

MAXIMIZING THE BENEFITS FROM WATER AND ENVIRONMENTAL SANITATION

## Improved Sanitation Training

*A. Rugumayo, P. Nakiboneka. and J. Otai., Uganda*

---

*In Uganda, technical personnel in the Sanitation Sector experience challenges that are not adequately catered for in their training. The situation is aggravated by the fact that the training syllabi is adopted from the colonial times and does not in many cases cater for the local conditions. For the efficient functioning and service delivery in the sanitation sector it is important that technical personnel are adequately trained to handle challenges in the field. The available training options and some of the challenges faced are discussed and proposed recommendations made. Through interviewing some of the technical personnel in the sector, it was reported that some aspects of the training were inadequate and there was need for improvement. It is recommended that training of the technical personnel is updated to suit the prevailing needs and appropriate methodologies of training should be used. This would contribute to improvement in the delivery of services in the Sanitation Sector.*

---

### Background

There are several stakeholders involved in sanitation related activities in the country. These include Health Inspectors/ Environmental Health officers, Community Development Officers and Engineers among others. Training for sanitation is carried out at the Schools of Hygiene, Training Institutes and Universities among others. This paper focuses on training for sanitation in the Health sector. Until recently the health training schools were under the Ministry of Health. This changed and the health training schools fall under the Ministry of Education and Sports. Analysis of the current approaches in training and suggestions for improvement are made.

### Introduction

Sanitation related activities in the Ministry of Health are undertaken by Health Inspectors and Health Assistants (Environmental Health Officers) and Engineers. The Environmental Health officers handle promotional aspects while the Engineers handle infrastructure development for sanitation.

Training of the above technical personnel was reviewed and the methodology of review was mainly through interview of the technical personnel.

### Current training approaches

Some Environmental Health Officers and Engineers handling sanitation in the Ministry of Health were interviewed and the following aspects of the training that they underwent were used to analyse the relevance of the training to the work that was carried out in the sanitation sector.

- Learning content
- Mode of instruction

- Period of instruction
- Location of training

### Training of Environmental Health Officers

Health inspectors are trained at the Schools of Hygiene in the country. Qualification either as a Health Assistant or a Health Inspector depends on the training that one receives. The qualifications that can be obtained lead to the award of the following;

- Certificate
- Diploma
- Degree

### Certificate

A certificate is awarded by the Ministry of Health after the completion of a two year course. People who receive certificates are designated as Health Assistant and work at Health Center III's.

### Diploma

The course is three years long and on completion, it leads to the award of a Diploma in Environmental Health Science. The diploma course is available in the local universities such as Makerere University. The training focuses on Environmental Health, Environmental Engineering, Social Models and Technology Developments. The students carry out both practicals in rural and urban practicals, where the rural practicals take two months and the urban practicals take three months. In the practical training the students camp in the field and carry out case studies of issues that affect the community.

## Degree

The degree course takes 4 years. The degree course is a relatively new course and is offered at the Institute of Public Health in Mulago Hospital under Makerere University.

## Training of Engineers

The Engineering degree is a four year course and is composed of three broad areas of study; Water Resource Engineering, Public Health Engineering and Structural Engineering. Public Health Engineering is relevant to the Sanitation Sector.

Instruction is carried out by theoretical lectures and practical work (both field and laboratory work). Laboratory work and field work is carried out throughout the course of the semester depending on the course unit being studied. It should be noted that the students are required to carry out an elaborate practical training programme in the recess terms. At the end of the first year the students carry out training which is based in the university and in the subsequent years the students are attached to Engineering firms where they acquire valuable practical knowledge and experience. In the third and fourth year, the students are required to carry out a practical project that would provide a solution to an engineering problem.

The assessment of the students is based on assignments, coursework and examinations, where the final examination carries a weight of 60% of the total mark that the student scores while the remaining percentage is composed of the coursework. The weighting of the final mark scored by the student enables the students to progressively acquire both practical and theoretical knowledge.

## Analysis of the Training

Most of the challenges experienced in the training of engineers are similar to those that were experienced in the training of Environmental Health Officers. The analysis will therefore address the issues concurrently.

### i) Learning content

The feedback from technical personnel interviewed revealed that the learning content of the course(s) is detailed and quite appreciable. It involves several aspects in the field of water and sanitation. The aspects on water and sanitation are relevant to the required experience in the sector.

- However, the mechanism of updating the content is either not in place or not well organized. It tends to be subjective, depending on who is in charge (lecturer or instructor).
- The reference material in the libraries is inadequate for the number of students. In some cases it is either not available at all or outdated. This therefore limits the student's access to the full content of the course.
- It was also reported that most of the course content was theoretical and not practiced in the day to day execution of their daily tasks.
- In the training of the health inspectors, it was also reported that the course content excluded research techniques

that are necessary in the execution of basic operational research or in undertaking needs assessments. In addition the training did not fully assess the capability of the students since it was based on the performance in the final examination.

- It was also reported that the training in some aspects was not tailored for local settings. For example, in the engineering course there was a problem of the content on sanitation related designs not being appropriate for the local setting. The emphasis was on advanced waste treatment which is not applicable for most of the local setting. This was also evident in the use of foreign design standards that may not cater for the local conditions.

### ii) Mode of instruction

The mode of instruction is mainly by way of dictation of notes and explanation of key issues. In some cases, visual aids such as slide presentations and power point presentations are used. These however, are limited in view of the limited facilities at the institutions.

In other cases notes are issued out or references given for the topic at hand for further follow-up. Training on technical aspects is best carried out using illustrations or demonstrations and therefore this is a significant area to note.

The resource centers were inadequate; this includes laboratories, libraries and other demonstration rooms that are used for practical exercises. They lack materials, tools, equipment and books in case of libraries.

The training is usually carried out by highly qualified lecturers. However it is also common practice to have fresh graduates of the same programme in charge of lectures but with no further training, experience or even teaching skills. This limits the output of knowledge and skills to the students.

### iii) Period of instruction

It was reported that that the duration of the certificate and the diploma courses was long in view of similar programmes elsewhere. This could be restructured to take a shorter time.

There was also dissatisfaction on the amount of time that was spent on the practical bit of the course. Most of the work was carried out in the lecture room and the time allocated to practical work was reported to be limited. For the health inspectors course 5 months were dedicated to practicals (about 14% of time) while the engineer's course allows for months (about of the time).

### iv) Location of training

Most of the training is theoretical and carried out inside the lecture rooms. Practical work for the engineer's course is carried out during the industrial training period. It was reported that over a long period of time the Engineering training sector has faced a problem whereby established engineering firms and companies do not absorb students during the industrial training period. The failure of

engineering firms to absorb students for practical training hampers the training process of the Engineering students. In addition the training is not standardized and is therefore subjective depending on where the training is done.

The field training does not also contribute much to the final assessment of the student. Laboratory work is carried out as part of the main course but also contributes less than 20% of the course.

Practical training is also hampered by inadequate funding.

## Conclusions

Based on the above, it is noted that the training is adequate in some aspects. However there is need for improvement. This could be done through a more detailed training needs analysis.

## Recommendations

- The Health inspectors training should include equipping them with skills that will impart demand responsiveness in communities.
- The course curriculum should be reoriented to meet the meet local needs. The content of the courses should be updated to address existing challenges. New approaches, new technical options, diversification of scope to address local needs.
- The learning content for the Health inspector course should include basic research techniques.
- The trainers should be of a higher level of training than the people they are training. Tutors' courses also helpful for the trainers.
- The capacity of the resource centers in the learning institutions should be upgraded by retooling, restocking, exclusion of outdated material, updating of reference material and provision of internet links
- Participatory training skills should be promoted as they yield good results.

- More time should be allocated to the practical sessions of training than is currently the case. The practical training of engineers should be better streamlined.
- The training institutions should re-equip laboratories and demonstration units as appropriate.
- The training institutions require more funding to support practical training, field visits, technical tours etc.
- The stakeholders in the sanitation sector should promote continuous professional development.
- Continuous assessment of students is recommended for better testing of learning abilities and therefore better outputs in the field.
- The institutional structure at the different levels should be reviewed so as to raise the standards at the different levels.
- Funding mechanisms for the technical personnel especially the Environmental Health officers should be reviewed and streamlined for better results.

---

## Contact address

Eng. Dr. Albert Rugumayo  
Visiting Lecturer, Department of Civil Engineering,  
Makerere University  
rugumayo@energy.go.ug

Priscilla Nakiboneka,  
Sanitary Engineer, Ministry of Health  
pnakiboneka@yahoo.co.uk

Justin Otai  
Senior Environmental Health Officer, Ministry of Health.

---