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Sanitation in Developing Countries

**Proceedings of a workshop on training held in Lobatse,
Botswana, 14-20 August 1980**



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Training Implications within the Sanitation Sector in Tanzania

H.W. Rutachunzibwa¹

In an attempt to meet the goals of the United Nations Drinking Water and Sanitation Decade (1981-1990), Tanzania has committed itself to providing safe sanitation systems and hygienic education to the entire population by 1990. This commitment arises from the incidence of water-based diseases, mostly sewerage oriented, which has resulted in several thousand deaths due to cholera since 1974. The Tanzanian government has set up the Sewerage and Drainage Division within the Ministry of Lands, Housing and Urban Development (ARDHI Ministry) to ensure the implementation of this commitment. This calls for an improved and well-maintained nonwaterborne sewerage system by 1990 that the majority of the population can afford. This undertaking requires highly trained personnel, and a survey of the existing trained manpower reveals that only two public health engineers and a few health officers are available. Currently, Tanzania does not have suitable facilities to train these cadres. In order to satisfy the needs of the 17 million people living in Tanzania (2 million in urban and 15 million in rural areas), Tanzania must undertake a serious training program to meet its projected manpower requirements for 1981-1990, which consist of 350 public health engineers, 240 health officers, 660 extension officers, and 110 health educators.

Training programs, practices, and techniques relevant to these needs, therefore, must be planned and implemented. Care

must be taken in the design of these programs to ensure their relevance to the country's policies and to the particular circumstances of the country. In pursuance of this, closer links should be built up through the training process between the training institutions and the public agencies concerned with sanitation programs. All training should include the use of effective teaching methods such as case studies, sanitation techniques, and the like. This broadly covers professional training, training for middle management and supervisors, technicians, extension staff, trainers, in-service training seminars, and workshops.

Training Professionals

The purpose of training this cadre is to ensure implementation of sanitation projects in the ARDHI Ministry by 1990, which is currently being undertaken by expatriate consultants. This involves training of civil/public health engineers. It is estimated that 50 students must train every year for the next 4 years in a 4 year diploma/degree course. Presently, there are no adequate training facilities in Tanzania. To alleviate this problem it is proposed that a new Department of Public Health Engineering be set up at the ARDHI Institute, Dar es Salaam, whereby candidates who have completed Form 6 would undergo a 3-4 year diploma course. The initial enrollment would be 25 in 1981-1982 and by the year 1990-1991 it will have produced about 100 graduates. In addition to this, Tanzania

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should look into the training of this cadre outside of the country. The Ministry of Water, Energy, and Minerals (MAJI) has managed to train 100 civil engineers in India at the University of Roorkee through external funding at a cost of about TSh 320 000 per student for a period of 4 years. The ARDHI Ministry could follow a similar course of action. Alternatively, the University of Dar es Salaam or the Technical College of Dar es Salaam could be asked to undertake a postgraduate diploma course in public health engineering. However, this proposal depends upon the availability of funds and civil engineers.

Training of Middle Management Staff

This includes training of health officers and assistant health officers. Up to this time, it has been the prerogative of the Ministry of Health (AFYA Ministry) to train this cadre for 3 years, but in view of the limited training facilities, the annual enrollment has been restricted to 25 students. However, extension of this program has been made possible by introducing an upgrading course for health assistants to the status of health officers at Tanga. This is a 2 year program and the annual enrollment is 20 students. In addition, the Faculty of Medicine, Dar es Salaam, could be asked to consider expanding the existing facilities to double the enrollment to 50. Other training facilities could be sought from outside Tanzania by external funding from bilateral agencies. International health education centres such as Ibadan University, Nigeria, have been identified as suitable for training this cadre. International organizations such as the Swedish International Authority (SIDA), United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Development Programme (UNDP), Norwegian Agency for International Development (NORAD), and the Danish International Development Agency (DANIDA) should be requested to help in this undertaking.

Training of Extension Officers

The sanitation program will fail without the support of an extension team. This will provide the link between the town and rural councils, the party, and the beneficiaries/owners. The extension team will help in promoting the choo kizuri scheme/campaign by liaising with: (1) the beneficiaries/owners in order to assist the households in evaluating their existing sanitary disposal systems and where necessary identifying the approach the owners should take to construct improved ventilated pit latrines; (2) the government financial body to explore the possibility of a loan to help the owners if they so desire; (3) the town councils to register the owners and obtain for the owners improved designs suitable for the particular site conditions; (4) the fundis (artisans) who will undertake the construction of choo kizuri; (5) the town council building inspectors who will approve the construction; (6) the party members and the ten cell leaders who will ensure that the scheme is suitably promoted and implemented in their district; and (7) the Ministry of Education and AFYA to ensure that a health education program is implemented in their district.

The number of health extension officers required by the ARDHI Ministry will be of the order of 120 for urban and 540 for rural areas. Training of this cadre would be on-the-job training and refresher courses. Form 6 leavers (who failed to qualify for university entry) would be suitable for this training. They should be trained by health officers and health educators to understand their liaison role in the sanitation program.

Health Educators

The role of a health educator should be to train schoolteachers, lecturers at adult education centres, and others responsible for disseminating information relating to sanitation, and to restructure and review the school curricula from time to time. Training of this cadre should be under the jurisdiction of the Ministry of National Education

(ELIMU Ministry). A health officer with several years experience would undertake a diploma course in health education at Tanga Medical Training Centre, established for this purpose. The health officer will be assigned to a teacher training college or ELIMU and will be required to train teachers for primary schools and also to see that the knowledge gained is passed on to schoolchildren and eventually disseminated to the masses.

Urban and Rural Fundis

The role of the fundis in the sanitation sector is the construction of pit latrines. This cadre should be trained by vocational training centres as a part of the program in the building sector, with particular emphasis on pit latrine construction. Upon completion of the program, a fundi should be registered as a pit latrine builder and be responsible to the health officer, who should ensure that the standards are maintained. Failure to maintain the required standards should mean deregistration.

In-Service Training Seminars and Workshops

If the implementation of sanitation programs is to be properly understood, seminars and workshops for all categories of personnel from the managerial level to the extension worker are essential. There is also a need to hold seminars and workshops to bring together management officials and policy makers and other community leaders in order to explain fully any points which may not be understood by any group and to create a better working climate.

Technical Assistance

In order to improve the quality of life of all mankind, more developed countries should provide assistance to less developed countries, i.e., transfer of appropriate technologies to these countries by providing skilled personnel as teachers. These should

be properly oriented and provided with counterpart staff. Funds should be made available with which to set up training institutions. However, developing countries should not depend entirely on developed countries. They should pull together their own scarce resources and establish regional training centres and other institutions.

School Curricula

School leavers in developing countries constitute a significant segment of the community. Most of these are absorbed readily in productive jobs and occupations. School curricula should be carefully re-designed so that a student leaving school is equipped with the appropriate knowledge and skill required to play a part in society, by disseminating the acquired information to the people.

Use of Public Communication Media

Health education should also be made available to the people through mass media. Programs for radio and television should be introduced. Government and nongovernment publications and posters should also be employed to realize this end. In this connection extension officers should also play an important role, as teachers in this kind of education, by using films and other audiovisual aids. Because of their proximity to the people at the grass-roots level, they should be fully involved in the training process.

Manuals of Guidance

There should be manuals of guidance for councillors and community leaders in the field of sanitation. These should be produced and reviewed from time to time in the light of low-cost sanitation recommendations.

Conclusions

By implementing these training proposals during the Water and Sanitation Decade, it is anticipated that: (1) the majority of the people will be provided with good sanitation facilities by the year 1990; (2) water-based diseases, such as hookworm, typhoid,

dysentery, and cholera, will be greatly reduced; (3) well-treated and well-prepared excreta will be utilized as manure by peasant farmers; (4) biogas produced from excreta will be utilized to provide energy for households and for small-scale industries; and (5) average life expectation of the people will be increased.