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Low cost on-site excreta disposal



1. The Technology Advisory Group

- 1.1. In 1978, the United Nations Development Programme launched a Global Project, with the World Bank as executing agency, to translate the research findings into actual projects by the creation of a multi-disciplinary team of engineers, anthropologists and health experts - the Technology Advisory Group (TAG). Inaugurated with a modest initial budget, the Project was remarkably successful in attracting support from developing country governments and in mobilizing resources from the donor community, and was expanded in a follow-up International Project This Interregional Project (INT/81/047: Development and Implementation of Low-Cost sanitation Investment Projects) is now active in many countries around the world including India.
- 1.2 TAG's objectives are to provide technical assistance in the development and implementation of low cost sanitation projects; to help find funds to finance the projects; to stimulate research and applied investigations into key unresolved issues; and to develop qualified local staff through training and dissemination activities.
- 1.3 Collaboration with other development agencies marks TAG's approach. TAG currently provides technical assistance to member governments to implement projects funded by a variety of multi- and bi-lateral donors through work done at TAG headquarters and also by its worldwide team of resident experts. TAG has, in turn, received support from these donors in terms of staff and funds to expand its network.
- 1.4 By persuading governments to support low cost but effective sanitation options, the fundamental change in conceptual approach is reflected today in a significant number of

sanitation projects being implemented around the world with or without TAG assistance. Not dependent on large and costly central systems, these projects still provide the same benefits to the communities they serve. These new systems are of two principal types: the Ventilated Pit Latrines (VIP) in wide use in Africa and the pourflush latrine used in Asia. Far from being sanitation 'stop gap' technologies with short life expectancies, they are permanent, high-quality utilities. They correspond to the original design needs effectively, in that they economize in the use of scarce water, can be constructed with either low cost modern materials or local ones, are affordable now and can be installed almost at once, and are simple enough to be built by the people who use them.

2. UNDP and UNICEF Projects

2.1 The Government of India in the Ministry of Works and Housing decided (June 1979) that 110 towns (preferably with a population less than 100,000 and having water supply) be selected in the 7 states of Assam, Bihar, Gujarat, Maharashtra, Rajasthan, Tamil Nadu and Uttar Pradesh in the first instance for providing wherever possible low cost waterseal latrines with preparation of the Master Plan Reports including Preliminary Engineering and Feasibility Study for the 110 towns to the UNDP Global Project. The reports for all the seven States were completed in August, 1981. Encouraged by these studies, Government of India requested TAG (India) to prepare similar feasibility studies for another 101 towns in 14 States/Union Territories of the country under UNDP-India Project IND/81/014. TAG (India) completed these studies by May 1984. These two projects achieved the objective of developing a low cost solution to the problem of safe excreta disposal in the urban areas of the country. The demonstrated that the pourflush latrine with on-site disposal of human waste is an appropriate low cost technology.

2.2 UNICEF is currently providing substantial inputs to a Government of India sponsored project under the UNDP Umbrella (Project No. IND/84/016) to develop low cost sanitation technologies in the rural areas of the country. The Project began in June, 1984, covers 3600 villages in 13 states and is executed by TAG (India). The Project will study the complex problems peculiar to the rural areas of the country: attitudes of the rural people to latrines vis-a-vis defecating in the open; institutional arrangements; delivery mechanisms; and affordability of the people which is considered very low in rural communities compared to the more affluent urban population.

3. The Low Cost Pourflush Latrine.

3.1 Pourflush waterseal leach pit latrines were first developed in India in the mid-1940s at the Singur field centre of the All India Institute of Hygiene and Public Health, Calcutta. In the mid-1950s the same system was adopted in the Research-cum-action Projects sponsored by Govt. of India (GOI) at Poona-mallee (Madras), Najafgarh (DELHI) and Singur (Calcutta).

3.2 It was in the late 1950s that the WHO/UNICEF-sponsored project at the Planning, Research-cum-Action Institute at Lucknow, Uttar Pradesh which was supported by Govt. of India and the Govt. of Uttar Pradesh developed the design of the off-set system by placing the leach pit away from the latrine seat instead of underneath the squatting pan. The off-set system has the advantage that a second pit can be constructed before the pit in use becomes full; furthermore the squatting slab need not be removed, and a new latrine cubicle does not have to be constructed. Thus, the existing waterseal latrine can be used immediately after the first pit is full. The cover of the used leach pit is then transferred to the new one, and the used pit is covered with earth. This off-set system was also developed for

rural areas; to save cost, the second pit and its cover were not provided in the first instance.

3.3 The design developed by TAG (India) for urban areas is based on the off-set leaching pit system with twin pits to be constructed at the same time, so that there is no later work involved in digging the second pit. TAG (India) developed the design and optimised it through several studies. TAG (India) was also instrumental in developing GRP and PVC squatting pans and HDPE traps.

4. Institutional, Financial, Social and Legal Aspects.

4.1 Past programmes of urban and rural sanitation in India have touched only the fringe of the problem. At the beginning of the International Drinking Water Supply and Sanitation Decade, only 27% of the urban and less than 1% of the rural population had access to sanitary latrine facilities. This does not mean that past programmes of sanitation have been failures. On the contrary, there are excellent examples of success both by Government and non-governmental agencies. Nevertheless, the multiplier effect of these programmes more in relation to the size of the problem and the needs is not in evidence. The Decade targets adopted by Central and State Governments to provide sanitary latrine facilities to 80% of the Urban and 25% of the rural population by 1990 do not seem to be anywhere near achievement.

4.2 This brings into focus some of the operational factors and issues which are crucial for a large programme. Some of the factors and issues are:

- a) Political will and policy commitment
- b) institutional and delivery aspects
- c) financial arrangements
- d) social marketing and
- e) legal tools and instrumentalities.

- 4.3 It is apparent that political will and policy commitment for a large scale latrine construction programme have been inadequate, to put it mildly, in most States in India. Consequently, the outlays provided in the 6th Plan and expected in the 7th Plan (these two Plans encompass most of the Decade period) are meagre in relation to the requirements. Nonetheless, some are available from Government and semi-Government sources. Government of India's Ministry of Works and Housing has agreed to provide soft loans for low cost sanitation schemes under its programme for the integrated development of small and medium towns. Ministry of Home Affairs has launched a programme supported by grants for the conversion of insanitary bucket latrines into pourflush latrines with the objective of liberating scavengers from handling night soil. The Housing and Urban Development Corporation (HUDCO) and the Life Insurance Corporation of India (LIC) have funds available for sanitation schemes. State Governments like Andhra Pradesh, Tamil Nadu and Maharashtra have fair sized programmes of low cost sanitation.
- 4.4 Multi-lateral and bi-lateral agencies are showing growing interest in low cost sanitation. Low cost sanitation has been included in the World Bank assisted water supply and sanitation projects in Gujarat, Tamilnadu and Kerala, in the Bank assisted urban development projects in Kanpur and Madhya Pradesh and is proposed to be included in similar Bank assisted projects under consideration for Madhya Pradesh and Uttar Pradesh. The number of low cost sanitation units of TAG design installed all over India exceeds 1,25,000 and the total investment committed is of the order of Rs.113 crores from Govt. sources including Rs.55 crores in World Bank aided projects.
- 4.5 However, considerably more resources and policy commitments have to be made to break the back of the problem. Inclusion of Low Cost Sanitation in the 20-Point programme and launching of a Centrally sponsored programme on the lines of the accelerated rural water

supply programme should give a fillip to sanitation efforts. Incorporation of latrine units compulsorily in housing schemes undertaken by Government, Housing and Urban Development Corporation, Life Insurance Corporation of India, General Insurance Corporation of India (GIC) etc. and in housing schemes of National Rural Employment ~~xxxxxxx~~ Programme (NREP), Rural Landless Employment Guarantee Programme (RLEGP) and the like would also go a long way in triggering off sanitation development.

- 4.6 For cost-effective use of available resources, the crucial aspects of implementation have to be considered. Several issues crop up at this stage. Sanitation schemes are historically the responsibility of local authorities both in the rural and urban areas. The local authorities have more direct contact with the people but their performance has been poor for several reasons most of which are well-known and documented to warrant repetition. State level organisations like PHEDs and Water Supply and Sanitation Boards are increasingly active in providing the basic services of water supply and sanitation. PHEDs and Boards have the expertise in engineering and technology. Low cost sanitation is not however entirely engineering or technology but is more a social programme reaching out to millions of households. The realities of programme implementation and the adequacies and inadequacies of different agencies involved in the sanitation sector should be recognised and counter-measures adopted if efficient sanitation programmes are to be launched on a mass scale. A division of responsibilities between the agencies involved - Local bodies, the State Directorates of Local Bodies, PHEDs/Boards - would be an obvious solution but then this pattern throws up the often intractable problem of coordinated and synchronised action on the part of agencies which are independent and operating under their own hierarchies and culture. More significantly, since LCS is basically a people's programme and requires effective and sustained communication with the people to change

age-old attitudes, a new area of expertise - promotion, project support communications - is crucial. It is doubtful whether any of these agencies possess the expertise needed in this area. Voluntary organisations have gained expertise in this area to a great extent but involving them in this aspect of a composite programme adds to the list of implementing agencies and further complicates the already serious coordination and management problems.

4.10 Low cost sanitation has perhaps already successfully surmounted the technological problem - the technology has been researched, tested and proved. Extension of the technology requires political commitment and higher Plan priorities, backed by competent and sensitive institutional and management mechanisms; these seem to hold the key to translate the technology into efficient and successful field programmes.

4.7 An equally important aspect of the programme will be the financial arrangements. To what extent can contributions from the people be expected? It is likely that the better-off people can contribute but then most of them are prone to have latrine facilities already. The ability to contribute of the poorer groups consequently assumes importance. Surveys in a densely populated and relatively more "latrine-conscious" State like Kerala show that the poor groups can contribute in the form of monthly instalments not exceeding Rs.10/-. An effective machinery for administration of loans and grants to the people and for recovery of small amounts in frequent instalments then needs to be installed. This raises the issue whether the local bodies or PHED can effect the recoveries and are adequately equipped for this operation.

4.8 In-kind contribution like offer of voluntary labour is considered possible from the poorer groups. But this again raises the issue of coordination and synchronised action. The experience of Shramdan in several States is anything but satisfactory. Besides, Shramdan complicates efforts at maintaining quality.

4.9 Providing legal backing to low cost sanitation schemes may not be much of a hurdle. Laws, rules and byelaws could be enacted and have been done in many States. The major hurdle, however, is enforcement.