupboards (25)	1,25,000
5.	Miscellaneous	20,000
		Rs. 3,05,000

		Rs.
b.	Hostel	
1.	Cot (50 Nos.)	1,00,000
2.	Bedside tables and chairs (50 Nos)	50,000
3.	cupboards (50 Nos)	60,000
4.	Mattresses, pillows, bedsheets, bed covers, etc.	90,000
		Rs. 3,00,000
VII	Documentation	
1.	Electronic type writer	50,000
2.	Manual typewriter (2 Nos.)	20,000
3.	Xerox machine (1 No.)	1,50,000
4.	Furniture	20,000
5.	slides, transparencies, models	60,000
		3,00,000
VIII	Computers (with printers)	6,00,000
IX	Books and Periodicals for the Library	3,00,000
X	P.B.X. facilities	1,00,000
XI	Vehicles	in rupees
	2 Cars, 2 jeeps 1 mini Bus	13,00,000

XII Staff Quarters

1.	Independent Bungalow for the Director (1200 sq.ft.) at Rs.400/- sq.ft.	4,80,000
	Furnishing	50,000
2.	Type 2. 12 flats of about 1000 sq.ft. at Rs.350/- sq.ft. (officers of SE & EE rank)	42,00,000
3.	Type 3. 8 flats, 750 sq.ft. at Rs.350/- sq.ft. (Dy.EE/AE/ Superintendent)	21,00,000
4.	Type 4. 12 flats, 600 sq.ft. at Rs.325/- sq.ft. (Drivers, attenders, watchmen)	23,40,000
		Rs. 91,70,000

XIII Fencing, water supply, internal roads, landscaping (15% of the total construction cost) Rs. 19,50,000

R T C

I Infrastructure : Cost

1.	Lecture hall	600 sq.ft
2.	Regional Director's room	320 "
3.	Faculty rooms (2x12x20)	480 "
4.	Library cum-documentation	300 "
4a.	Computer room (12x15)	180 "
5.	Lounge and reception (including a room for office staff) (12 x 20)	240 "
6.	Verandah and Corridor	160 "
7.	Dining hall (15x20)	300 "
8.	Kitchen (12x20)	240 "
9.	Toilet and Bath	160 "
		2980 "

Calculated at Rs.400/- sq.ft.
the construction cost will be Rs.11,92,000

Ia Workshop (Asbestos Cement sheet roof on steel trusses) (2x20x30) at Rs. 400/- sft. Rs. 4,80,000

II Vehicle shed and watchman's room (400 sq.ft.) at Rs.300/- sq.ft. Rs. 1,20,000

III Hostel (to be constructed on the first floor)

1.	3 dormitories to accommodate 30 persons	2500 sq.ft
2.	Toilet and Bath (10 nos.) (8 x 5 x 10)	400 "
		2900 "
	at Rs.350/- per sq.ft. the construction cost will be	Rs.10,15,000

IV Equipments

			Rs.
a.	Training Centre		
1.	Slide Projector	1 No.	10,000
2.	O.H.P.	1 No.	10,000
3.	Tape recorder and Cassettes	1 No.	10,000
4.	Camera	1 No.	5,000
5.	Water cooler	1 No.	10,000
6.	(Colour TV and VCR)	set	30,000
7.	Electrical equipments		20,000
b.	Tools and equipment for the workshop		50,000
c.	Hostel		
	Electrical equipment (fans, lights)		50,000
	(water cooler, Refrigerator, geyser etc.)		
	Utensils, cooking range etc.		30,000
			Rs. 2,25,000

X Staff Quarters	Rs.
1. Independent Bungalow for the Regional Director 1200 sq.ft. (no. furnishing)	4,80,000
2. Type 2, 4 flats of 1000 sq.ft. (plinth area) at 350/sq.ft.	14,00,000
3. Type 3. 4 flats of 750 sq.ft. at 350/- sq.ft.	10,50,000
4. Type 4. 8 flats (600 sq.ft.) at 325/- sq.ft.	15,60,000
	Rs. 44,90,000

XI Fencing, water supply, garden road, etc. at 15% of the construction cost	Rs. 9,00,000

V	**Furniture**	
	a. **Training Centre**	
	1. Tables (30)	45,000
	2. Chairs (50)	30,000
	3. Sofa set	15,000
	4. Cupboards (15)	75,000
	5. Miscellaneous	10,000
		Rs.1,75,000
	b. **Hostel**	
	1. Cots (25 Nos.) at 2,000	50,000
	2. Bedside tables and chairs 25, (at 1,000/-)	25,000
	3. Cupboards 25	30,000
	4. Mattresses, pillows, bedsheets etc. (25 x 800)	45,000
		Rs.1,50,000
VI	**Documentation**	
	1. Manual typewriter (2 Nos.)	20,000
	2. Xerox Machine (1 No.)	1,50,000
	3. Furniture	10,000
	4. Slides, transparencies, models	10,000
		Rs.1,90,000
VII	Computer (PC/XT) with printer	Rs.2,00,000
VIII	Books and Periodicals	Rs. 50,000
IX	Vehicles - 1 car, 1 jeep, 1 mini bus	Rs.6,00,000

Capital Cost at a glance - RDTC

(Rs.in lakhs)

1.	Training Centre	45.20
2.	Vehicle shed	3.00
3.	Laboratory	6.00
4.	Hostel	32.34
5.	Equipments - training centre	2.95
5a.	Equipments - laboratory	1.75
5b.	Equipments - hostel	1.30
6.	Furniture - training centre	3.05
6a.	Furniture - hostel	3.00
7.	Documentation	3.00
8.	Computers with printers	6.00
9.	Books and periodicals	3.00
10.	PBX facilities	1.00
11.	Vehicles	13.00
12.	Staff quarters	91.70
13.	Fencing, landscaping	19.50
	Total	235.79

Capital Cost at a glance - RTC

(Rs.in lakhs)

1.	Training Centre	11.92
2.	Workshop	4.80
3.	Vehicle shed	1.20
4.	Hostel	10.15
5.	Equipments - training centre	0.95
5a.	Equipments - workshop	0.50
5b.	Equipments - hostel	0.80
6.	Furniture - training centre	1.75
6a.	Furniture - hostel	1.50
7.	Documentation	1.90
8.	Computer with printer	2.00
9.	Books and periodicals	0.50
10.	PBX facilities	0.50
11.	Vehicles	6.00
12.	Staff quarters	44.90
13.	Fencing, landscaping	9.00
	Total	98.37

RECURRING EXPENDITURE

R.D.T.C.

	(Rs.in lakhs)
Salary for the core staff *	13.24
(see volume 2 for details) (12.04 + 1.20)	
R and D Unit and village laboratories	2.75
Stationery	0.80
Power Charges	0.15
Vehicles - POL, minor repairs	3.50
Films, slides, film rools	3.00
Computer Accessories & Stationery	0.80
Books and periodicals	0.25
Annual repairs and maintenance (equipment, buildings and garden)	1.50
	25.99

Hostel

Salary for the staff (see annexure)	1.41
Provision, milk, gas	2.50
Electricity charges	0.25
Annual repair & maintenance	0.20
	4.36
Total (per year) 25.99 + 4.36	30.35

* To ensure that the best talent is attracted to the R.D.T.C., an incentive is given to all the staff at the training centre, amounting to 10% of the basic pay

RECURRING EXPENDITURE

R.T.C.

(Rs.in lakhs)

Training Centre

Salary for the staff* (see volume 2 for details) (4.65 + 0.47)	5.12
Stationery	0.30
Power charges	0.05
Books and Periodicals	0.10
Vehicles - P.O.L. & minor repairs	2.00
Annual repair & maintenance (equipment and buildings) and a garden	0.20
Annual maintenance (workshop)	0.15
	7.92

Hostel

Salary for the staff (see annexure)	0.73
Provision, milk, gas	1.50
Electricity charges	0.15
Annual Repairs & Maintenance	0.12
	2.50
Total annual expenditure (7.92 + 2.50)	10.42 lakh

* 10% of the basic pay is given to all the staff as an incentive

Total Budget

(Rs. in lakhs)

1.	RDTC	
	- Capital	235.79
	- recurring (5 years)	167.70
2.	RTC	
	- Capital	98.37
	- recurring (5 years)	57.65
3.	Organisation of Training (5 years)	
	- training	155.95
	- T.A. & D.A. (Overseas)	100.00
4.	Trainers' Training	13.16
4a.	Trainers' Training at IRC (every year)	39.47
5.	Curriculum Development	14.14
6.	TAC expenses	1.658
7.	Monitoring of	
	- training facility	2.50
	- implementation of training programmes	2.50
8.	Revolving fund at RDTC/RTC	6.00
	Total	894.88

Rounded off to Rs. 894.88 lakhs

NOTE: Original proposal prepared by Mr.Subramanyam is for Rs. 1263.88 lakhs with a provision of Rs. 469.00 lakhs for Item T.A & D.A. (ovearseas). Subsequently Rs. 469.00 lakhs is released to Rs. 100.00 lakhs because generally overaseas training amount will bear by sponsor.

RECURRING EXPENDITURE - YEAR WISE (Rs. in Lakhs)

Sl.No.	Unit	I Year	II Year	III Year	IV Year	V Year	Total
1	RDTC	30.35	31.[illegible]	33.46	35.13	36.89	167.70
2	RTC	10.42	10.[illegible]	11.51	12.08	12.68	57.65
3	Training Cost	28.23	29.64	31.12	32.68	34.31	155.98
4	TA & DA (Overseas)	84.87	89.11	93.57	98.25	103.16	468.96
5	Trainers' Training	5.95	-	-	-	7.21	13.16
5a	Trainers' Training at IRC, The Hague	7.14	7.50	7.88	8.27	8.68	39.47
6	Curriculum Development	6.38	-	-	-	7.76	14.14
7	TAC Expenses	0.30	0.315	0.331	0.347	0.365	1.658
8	Monitoring of the a. training facility b. training programmes	5.00	-	-	-	-	5.00
9.	A revolving sum for the RDTC/RTC	6.00	-	-	-	-	6.00
		184.64	169.395	177.871	186.757	211.055	929.718

Note : Escalation evaluation at 5% per annum.