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TOWARDS THE MILLENNIUM DEVELOPMENT GOALS

## Training needs for successful development of irrigation scheme

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DEVELOPING THE WATER resources potential of a society is of paramount importance for any meaningful strategy for sustainable development. The most critical and essential aspect is the effective management of the various water resources projects. With food security occupying the centre stage of government's attention in Nigeria, irrigation has been recognized as an extremely important component of the economic agricultural development. That was the reason for the tremendous investments in large-scale irrigation projects in the 1970s and 1980s. In spite of the huge investment, the performances of most of the irrigation schemes have been below expectation (Lattimore, 1988; Adeniji, 2001). The low performance of large-scale irrigation projects is reflected in the shortfall between the achievement and target set out in the National Development Plan (Adams, 1991). Absence of enduring national irrigation development plan, frequent policy changes and lack of manpower planning and systematic training programmes has been the root cause of problems to these schemes (JICA, 1995; Adeniji, 2001).

That not with standing, there are quite considerable potentials within existing irrigation projects with the employment of appropriate management strategies for their sustainable and effective utilization. However, improved and effective management cannot be achieved without training and re-training those categories of people who are directly or indirectly involved in the management of the irrigation schemes.

It is noteworthy that an essential facet of irrigated agriculture is manpower development and training. Training should be seen as a continuous process since the development of knowledge is not static and new systems and techniques are continuously evolving. Thus, staff training and re-training should form part of the culture of an effective organization, especially with the introduction of participatory approach to management of irrigation systems (Adewumi, 1990). This paper recommends some strategies towards development of a functional Manpower training Program for irrigation schemes in Nigeria.

### Methodology

The study was conducted in collaboration with the Centre for Management and Development (CMD), Lagos. Eleven (11) River Basin Development Authorities (RBDAs) in the country were used for the study. The study appraised the training needs of the RBDAs in the various areas of the

water industry. A set of three questionnaires were designed and administered to all the 11 RBDAs as follows:

- Questionnaire A for chief executives
- Questionnaire B for Head of department
- Questionnaire C for individual staff

Out of the eleven RBDAs, only 5 responded by completing and returning questionnaires A,B, and C while 2 RBDAs completed and returned questionnaires A and B. The study analysed the returned questionnaires and determined the training needs of each R.B.D.A based on the information supplied. The parameters examined included; % staff strength, % support staff, % professional staff, % of staff trained from 1995 to 2000, and type of training required (organizational, occupational and for research and development).

Each of the three sets of questionnaires was analysed separately. The information gathered were centred on grade level, designation, department, job rotation, major functions, training and workshop/seminars attended and major problem encountered on job performance. The training needs from these analyses were then determined.

### Findings and discussion

From the results of the study, it was observed that:-

- a) The RBDAs did not have a Human Resource Development Unit
- b) The RBDAs were short-staffed in most professional cadre
- c) There was no adequate training in the RBDAs
- d) All the RBDAs had similar performance problems
- e) Most RBDAs depended 100% on Federal Government funding
- f) The training needs were similar in almost all the 7 RBDAs that responded.

It can be observed from the results (Table 1) that, generally, all the categories of staff in the RBDAs were seldom given the necessary training and retraining for sustainable management of the complex and large-scale irrigation projects in the country. This is despite the fact that improved and effective water management cannot be achieved without continuous training of all categories of people directly or indirectly involved in the management of the irrigation schemes.

## Suggested Training Programs

Irrigation schemes need to be sufficiently elevated in terms of manpower development and training in order to achieve sustainable management of the schemes. According to Adewumi (1990), manpower development and training required for sustainable irrigation development is mostly for two categories of the stakeholders: the scheme officials and the farmers. The areas of training include the following:

### Training Needs For Scheme Officials

In order for scheme officials to perform their primary functions effectively, they require a variety of training. Five categories of training have been identified, and may be required to be provided to the scheme officials, in the following relevant areas;

#### Extension Services Agents Training

This area of training deals with communication methods involved in technology transfer to farmers. It covers such areas as rural sociology, the use of audio-visuals, planning and administration of extension programs. Appreciable capacity building in the area of information system development and database will be useful particularly in making assessment of the physical irrigation network and clear channels of communication between the farmer and

the project staff. The trainees will also need to be exposed to new farming systems, developed techniques, environmental impacts of irrigation activities, new farm inputs, etc.

#### Technology Transfer Training

This will include knowledge of new technologies and how they works. Such training will equip the project staff, particularly technicians and extension agents, with what to transfer to the farmers. Technician training will cover the upgrading of technical skills of the staff in operation and maintenance (O & M) and agricultural related topics. Exchange of experience and technological information with other institutions, both national and international, is recommended.

#### Project Managers Training

This type of training is meant to inculcate in the managers the art and science of management. This will provide skills in areas of planning, controlling, organizing, delegating, directing, communication, etc. and also enable the managers to co-ordinate human and other resource effectively. In addition, they will be exposed to environmental impacts of the various activities in the schemes, how to minimize the negative impacts and ameliorate the degradations that have already occurred.

**Table 1: Findings on the River Basins Training Needs**

S/N	RBDA	Staff Strength	% Support Staff	% Professional Staff	% of Staff Trained Since 1995–2000	Training's Required*		
						Organizational	Occupational	Research & Development
1	Chad Basin	454	64	36	15	1 to 3	1,3 to 10	1 to 6
2	Ogun-Oshun	149	79	21	30	1 to 3	1 to 10	1 to 6
3	Upper-Benue	255	64	36	14	1 to 3	1 to 10	1 to 6
4	Cross-River	200	–	–	14	1 to 3	2 to 9, 11	1 to 6
5	Sokoto-Rima	589	69	31	20	1 to 3	1,2,4, 6 to 12	1 to 6
6	Lower-Benue	329	75	25	8	1 to 3	1 to 10	1 to 6
7	Lower-Niger	243	–	–	25	1 to 3	1,2,5,6,8,9,12 to 14	1 to 6

Source: Report of NWRI Committee on Training Needs Analysis for RBDAs

#### \* Key to Training Required:

Organizational	Occupational	Research & Development
1. Management/Leadership course for top management 2. Management/Leadership and industrial attachment for intermediate staff	1. Practical oriented course for junior staff Water engineering 2. Mechanical engineering 3. Electrical engineering/technology 4. Chemical engineering/technology 5. Irrigation engineering/technology 6. Drilling technology 7. Hydrology & hydrogeology 8. Computer science 9. Plant/pump operation 10. Extension services 11. Agricultural engineering 12. Soil science 13. Surveying 14. Agronomy	1. Project feasibility studies 2. Project identification 3. Project monitoring evaluation and review 4. Water demand survey and analysis 5. Hydrometeorological studies 6. Dam catchment studies

### **Training For Planners And Evaluators**

This type of training is specifically for people who do the project planning and evaluation. This is to enable them monitor and report progress, and at the same time make realistic assumptions and proposals, so that what is put into the plans is relevant and achievable.

### **Entrepreneurial Development Training**

This training area should focus on equipping the projects staff with the skill and “technical-know-how” required in teaching and giving management advice to farmers. This is because farmers may not, on their own, be able to use quantitative decision-making tools such as carrying out farm business analysis. But this can be done by the extension agents and make the results available to them. This training should be in the form of Training of Trainers (TOT).

### **Training Needs For Farmers**

The farmers need a lot of education about the process of development of the irrigation projects and also training on how to operate the system for their benefits and the overall development of their society. In fact, they should be fully involved in the process of making decisions so that the choice of alternatives will not appear as being forced on them and therefore resisted. The areas of training relevant to farmers could include the following;

#### **Rural Development Awareness Training**

This involves getting rural people (farmers) appreciate their poor conditions of living and preparing their minds to receiving new innovations that will better their conditions. The training will also sensitize the farmers on the various ways and means to achieve better quality of life.

#### **Functional Literacy Training**

This area of training should focus on getting the farmers to know how to read and write. This will enable them use written channels of communication thereby making them more versatile and able to learn about other places and things without having to make physical contact.

#### **Entrepreneurial Development Training**

This type of training will make the farmers appreciate that farming needs not be only a subsistence way of life but it is also a business like any other business. They will be exposed to investment strategies such as saving schemes, access to credit facilities, formation and running of user groups and co-operatives, rural banking, off-farm economic activities, etc.

#### **Training for Management of Infrastructures**

This area of training will enable farmers appreciate what is involved in putting up the infrastructures and how to use and take proper care of them. With the introduction of participatory irrigation management (PIM) in the public sector irrigation schemes in Nigeria, this training will essentially focus on PIM approaches. Farmers would be taught the peculiarity of PIM. The training should include among others; strengthening

partnership on O & M of irrigation systems, canal maintenance, system management, formation and organisation of Water Users Associations (WUAs), billing and collection of water rate charges, different irrigation methods and their suitability under different conditions, frequency of irrigation, conservation techniques, etc. This is critical for effective operation and maintenance (O & M) of the facilities that is a pre-requisite for sustainable management of the schemes.

If given training in these and other relevant areas, farmers will develop the right attitude to the projects, and the success of the schemes will be highly enhanced.

### **Plan of Execution for Manpower Development and Training**

The broad objective of training component for institutional development is to develop a strategy to effectively address issues relating to training. The first step towards the realization of the objective is to institute a manpower and training committee (MTC) on training needs for sustainable development and management of irrigation schemes. The specific objectives are to;

- a) establish Human Resources Development Unit in each of the irrigation scheme;
- b) prepare a manpower development and training strategy for sustainable management of irrigation schemes in the country;
- c) carry out periodic manpower audit and training needs analysis in all participating the RBDAs and ADPs;
- d) establish a Human Resources Development Unit at NWRI to co-ordinate the human resources development component of institutional strengthening initiatives of the various irrigation projects and harmonize all available local training resources in the irrigation sub-sector;
- e) develop a working training scheme for project staff to comprise of graduate studies, short course programs (induction courses, in-house training, on-the-job training, satellite training center programs and management training programs), functional and applied research;
- f) liaise with multi and bilateral agencies for technical assistance in training programs aimed at adapting appropriate and proven technologies from donor countries;
- g) develop procedures for effective monitoring and accreditation of training programs at various levels as well as evaluating the performances of the trained staff.

### **Conclusion**

The need for manpower development and training for institutional development cannot be overemphasized. The main requirements for training are for the scheme officials and the farmers. The country had invested huge amount of money in irrigation development that need not to be wasted.

It is therefore very important that irrigation scheme officials and farmers be trained for sustainable agricultural

development as well as for effective operations and maintenance of existing irrigation projects. This training will however, lead to a change and upgrading of competence and potentials in terms of awareness, knowledge, skills, attitudes, etc. which predispose the trainees to greater efficiencies. Similarly, both project users and service provider will be made to operate towards a common goal of transforming irrigation schemes into positively sustainable enterprises.

The Federal and States Ministries of Water Resources, Agriculture and Environment as well as other government and non-governmental organizations, contributing to the development of improved irrigation schemes, have vital roles to play in the development of an effective national water resources manpower training program.

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