



Skills and management training for sustainability

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NATIONAL WATER AND SEWERAGE CORPORATION (NWSC) provides water and sewerage services to over 600,000 people in nine urban areas throughout Uganda including Kampala, the capital. The NWSC workforce totals 1,700 people covering all levels from senior management to unskilled labour. The distribution of the workforce is typical of most public utilities and is shown in Figure 1.

Since 1984 NWSC has embarked on an expansion programme to reinforce and extend existing services. The capital works programme has been accompanied by corresponding programmes of institutional development and legal reform. In December 1992 Mott MacDonald, who had previously acted as consultant to NWSC on legal reform, were awarded a contract to prepare and manage a training programme for NWSC for the five year period 1993 to 1997. The programme will provide training for all levels of the workforce including senior management.

Over the five years Mott MacDonald will provide 90 man months of specialist input. This includes a resident Training Manager and a team of seven visiting specialists with a mix of expertise in project administration, finance, management, water quality, water and sewerage treatment, electrical and mechanical maintenance, instrumentation, water distribution and sewerage collection systems.

The programme has two main objectives. Firstly, to develop technical and management skills within NWSC so that the capital programmes currently being implemented will be sustainable. Secondly, to develop a training capacity within NWSC that will continue to meet the training and skills development needs of the Corporation.

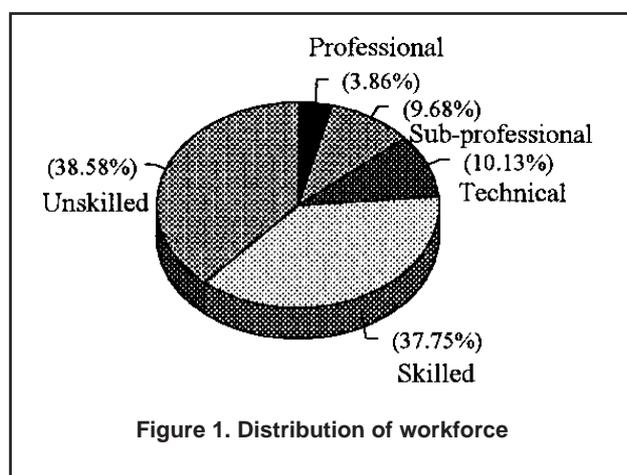


Figure 1. Distribution of workforce

Approach

The approach used in developing a training programme for NWSC broadly followed that presented by Carefoot and Gibson in *Human Resources Handbook* published in 1984 as a contribution to the International Drinking Water and Sanitation decade.

A key step in the process is the identification of training needs. Contractual time constraints prevented a full agenda of manpower analysis, performance deficiency analysis and task analysis as suggested by Carefoot to determine where performance deficiencies resulted from lack of skills or knowledge rather than other environmental or attitudinal factors. To overcome these constraints a dual approach using interviews and workshop sessions to identify areas of poor performance was adopted.

This ensured that training proposals were not prepared in isolation of other factors contributing to poor performance.

Through their involvement in donor funded projects, NWSC managers were well acquainted with the technique of Objectives Oriented Project Planning (OOPP). To build on this strength an OOPP workshop was held to identify the causes of poor performance within NWSC. The workshop was attended by senior and middle managers and through the OOPP process the group identified *Insufficient Utilisation of Human Resources* as the core problem within NWSC. Four major causes contributing to the core problem were identified as:

- staff inadequately skilled;
- inadequate management;
- inadequate grading and testing;
- unplanned allocation of resources.

It was clear from the results of the OOPP workshop that there was a need for skills and management training to accompany the on-going programmes of institutional development and legal reform if the capital works being constructed by NWSC were to be sustainable.

To identify areas where training was required an extensive series of interviews with selected supervisors and managers was conducted. The face to face interviews were supplemented with questionnaires. The interviews were carried out by members of the consultant's team, each a specialist in his own field, and through interaction with the interviewee it was possible to identify performance shortfalls that could be corrected through training.

The interviews and questionnaires were considered adequate to identify skills and knowledge training needs for

functionalists. The interview process itself contributed to an understanding of the areas where management skills were lacking or needed to be reinforced.

The results of the training needs analysis showed that there was a need for training in three broad areas:

- skills training;
- professional training;
- management training.

To meet these needs several approaches were adopted.

Skills training

The skills required within NWSC reflect those common to all water utilities. These skills cover a wide range of disciplines ranging from plumbing and mains laying to administration and bookkeeping and include specialised support services such as chemistry and public relations. The workforce is also representative of that found elsewhere in that most skilled workers are adequately qualified in their functional fields but have progressed to supervisory and administrative positions for which they are ill equipped.

To correct these deficiencies two approaches were adopted: to develop the present in-house training capacity of NWSC and to use local training institutions. Where large numbers were to be trained or training needs were specific to NWSC, in-house courses were adopted as being the most suitable vehicle. Where numbers to be trained were small and the skills were not peculiar to NWSC then local institutions were seen as appropriate.

Separate in-house training programmes were prepared to cover the main groupings of:

- Finance, accounting, audit and administration;
- operations and maintenance - supervisors;
- Operations and maintenance - artisans;
- Support services including laboratory, and workshop services.

Each programme included a progressive plan of skills training for a five year period and a detailed plan of in-house courses for the first twelve months. Course outlines were developed for nearly 50 short courses and were categorised into seven main groups:

- Treatment
- Pipeline systems
- Plant operations and maintenance
- Supervisory skills
- Customer relations
- Computer applications
- Finance, accounting and audit

Previous training programmes at NWSC had concentrated on basic technical skills and a core group of trainers and basic facilities were available as a foundation from which to develop a well equipped and well staffed Training Centre. The core group of trainers already had basic skills in plumbing and mains laying, distribution networks including waste control, water and waste water treatment, and mechanical and electrical maintenance. A Training

Manager was recruited to provide administrative and managerial support and a qualified accountant was assigned to the Centre to provide support for finance training. Line staff from NWSC and external trainers from local institutions or professional firms are hired to augment the teaching staff when the permanent training staff do not have the skills required for specific courses.

Former site offices were converted to provide offices for trainers and administrative support staff and a new building comprising two lecture rooms, a Resource Centre, store rooms and toilet facilities was constructed. A multipurpose block was constructed shortly afterwards to provide additional space and canteen facilities. The Resource Centre has recently been equipped with a four station computer network and will shortly be stocked with a comprehensive reference library.

Four Demonstration Units will shortly be installed on the site for use in training programmes. The four units are:

- water pipe network;
- water treatment unit;
- pumping unit;
- pipe flow unit.

In the first year of the in-house programme 33 in-house courses were run at the Training Centre and at NWSC Area offices. Courses varied in duration from three to five days and were attended by 435 participants. This represents 1,743 days of in-house training for NWSC personnel. Subsequent years of the in-house programme will continue at the same level of output.

The in-house programme of skills training was supplemented by the attendance of 29 employees at local training institutions offering courses of various durations covering such topics as car mechanics, project planning, high voltage supply, electronics, welding and fabrication.

Professional training

Professional training is offered to selected NWSC staff to enable them to gain recognised professional qualifications and to develop as individuals. Professional training is provided in two ways: through enrolment in full time courses of study at recognised institutions either in-country or across border and by participation in short course, seminars and workshops organised by various bodies.

Over the five year project period it is anticipated that eight middle managers with first degrees will be assisted to gain professional qualifications or higher degrees. As the core activity of NWSC is technical the majority of higher degrees will be in engineering with a management component. Other degrees will include such topics as Human Resources and Business Administration while accountants will be enrolled in courses leading to chartered status.

Short term professional training relies heavily on courses offered by the Eastern and Southern Africa Management Institute (ESAMI) who offer two to five week courses either at their base in Arusha or in other countries in the region. ESAMI offers a wide range of courses designed to assist

executives to innovate and manage change. Other institutions offering courses identified in the short term professional programme include Crown Agents, WEDC at Loughborough University, Ghana Institute of Public Administration and Harvard University. In the first year of the programme 19 senior and middle managers participated in short term professional training at these institutions.

Management training

Previous training programmes carried out within NWSC had concentrated on technical skills and little attention had been paid to management training. As a result, managers were technically competent in their chosen field but were poorly equipped for the role of manager. As the performance of NWSC is dependent on the individual and collective performance of its managers a management development programme focusing on understanding and applying modern management techniques was developed.

For management training to be successful and sustainable those in the management team have to be committed to self development. The success of the management development programme is, therefore, largely dependent on the commitment and action of the managers themselves. The programme focuses on self development and, through a series of twice yearly seminars, aims to enhance the knowledge, skills and attitudes of the management teams. Participants are encouraged to make use of self learning facilities in the resource centre to reinforce their knowledge in the periods between seminars.

Two series of seminars are provided - one for senior managers and another for middle managers. The seminars for senior managers include such topics as:

- institutional development;
- corporate planning;
- commercial orientation;
- management information systems;
- leadership;
- organisation behaviour;
- customer orientation.

The same topics are included in the seminars for middle managers but are covered in less detail. In addition the seminars for middle managers include:

- role of a manager;
- organisational goals;
- finance and budgeting;
- communications skills;
- staff development.

The techniques used in the seminars include formal teaching, brain storming, video presentations and case studies. With the commissioning of the computer network at the Training Centre practical sessions using spreadsheets to analyse and manage data and word processing to present management information have been added to the methods employed. To encourage interaction and to foster a common culture, joint sessions are held regularly with senior and middle managers.

The response to the seminars conducted so far has been good. Initially, the reaction of nearly all middle managers to most problems was that "management should do something". A change of attitude is noticeable as middle managers have become more aware of possible solutions and of techniques that they themselves can utilise towards problem solving.

Results

The results achieved by training activities are often difficult to evaluate. Hamblin has suggested that there are five levels at which evaluation can take place:

- Reactions.
- Learning.
- Job behaviour.
- Organisation.
- Ultimate value.

Evaluation becomes progressively more difficult at each level as factors other than training contribute to any change. At NWSC we routinely measure Reaction at the end of every in-house course and, where appropriate, measure Learning through informal test papers. An attempt is being made to link measurement of changes in Job Behaviour to the newly revised Performance Appraisal System in use at NWSC. Measures of Organisation and Ultimate Value are carried out in the management seminars by developing and monitoring financial and other performance indicators.

Conflicts between management and culture

Most modern management techniques have been developed in the western industrialised nations. They, therefore, reflect the culture and practices of a group that has little in common with those in less industrialised nations. It is tempting to attempt to transfer these techniques and force them to fit into an environment for which they were not intended. This undoubtedly leads to discord when these techniques run counter to cultural practices. An obvious example is the principle of appointing and promoting personnel solely on the basis of qualifications and experience where in other cultures patronage is the accepted means of advancement. These conflicts should be respected and acknowledged. If we were to travel back to the Europe of last century we would find similar practices in force.

The aim of the NWSC training programmes is to provide the management team and the labour force with the knowledge and skills they need to run an efficient and effective public utility. They themselves are free to choose which techniques are acceptable and applicable to their culture and employ them accordingly.

References

- Carefoot, N and Gibson, H. *Human Resources Development Handbook*, WHO, Geneva 1984
 Hamblin, A. C. *Evaluation and Control of Training*, McGraw-Hill, 1974