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Training network for the Decade

INTRODUCTION :

The number of people presently without adequate water supply and sanitation in the developing countries, amounts to more than a billion and a half to which natural growth will add another three quarters of a billion, so that by 1990, close to two and a half billion people would have to be provided with facilities for safe water supply and excreta disposal. The staggering amount of money required for achieving the Decade's objectives not withstanding, the efforts required to train sufficient manpower to design and constructnecessary facilities and to operate and maintain them is no less challenging than generating the financial resources required.

MAN POWER REQUIREMENT FOR THE DECADE:

It is difficult to decide just how many staff members will have to be added during the Decade to provide a sufficient number of managers, engineers, technicians, operators and other staff. An approximate estimate could, however, be made on basis of the number of people to be served, the level of service contemplated and the staffing pattern of the existing service facilities in our country. Well managed sector enterprises in developed countries employ from 0.5 to 1.5 staff members per 1000 people served, depending on the size of the enterprise, the type of facility and technology used; the density of population etc. For our country, this figure would be some what higher, considering that we are likely to opt for more labour intensive technology. As per the targets set by Govt. of India, another one and a half billion people would have to be provided with the facilities of potable water supply and sanitation, during the decade, which means that our manpower requirement for the Decade would be around 200,000 to 2,50,000.

On the basis of the existing staffing patterns of various organisations working in the field of P.H.Engg, for every 100 staffs, the distribution of various professionals and technicians could be as given below.

TABLE - I

Distribution of Professionals in P.H.Engg. Works.

1) Engineers(Degree)	15
2) Jr. Engineers(Diploma) ...	27.5
3) Administrators/Economists/ Soc.Scientists/Financial ..	2.3
4) Sanitary Chemists/Biologists/Geologists	0.3
5) Technicians (Draughtsmen, plant operators,Mechanics/ Electricians/Fitters/ Plumbers/Drivers/Lab Technicians etc)	54.7
Total	100.0

(Prepared according to data collected by C.P.H.E.E.O from various state Govts.)

TABLE - II

Manpower requirement of the Decade

Category of staff	Total requirement for the Decade
1. Engineers(Degree)	34,500
2. Jr. Engineers	63,250
3. Administrators/Economists/Social Scientists/ Acctts./Health Educators etc.	5,280
4. Sanitary Chem./Biologists/Geologists etc.	1,100
5. Technicians(Draughtsman, Plant operators,Mechanics, fitters plumbers etc.)	1,26,000
Total	2,30,000

Requirement of manpower for the Decade thus worked out compares reasonably well, with the figures that C.P.H.E.E.O., has recently collected from various state governments, regarding their manpower requirement during the decade;

TRAINING PROGRAMMES :

It is quite obvious, that any long term modifications or augmentations at this moment in the regular degree & diploma courses will not have any bearing on the training needs in the seventh plan period. Hence the manpower planning for the decade should have two basic approaches :

(i) Short term planning for the 7th plan period.

(ii) Long term planning for post 7th plan period.

THE INTERNATIONAL NETWORK

Objectives

The training Network for Water and Waste Management was established by the World Bank, the United Nations Development P rogramme, and other multilateral and bilateral agencies to support the Human Resources Development objectives of the International Drinking Water Supply and Sanitation Decade. The Network's principal objective is to train sector staff and other specialists to more effectively plan, implement, and maintain water supply, sanitation and waste disposal/rouse programms and projects serving low income beneficiaries. For this purpose the World Bank has developed extensive training materials for instructors and trainees which in addition to providing information on technologies, emphasize community participation and hygiene education as essential components of water supply and sanitation programs. Additional training side will be developed by this Network as required.

Organisation.

The Network will be composed of some 15 "Participating Institutions" in developing countries. They will be selected from those which have well established teaching and research programs which can be adopted and expanded to cover Network topics. Participating institutions will receive financial support for Network activities from bilateral, multilateral and national agencies. Financial resources include funds for obtaining technical assistance from "Associated Institutions" which are training institutions located in developed countries with demonstrated expertise in training or research in developing countries and in Network topics. The identification of the need for such assistance and the choice of associated institutions is the responsibility of the participating institution.

Coordination.

The World Bank, with the support of the United Nations Development Programme, has established, within its Urban Development Department, a "Network Coordinating Unit". The purpose of this unit is to promote the Network, to identify resources for its expansion and improvement, to coordinate its activities and to provide, at the request of network institutions, technical assistance. Amongst the latter activities are :

- Information exchange among network institutions, including the organisation of international workshops and conferences (funds for the participation of network institution staff are included in the respective budgets).

- Participation in selected Network activities at the request of institutions, such as decision-makers, seminars etc.

- Provision of technical assistance at request of institutions, in specific topics, such as institutional development, finance, etc.

- Identification, respectively preparation, of additional needed training materials, particularly the addition of materials to teach operation and maintenance.

The coordinating unit will make special efforts to promote "Technical Cooperation among Developing Countries" through joint or complementary

activities of participating institutions.

OBJECTIVES IN INDIA.

The objectives of the Network activities in India are to assist the Government to achieve its targets for the International Drinking Water Supply and Sanitation Decade. The Networks effort will concentrate on increasing the sector's capacity to apply low cost water supply and sanitation technologies in a socio-culturally acceptable manner, at costs affordable to the low income beneficiaries, and with their participation in the planning and implementation of projects and with the provision of related personal hygiene and environmental health measures. The Network will assist in human resource and institutional development.

Human Resource Development:

a) Engineering Students at Undergraduate and Graduate Levels in civil, engineering, sanitary/environmental engineering and public health would learn to develop and design programs and projects incorporating various technologies appropriate and affordable to specific user groups, to communicate with those user groups, alone or together with behavioural scientists and health workers, to determine user preference and motivate them to participate in project development, implementation and maintenance, and to modify personal hygiene habits.

b) Polytechnical Institute Students (Diploma and Certificate Courses) would learn to design and construct various low cost technologies, work with public health workers in promoting the use of these technologies and supervise the execution of low cost technology projects. Instructors of selected Industrial Training Institutes would receive instruction in construction techniques of specific low cost water supply and sanitation facilities.

c) Practising Engineers in public sector agencies and consulting Firms would become cognizant of the various low cost technology alternatives, the need for user hygiene education, community participation in technology choice and implementation and the requirement that technologies need to reflect socio-cultural user preference. Practising engineers would receive training in design and implementation in accordance with their experience and responsibilities.

d) Voluntary workers with NGDs, who are often deeply involved in user participation, would increase their understanding and knowledge of the appropriate technology for low-cost systems.

Institutional Development

a) Network Participating Institutions will acquire the capability to assess and develop training programs, to orient instructors of engineering schools, polytechnical institutes and agency in house training courses and train practising engineers and students in low cost technologies and related community participation and public health topics. They will be capable of providing training support in special subjects, monitor progress and promote the use of low cost technologies and related activities. They will, in addition, develop the capacity to advise on low cost water supply and sanitation project development. To accomplish this functio, "Participating institutions" would be provided with the financial and technical support to establish a Unit for Low Cost Water Supply and Sanitation staffed by a multi-disciplinary team capable to perform the task described in the work-program.

b) Engineering Colleges and Polytechnical Institutions will acquire the capability to teach the some subjects to their students. As the program expands, one or two "key institutions" in the States participating in this effort will receive both technical support from the network participating institutions and financial assistance from finance development agencies to serve as State focal point for dissmination and orientation activities

in the State.

c) Sector Agencies and Consultant Firms would acquire the capability to develop and implement low cost appropriate technology projects and train their staff to do so.

NETWORK INSTITUTION IN INDIA :

The two participating institutions selected in India are the All India Institute of Hygiene and Public Health in Calcutta and Anna University in Madras, Each will establish a Project Unit to undertake the work program described in this document. The All India Institute will work in Assam, Bihar, Gujarat, Himachal Pradesh, Rajasthan, Uttar Pradesh and West Bengal. Anna University will work in Andhra Pradesh, Karnataka, Kerala and Tamil Nadu. "Key institutions" will be selected from colleges and polytechnical institutes in each state. The key institutions will become the principal promotional link through which the Centres will work to reach institutions in the States once the size of the program in a State makes such a decentralisation necessary for effective operation. Public sector agencies will be provided with assistance in the formulation and implementation of their own continuing education programs. The Network activities in India would be guided by a Co-ordinating Council set up under the Ministry of Urban Development, under the Chairmanship of the Adviser, C.P.H.E.E.O,. The Indian Network Programme is proposed to be financed by the O.D.A.(U.K).