

Irrigation Management in Sudan

Technical Report No. 7



**Training Needs and Organizational
Constraints Assessment in Sudan**

INTERNATIONAL IRRIGATION MANAGEMENT INSTITUTE

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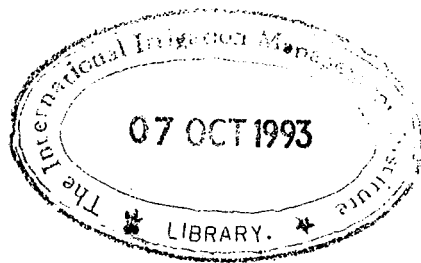
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TRAINING NEEDS AND ORGANIZATIONAL CONSTRAINTS ASSESSMENT IN SUDAN

Wad Medani, Sudan
5 to 17 August 1993



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and
the International Irrigation Management Institute (IIMI)*

September 1993

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PREFACE

One way of improving irrigation management is through institutional development program, which includes the implementation of integrated activities composed of management training, strategic planning and research.

Frameworks and methodologies have been developed by IIMI to implement these activities. They have been very successful in Malaysia and Bangladesh.

Based on the experiences of these two countries IIMI decided to conduct a comparative study. First to document managerial knowledge and organizational constraints, and to identify factors which influence irrigation organizations to promote institutional development, and secondly, to assess the kinds of interventions which contribute to sustain this process within agencies of different countries.

A third country was also to be identified to participate in this study. **SUDAN** was selected due to the enormous interest expressed by the Sudanese authorities to introduce management training activities at the Ministry of Irrigation and Water Resources, MOI, since 1991.

The Assessment of Training and Organizational Constraints (TNA) and the introduction of Strategic Planning and Human Resources Development constitute the initial major activities to undertake this study.

In August, 1993, MOI/IIMI agreed to conduct the TNA through a series of eight workshops for small groups of managers from different layers of the organization, MOI.

The core participants of the TNA exercise were the five groups composed of (i) chief engineers, divisional engineers and others; (ii) assistant divisional engineers and others; (iii) finance and administrative managers; and (iv) gate operators (2 groups). The TNA core groups were named TECHNICAL STAFF in this study. The other three groups composed of top managers, researchers and trainers were involved as resource groups to provide feedback and other inputs to the exercise.

The workshops of a one-and-half day duration for the core groups and a one-day duration for the resource groups involved a total number of 135 MOI staff.

This draft report aims to describe, step-by-step, all stages of the framework and methodology used by MOI/IIMI training team to conduct the TNA at MOI and to deliver its results.

This report is organized in four major parts as follows:

Part I provides the background to the activity, outlining the conceptual framework, the methodology used and a brief description of MOI and IIMI.

Part II describes the TNA processes and findings of the TECHNICAL STAFF.

Part III presents the TNA processes and findings of the TOP MANAGEMENT, RESEARCHERS and TRAINERS.

Part IV presents the conclusions, recommendations and evaluations of the activities.

In addition, sets of annexures complement the respective parts of this report, providing the data collected and instruments used during the TNA exercise.

IIMI training team strongly believes that this report can provide relevant information to MOI's top management to design action plans to promote the development of staff capabilities and improve MOI planning systems and other management components of the organization.

ACKNOWLEDGEMENT

This study owes a debt of gratitude to Dr Ahmed M Adam, First Under Secretary, Mr Kamal Abdu, Deputy to the First Under Secretary, the Under Secretaries and other senior officials of MOI who gave their time to participate in the TNA sessions and other meetings to discuss with IIMI team the significant issues related to this collaborative program. The authors greatly appreciate the support of MOI training officers Mr Houssein Osman Gasm Elseed and Ms Kamalia Mohammed Abubakar and for the Sudanese hospitality extended by MOI personnel both in their offices and in the classrooms.

We are extremely grateful to Dr. Yagoub Abu Shora, Minister of Irrigation whose presence in the TNA sessions provided us with great encouragement and support. We are also indebted to Prof. Fadl El Monshid, the Under Secretary of Hydraulic Research Station who welcomed each group of participants and made their presence comfortable.

We owe special thanks to our colleagues Dr M S Shafique, Dr Ali Dingle and IIMI Sudan staff, who played a vital role in coordinating and providing logistical support necessary to successfully conduct the TNA workshops. We also would like to thank Mr Nanda Abeywickrema, Director for International Cooperation, IIMI and Mr Charles Abernethy, Senior Technical Advisor, IIMI, for their presence, participation and valuable interventions during the workshops. We are confident that these two officials will play an important role within IIMI headquarters to support Dr M S Shafique in the implementation of further activities at MOI.

We also specially express our appreciation to Ms Muriet Stanislaus, Secretary, IIMIHQ, whose dedication and commitment to the work immensely helped us to complete this report in time. We also extend our thanks to Mr P Mutukumarana, Assistant to the Training Specialist for his inputs in compiling data.

The involvement of all these people doubtless contributed to the success of our first activity at MOI in Sudan.

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15 September 1993

PART I

BACKGROUND

1. BACKGROUND

1.1 INTRODUCTION

- 1.1.1 This section of the report provides the reader with the information on the collaborative program for institutional development between the Ministry of Irrigation and Water Resources (MOI) in Sudan and the International Irrigation Management Institute (IIMI), and an overview of the Training Needs and Organizational Constraints Assessment (TNA) which was conducted jointly by the two organizations in Wad Medani from 7 to 18 August, 1993.
- 1.1.2 Sudan is a hot and arid country which depends on 2.2m ha (in 1986) of irrigated area to supply food to its population of about 25 million people. All of Sudan's wheat and 90 percent of its foreign-exchange-earning cotton come from irrigated land, as do much of its supply of sorghum, groundnut and vegetables. (Vermillion, 1992)
- 1.1.3 Improvement of the performance of irrigation organizations to provide better services to farmers constitute, then, an important objective for the Sudan's irrigation sector. That is why IIMI supports the presence of a resident scientist since mid 1989 to work in collaboration with irrigation agencies in the country.

1.2 MINISTRY OF IRRIGATION AND WATER RESOURCES (MOI)

- 1.2.1 The Ministry of Irrigation and Water Resources (MOI), has its headquarters in Khartoum comprising the offices of the Minister, Minister of State, Advisers and the MOI's permanent representatives on inter-ministerial bodies, and the office of the First Under-Secretary is located in Wad Medani to whom the operating divisions of the MOI are responsible.
- 1.2.2 The responsibility for rural water resources was recently placed under the Minister of Irrigation with its own Under-Secretary.
- 1.2.3 The structure of the MOI used to be clear-cut with six departments, each with a Director under an Under-Secretary. After the hiving off of the two departments of Construction and Mechanical, the four remaining departments were reorganized as six General Directorates, some of which were further split into Directorates, the whole still being under one Under-Secretary. Recently the Irrigation Services were split into three and Projects into two, so that there were nine General Directorates, and the eight men in charge of the Engineering General Directorates were promoted to 'Under-Secretary' with the consequent need to introduce the concept of a First Under-Secretary. (McDonald & Partners, 1992)

1.2.4 MOI has about 1,700 permanent employees of different categories, including top managers, graduate engineers, technical engineers, technicians, clerks, accountants, storekeepers, personnel officers and accounting clerks and local clerks. In addition, a number of about 9,000 laborers provide services to MOI. They are called "staff out" of the corporation. They include radio and telephone operators, drivers, divers and others. At present, MOI is in the process of reviewing its structure, goals and objectives, aiming to meet the needs of rural development and country's expectations.

1.3 THE INTERNATIONAL IRRIGATION MANAGEMENT INSTITUTE (IIMI)

1.3.1 The International Irrigation Management Institute (IIMI) is an international agricultural research center with its headquarters in Sri Lanka. It was founded in 1984, and became a member of the Consultative Group on International Agricultural Research (CGIAR), in 1990.

1.3.1 IIMI's mission is to foster the development, dissemination and adoption of lasting improvements in the performance of irrigated agriculture in developing countries. By lasting improvements IIMI means those which are environmentally sound, economically viable and socially equitable. Performance improvements will be measured primarily in terms of productivity, equity and sustainability.

1.3.2 The management training and institutional development activities of IIMI are designed to contribute to its goals of strengthening national research capacity and supporting the introduction of improved irrigation management systems and policies.

1.3.3 To strengthen the management capabilities of national irrigation agencies, IIMI develops the following activities in partnership with national organizations.

(a) **Research**

- Collaborative field research
- Generic research

(b) **Institution building**

- Training and related institutional development
- Information exchange and networking
- Dialogue and consultation on policies and management.

1.3.4 IIMI's research programs are -

- assessing and improving the performance of irrigated agriculture
- sector level management of irrigated agriculture

- improving public irrigation organizations
- local management of irrigation systems and turnover
- operational management of water delivery and disposal.

1.3.5 The training and institutional development programs of IIMI include training of individual managers and policy makers through national or regional training programs, study tours, workshops, conferences, collaborative research activities, assisting national consultative committees, and so on; and training individual researchers through on-the-job training, fellowships, career internships for post-doctoral studies.

1.3.6 Since its foundation, IIMI has progressively decentralized its operations through regional and country programs located at present in more than ten countries in various parts of Africa and Asia.

1.3.6 All IIMI activities are unified by a common program of work, and in formulating that program the institute places priority on activities which

- promote multi-disciplinary collaborative research, based on field work in real irrigation systems
- solve real problems
- maintain excellence
- strengthen national irrigation management agencies
- reduce poverty, promote social justice, and improve the situation of disadvantaged groups.

1.4 IIMI IN SUDAN (N Abeywickrema, 1993)

1.4.1 There are very few international agencies undertaking resident operations in Sudan, but IIMI has had a resident presence in Sudan since mid-1989. During this time, collaborative field research has been concentrated in the project areas of two of the large parastatals, the Sudan Gezira and the Rahad. For the moment however, IIMI's work has made a greater impact in those aspects of the program devoted to institutional building than those devoted to field research.

1.4.2 A key factor for this development is the initial national workshop conducted in October 1989. This workshop conducted with the participation of all the Government and donor agencies in the irrigated agriculture sector was associated with IIMI in identifying the scope of IIMI's program in Sudan and prioritizing IIMI's program in Sudan through consensus. An indirect spin-off of the workshop was the establishment of a number of important relationships with the government agencies that led to a continuous dialogue on issues affecting the irrigated agriculture sector. In turn, this led to stronger support from the national policy makers and irrigation managers for IIMI's work program.

A highly professional and representative Consultative Committee helped to continue this dialogue and determine the research agenda and priorities of the program.

- 1.4.3 In May 1991, IIMI conducted a workshop on "Land and Water Charges". As a result, recommendations were made and are currently being followed up by the Government.
- 1.4.4 In October 1991, IIMI organized with the Ministries of Water Resources and Agriculture, a workshop on *Privatization and Turnover*, to which IIMI contributed its global experience in the area of strengthening farmer participation and institutional change. In the same year, IIMI also provided training in Rapid Rural Appraisal techniques to irrigation professionals at the field level.
- 1.4.5 In the Rahad Scheme, IIMI's field research work has resulted in a reappraisal of the operation and maintenance procedures, while at the Sudan Gezira Board, IIMI has helped to establish a Water Management Advisory Unit in addition to strengthening its capacity in water management.
- 1.4.6 IIMI's continuing work in Sudan, at a time when budgetary pressures are influencing the management and economic decisions being taken with regard to the irrigation sector, is likely to foster national agency interest in identifying more effective alternative management systems, and reorientation of Government and farmer institutions.

1.5 NEW PROGRAM IN SUDAN

- 1.5.1 IIMI's institutional development activities in Sudan were initiated due to the enormous interest expressed by the Sudanese authorities to implement management training activities at MOI since 1991, when its Training Specialist first visited the country. These activities are supposed to reinforce their interest and also to facilitate the officials' awareness of the importance of the training activities as part of the strategic planning and human resources development plan to specifically improve the performance of the organization instead of conducting training as isolated activities.
- 1.5.2 The Ministry of Irrigation (MOI) and IIMI Field Operations in Sudan have agreed on conducting two institutional development activities in a collaborative effort, during 1993. This aims to influence all managers of MOI to initiate and participate in a further integrated program which will include strategic planning and human resources development, management training and research in irrigation management for the entire organization.
- 1.5.3 At first, these two activities will be part of a comparative study which will include SUDAN, MALAYSIA and BANGLADESH. This study has two major objectives: (a) to document lessons learned on managerial skills, organizational constraints and factors which influence and/or promote institutional development of irrigation organizations,

and (2) assess relevant interventions to sustain the process which should be continuous and supported by the top management of the organization.

- 1.5.4 By initiating these activities in Sudan, IIMI would also have the opportunity of collecting information for the comparative study and for designing management training programs and other interventions to assist MOI to minimize its constraints.
- 1.5.6 The remaining sections of this report describe the organization and results of the first stage in this program, namely, the Training Needs and Organizational Constraints Assessment (TNA).

2. OVERVIEW OF THE TRAINING NEEDS AND ORGANIZATIONAL CONSTRAINTS ASSESSMENT (TNA)

2.1 INTRODUCTION

- 2.1.1 The Training Needs and Organizational Constraints Assessment (TNA) is considered an important phase of the training process as it identifies the existing gaps in skills among the personnel within an organization. It provides accurate information for the design of an effective training program which can respond to the actual needs of the participants. IIMI has developed an innovative approach to the design of TNA which involves a series of activities intended to facilitate the participants' awareness of the skills they need to perform the management aspects of their jobs.
- 2.1.1 The effectiveness of a training program depends upon the TNA being conducted in a very comprehensive way, from developing an understanding of the concepts of irrigation management and related activities to methods of translating of those concepts into practice. Accordingly, the TNA includes brief explanations and interactive exercises to create awareness of these concepts, in order to promote the participants' understanding of their own strengths and weaknesses, so enabling them to identify their training needs.

2.2 OVERALL DESIGN OF THE TNA IN SUDAN

- 2.2.1 In Sudan, the TNA exercise was designed and implemented using three different approaches for four different categories of staff, namely:
 - (a) technical staff
 - Chief Engineers, Division Engineers, Resident Engineers, Assistant Director of Finance

- Assistant Division Engineers, Assistant Resident Engineers, Assistant Senior Engineers, Sectors Engineers, Accounts Assistants.
- Finance and Administrative Managers
- Gate Operators

- (b) top management
- (c) researchers
- (d) trainers.

2.2.2 The TNA proper was concerned with the training needs of the technical staff, and was conducted using a methodology (with some modifications), which has recently been successfully applied by IIMI in Malaysia and Bangladesh, and which is described in section 2.6 below. The processes and findings of the TNA as they involved this group are described in Part II of this report.

2.2.3 The other three groups, top management, researchers and trainers were considered resource groups during this study. They were involved in the TNA in their complementary roles as those responsible respectively for

- (a) authorizing and initiating any future training or non-training programs which might be developed on the basis of the TNA findings.
- (b) producing research findings in irrigation management to be communicated to MOI staff through training programs.
- (c) implementing the management training program.

2.2.4 The basic methodology of the TNA was also applied to these groups, modified in accordance with their special role at MOI.

2.2.5 For the top management and researchers groups, the basic methodology was tailored to present the framework and illustrate the methods and techniques that IIMI uses to assess training needs and organizational constraints. This aimed to obtain inputs and feedback from them on the approach as well as to facilitate awareness of their responsibility to continuously support such program for promoting institutional development at MOI.

2.2.6 For the trainers, the methodology was slightly modified to suit the purpose of discussing the concept of management training, role of trainers, etc. and getting information on the basic skills needed to develop training professionals at MOI.

2.3 OBJECTIVES OF THE TNA

2.3.1 Although four groups of staff were thus involved in the TNA in different ways, its main objective was:

to identify factors affecting individual performance in irrigation management for the technical staff of the Ministry of Irrigation and Water Resources (MOI), with a view to determining the nature of the solution (training or non-training) best suited to their needs.

2.3.2 In order to achieve this objective, the TNA exercise was designed to:

- (a) review the concepts of institutional development including roles of leaders and managers of irrigation management and the distinction between management and technical activities
- (b) conduct job and task analysis
- (c) identify managerial knowledge, attitudes and skills required to perform tasks
- (d) identify existing gaps in managerial knowledge, attitudes and skills
- (e) identify organizational constraints
- (f) establish training priorities based on the results.

2.4 ANTICIPATED OUTCOMES

2.4.1 Both tangible and intangible outcomes from the TNA were expected. Tangible outcomes were expected to include:

- (a) lists of gaps in the managerial knowledge, attitudes and skills of the participants, to be used in the design of a long-term training program.
- (b) lists of organizational constraints on managerial performance, together with suggestions for overcoming them.
- (c) list of suggestions for improving the job descriptions of MOI technical staff or list of duties provided by the participants.
- (d) list of the main duties and tasks involved in irrigation jobs carried out by MOI technical staff.

2.4.2 Intangible outcomes, which were observed and perceived rather than documented, included:

- (a) better understanding of new concepts
- (b) improved awareness, which facilitates behavioral changes (new attitudes and skills)
- (c) improved ability to build relationships
- (d) better understanding of how to assess and improve performance
- (e) increased interest in knowing more about colleagues
- (f) improved relationships and understanding of working together
- (g) better understanding of irrigation-management issues
- (h) interest in improving the TNA exercise.

2.5 BASIC FRAMEWORK OF THE TNA

2.5.1 The basic framework of the TNA for technical staff of MOI comprised the following:

1. Introduction of the concept of institutional development and the role of managers and leaders.
2. Presentation and discussion of the Analytical Framework for Irrigation Management.
3. Review of job descriptions.
4. Job analysis.
5. Identification of
 - requirements (knowledge, attitudes and skills)
 - gaps in the performance of managerial activities in irrigation systems
 - constraints within the organization.
6. Establishment of the priorities of the training needs.
7. Development of a workshop to be conducted in September 1993, in order to introduce top management officials to the results of the Training Needs and Organizational Constraints Assessment, discuss the design of a long-term training program as part of the Strategic Planning and Human Resources Development Plan, and possible policy implications of these results.

2.6 METHODOLOGY

The TNA was conducted using group techniques to facilitate interaction and participation. The following activities were carried out:

- (a) A 'Getting to know each other' exercise (annex 1 of Part V) provided an opportunity for the participants to get acquainted with one another and facilitate friendship.
- (b) The Senior Irrigation Management Specialist on the IIMI team presented the concepts of Institutional Development and Analytical Framework for Irrigation Management (Part II - Chapter 4) and discussed with the participants the distinction between managerial and technical activities.
- (c) The participants were invited (as volunteers) to describe their duties and tasks as irrigation managers or researchers or trainers. The facilitator helped them to analyze their own jobs and distinguish between the managerial and technical tasks performed by them.
- (d) The job descriptions were drafted by the majority of the participants and were collected. This exercise provided the participants with the opportunity of reflecting on their responsibilities.
- (e) The job analysis was conducted using 'Take three for better brainstorming: a modified technique' to give the participants the opportunity of working individually and in small groups, to assess their duties along with the tasks which are necessary to perform their jobs.
- (f) Using the results of these exercises, the participants, who were constituted in small groups, were invited to answer a questionnaire designed to facilitate the analysis of technical and managerial aspects of their jobs. The questions were related to their performance assessment, opportunities for performance improvement and major constraints for performing fundamental duties. The results were reported and discussed by the participants in plenary session.
- (g) The participants were invited to focus on managerial tasks and to identify the knowledge, attitudes and skills needed to perform them. A quick presentation of the concepts of knowledge, attitudes and skills was conducted by the IIMI Training Specialist to facilitate their understanding.
- (h) The brainstorming technique was used to list areas of managerial knowledge and attitudes on flipcharts.
- (j) The participants were invited to reflect on the list of skills requirement displayed on the walls, and prioritize the gaps in knowledge and attitudes.

- (k) Organizational constraints were identified along with the participants' suggestions for overcoming them.
- (l) The groups of participants who were able to read and understand English were invited to answer a questionnaire entitled 'Personal experience and view on training' (annex 9 of Part V), which aimed to assess their perceptions and feelings related to training activities within MOI. The groups of gate operators did not participate in this exercise due to language problem. The results of this session are presented as annex P of Part IV of this report.
- (m) The exercises of the TNA workshops were evaluated by the participants to provide feedback on its effectiveness with a view to improving it in future exercises.

2.7 TEAM COMPOSITION

The TNA was carried out by a four-member team composed of:

- (a) the Director of Training of MOI,
- (b) the Deputy Director of Training of MOI,
- (c) a Senior Irrigation Management Specialist, a former IIMI Researcher, and
- (d) the Training Specialist from IIMI Headquarters, Colombo, Sri Lanka.

2.8 PARTICIPANTS AND SESSIONS

- 2.8.1 The program was conducted in eight sessions. The five sessions for technical staff were each held for one-and-a-half days duration and the three others, i.e. the top management, researchers and trainers were held for one day duration.
- 2.8.2 In addition to MOI personnel, the second workshop whose participants were chief engineers, division engineers, and others, was complimented with the presence of the Minister of Irrigation and Water Resources, who spent a few hours observing the exercise and, at the end, addressed the audience with appreciation for the active participation.
- 2.8.3 The participants of all other workshops were constantly honored by the presence of the Under Secretary of the Hydraulic Research Station who welcomed each group and encouraged their openness and active participation in the TNA program. The Deputy First Under Secretary has also given attention to the participants joining in some of the exercises with some groups of technical staff.

- 2.8.4 The technical staff groups included: Chief Engineers, Division Engineers, Resident Engineers and Assistant Director of Finance, Assistant Division Engineers, Assistant Resident Engineers, Assistant Senior Engineers, Sectors Engineers, Accounts Assistants-Finance and Administration.
- 2.8.5 The top management group included: First Under Secretary, Deputy First Under Secretary, Under Secretaries for Hydraulic Research Station (HRS), Dams, Gezira & Managil, Planning, Nile Waters, Girba and Rahad, Finance & Administrative Affairs, Rehabilitation, Mechanical & Electrical, Projects, and other Directors and senior officials.
- 2.8.6 The researchers group included research engineers and technician research engineers from HRS of MOI.
- 2.8.7 The trainers group included personnel from several of the technical staff and research categories listed above.
- 2.8.8 The six sessions, including the top management, researchers, trainers and technical staff with reasonable knowledge of English, were conducted in English. Whereas, the sessions for the gate operators were entirely in Arabic by two MOI trainers. During other sessions, translations in Arabic were also provided, when necessary. (annexures 11-17 of Part VI)
- 2.8.9 The number of sessions and participants in each category are shown in Table 1, which also shows the proportion of managerial staff in each category who actually participated in the TNA.

Table 1: Number of sessions and participants in each category

Category	No. of sessions	Total no. involved in management	No. of TNA participants ¹	Percentage
Top managers & Directors	1	45	17	37%
Chief Engineers, Div. Engineers, Res. Engineers, Asst. Director of Finance	1	173	20	17.6%
Asst. Senior Engineer, Sectors Engineers, Accounts Asst. Finance & Admin. Managers	1	613	23	3.8%
Gate Operators	2	890	21	2.4%
Researchers and Technicians, Res. Engineers	1	40	19	47.5%
Trainers	1	-	14	-
TOTAL	8	1,761	135	7.7%

* With regard to the trainers, a sample was drawn from the MOI technical staff and researchers involved in other sessions of the TNA exercise. MOI does not have trainers as a staff category.

** Regarding the research activities, the MOI has an established research program for irrigation but not for irrigation management. For the TNA purpose, a sample of researchers and technician research engineers was composed of MOI from the Hydraulic Research Station (HRS).

2.8.10 The 135 participants were selected from a total population of 1761 professionals involved in the management of irrigation systems by the managers of different units of MOI in accordance with the criteria laid down by the top management. These required that participants should be experienced, have a clear understanding of their jobs and show a willingness to participate actively in the exercise and to express the needs and constraints related to their jobs.

¹ These figures represent the actual number of participants according to their designation within the MOI.

- 2.8.11 Participants worked mainly in the areas of mechanical, electrical and civil engineering, hydrology and administration. Annex C of Part I gives a complete list of participants together with their directorate at MOI.
- 2.8.12 A sample of 56 (42%) participants of the TNA was taken to compute the age and the years of work at MOI. It was found that 40% in the age group of 30-40 and another 40% in the age of group of 40-50, and about 20% falls between 50-60 years group. On the other hand, 45% of this staff work for MOI between 21 to 30 years, followed by 29% who has worked between 11 to 20 years; 21% between 1 to 10 years and finally only 6% is still working and falls between 30 -40 years of tenure.
- 2.8.13 The TNA exercise was conducted at the Hydraulic Research Station of MOI. The objectives and the tentative schedules of sessions are attached as annexures A and B of Part I.

PART II

**TRAINING NEEDS AND ORGANIZATIONAL CONSTRAINTS ASSESSMENT:
TECHNICAL STAFF**

PROCESSES AND FINDINGS

3. INTRODUCTION

- 3.0.1 The four categories of MOI staff referred to above represent the core of the participants for the TNA exercise. They were exposed to a standard program designed to obtain relevant information on managerial skills for developing an effective training program and information on organizational constraints to design other kinds of interventions to overcome them. The participants in these four categories were provided with the opportunity of:
- (a) individually reflecting on the content of institutional development, roles of managers and leaders, and irrigation management related to their jobs in the field
 - (b) sharing and discussing ideas with peers
 - (c) arriving at group decisions on the information required to design a management training program for all professionals involved in similar duties at the MOI.
- 3.0.2 The program for each group followed the basic framework of the TNA described in outline in Para 2.5.1 above. Part II of this report is also organized in accordance with this framework.

4. INSTITUTIONAL DEVELOPMENT AND ANALYTICAL FRAMEWORK FOR IRRIGATION MANAGEMENT

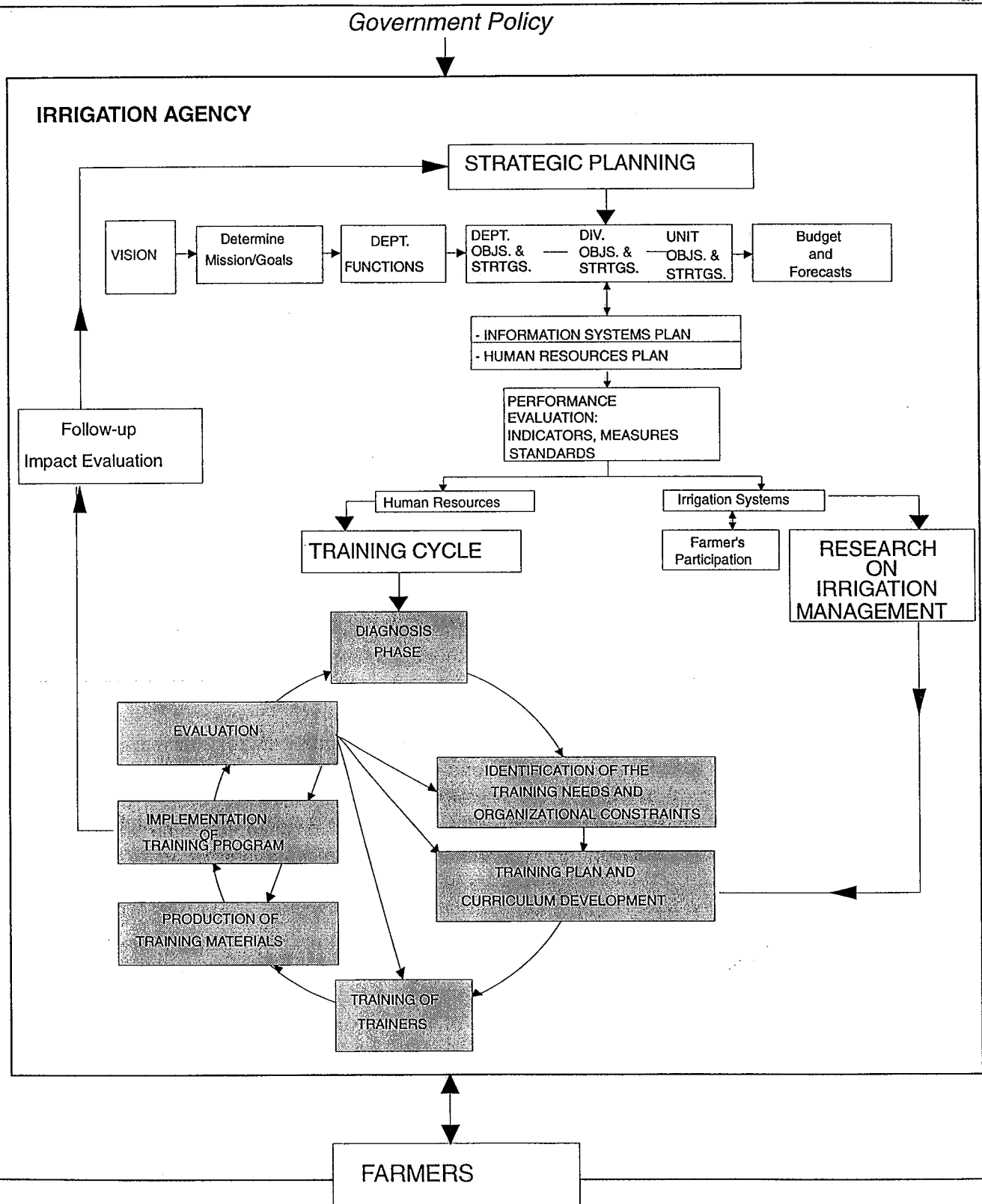
4.1 INTRODUCTION

- 4.1.1 After the preparatory interactive exercise (Para 2.6(a) above), the first step in the TNA program was the presentation and discussion on the concept of Institutional Development and of an Analytical Framework for Irrigation Management devised by IIMI researchers to provide a basis for the analysis, evaluation and organization of irrigation activities.
- 4.1.2 The main objective of the brief presentation on this subject was to create awareness of the concepts of institutional development and irrigation management and to provide participants with an opportunity to discuss the distinction between the technical and managerial aspects of irrigation activities.

4.2 THE CONCEPT OF INSTITUTIONAL DEVELOPMENT

- 4.2.1 The concept of Institutional Development was introduced by the Senior Irrigation Management Specialist as a continuous process of improvement of the whole organization and its performance. It is a process which must take place within the organizations to guarantee sustainability of appropriate actions and patterns of behavior to achieve organizational goals.
- 4.2.2 The institutional development comprises issues related to :
- Governance - Legislation, policy, strategy, administration
 - Organizational structures and processes
 - Ministries, departments, divisions, units
 - Systems and procedures, rules and regulations, programming, budgeting, financing, procurement, accounting and auditing.
 - Human resources development and management - personnel management, staff development, leadership styles.
 - Organizational culture - values, beliefs, norms of behavior, codes of conduct.
- 4.2.3 The organizational linkages with Training and Research, displayed in figure 1, were introduced to facilitate the participants' view of the organization as total system. There is a growing consensus among researchers and managers that an integrated approach is necessary to promote institutional development. This approach embraces the system as a whole, and considers the full spectrum of interacting elements not just within the agency, such as its internal systems, policies, procedures, and norms of staff skills and behavior, but also elements outside of the agency with which it has to interact when conducting its work including clients, the government, the prevailing economic systems, the available technology, the environment, and so on. (Franca, 1993)
- 4.2.4 To implement a successful institutional development program, it is necessary to involve top management and each manager at every level throughout the organization. The institutional development programs themselves should promote awareness in the agencies of the importance for strategic planning and human resource development which includes the development of research capacity to guarantee updated information for improving performance of irrigation organizations. (Franca, 1993)
- 4.2.5 The process of institutional development requires competent and committed managers - leaders with vision at the top. Managers focus much on objectives that have to be achieved and on the processes that have to be maintained. Put much greater emphasis on getting the key results achieved through people. Leaders conceive a vision, provide a sense of direction and enable the group or organization to fulfill its mission and hold it together as a working team. A leader is a kind of person (qualities), with the appropriate knowledge and skills to lead a group to achieve its ends willingly.

Figure 1 - Organizational Linkages with Training and Research



4.3 OUTLINE OF THE ANALYTICAL FRAMEWORK FOR IRRIGATION MANAGEMENT

4.3.1 The content of the Analytical Framework for Irrigation Management may be summarized as follows:

(a) Irrigation Management

Importance of irrigation for increasing and sustaining agricultural productivity and production in developing countries.

Role of irrigated agriculture as the prime mover of socio-economic development, employment generation, and poverty alleviation.

Performance of irrigation systems below their potential in terms of yields and efficiency of water use.

Inequitable water distribution and adverse consequences of irrigation, like water logging and salinity.

Search for causes of under-performance and opportunities for improving performance.

Irrigation management identified as a key area for research development training.

Irrigation management: definition and elaboration. Key words: system, process, institution, objectives, conditions, resources, effects, performance.

Major sectors in irrigation management: objectives, conditions, context, processes, renewal (IIMI strategy document).

(b) Physical and management dimensions

Process: physical process (water flow, etc.) and decision-making regarding that process.

Physical conditions, physical activities, and physical results.

Management conditions, management activities and management results.

Interrelationship of physical and management processes and the importance of feedback.

(c) Management concerns

In an organization, decisions are made at all levels and key decisions have both technical and managerial aspects.

Development and maintenance of capacities: planning, design, construction and installations etc.

Utilization of the capacity: operation

(d) Management of organization

Organization and people; administrative structures and conditions.

Decision-making processes in the organization, information flows and control processes; management of interfaces (coordination).

Managing people and training for better performance; training and professional development in terms of knowledge, attitudes and skills.

Limitations of training: necessary but not sufficient. Relative place with respect to other conditions and constraints.

4.4 PRESENTATION AND DISCUSSION OF THE ANALYTICAL FRAMEWORK

4.4.1 The depth of treatment given to the concept of irrigation management and the analytical framework during the TNA depended on the nature of the jobs, functions and experiences of the participants in each group. The subject was treated more extensively for the Chief Engineers, Division Engineers, Resident Engineers, Asst. Director of Finance and others, and Asst. Senior Engineers, Sectors Engineers, Accounts Asst. Finance & Admin. Managers as well as for the top managers and researchers in their separate sessions. It was less elaborate for Finance and Administration Managers. A special and very comprehensive summary of this subject was prepared and discussed in Arabic with the Gate Operators group. (annex 14 of Part VI)

4.4.2 During the discussions that followed the presentation, the participants were very active and interested in relating these concepts of irrigation management to their own jobs.

- 4.4.3 Some of the participants were invited to volunteer to describe their jobs, functions and duties, and identify the technical content and the management dimensions of their jobs. The level and content of the questions raised and the discussion that followed varied somewhat depending on the nature of the group. Some issues raised were of a very substantive nature and were clearly based on the experience of the persons concerned. The participants' awareness of the technical and the managerial aspects of their jobs proved to be high.
- 4.4.4 The participants were invited to estimate the proportion of their time which was spent on each of the two aspects. The responses helped to increase awareness of the great amount of time the participants spent on managerial aspects of their jobs.

5. JOB DESCRIPTION

5.1 INTRODUCTION

- 5.1.1 Job description constitutes a management responsibility to define what work is to be performed and how the many duties to be carried out can be divided and allocated into manageable work units or jobs.
- 5.1.2 Job description is an important part of Human Resources Development Plan which ensures accurate and comprehensive knowledge of what the agency staff is expected to perform. Once this has been defined, the training personnel can assist the members of the organization in conducting job analysis. This aims to assess the necessary skills (knowledge and attitudes) to improve their performance in order to contribute to the achievement of the organizational goals.
- 5.1.3 Job descriptions well designed and well disseminated among staff improve their responsibilities, develop motivation and commitment, and facilitate supervision. In addition, they promote cohesive operation within the organizations. The personnel duties can be easily coordinated to prevent gaps and duplication of efforts.

5.2 JOB DESCRIPTIONS AT MOI

- 5.2.1 It seems that the official job descriptions for MOI technical staff may exist, but very few of the TNA participants were aware of their existence. Consequently, the majority of MOI staff who participated in TNA exercise did not present job description and was required by the trainers (as home work exercise) to list the actual duties they perform annex 4 of Part V). This exercise aimed to (1) provide the participants with the opportunity to reflect on their work load and responsibilities, and (2) offer to MOI top management some basic information to improve the job descriptions of the organization.

5.2.2 Examples of the participants' contributions for different categories are given below and further contributions are in annex E of Part II.

Divisional Engineers

- Follow up the routine work of water control and distribution in each sub-division and intervene to solve any specific difficulty that may arise.
- Prepare at the beginning of the hydraulic year the annual desilting and dewatering programs for the whole division in the light of the proposed programs raised by the sub-divisional engineers.
- Follow up the execution of the desilting and dewatering programs and intervene to act in any difficulty that may arise.
- Check, comment if necessary and pass forward to the projects Directorate proposals raised by Sub-divisions on system performance improvement. These proposals could be canal remodelling, addition of hydraulic structures, etc.
- Prepare the major maintenance program which is carried out annually during the summer period and follow up its execution.
- Prepare technical reports to reflect the performance of the Division.
- Prepare the annual budget for the whole division and follow up the financial control of this budget.
- Follow up the administrative affairs of the Division regarding personnel affairs, supplies of petrol and maintenance materials, etc..

Divisional Engineer - Manager of R.I.O

- Technical duties:
 - (1) water control: maintaining levels and supervise water distribution to all system of canals,
 - (2) Maintenance of drainage system,
 - (3) Maintenance of the system of canals from silt and weeds
 - (4) Solving all irrigation problems
- Administrative duties
 - (5) Management of personnel including engineers, clerks, accountants, and laborers.
 - (6) Keeping stores with supply materials and supervising running cars
- Financial duties:
 - (7) Prepare the annual budget proposals

- (8) Control the budget expenditure monthly and make sure that every pound is going to the right item
- (9) Check the accountants' works
- Public Duties:
 - (10) Share and participate in the public affairs

Chief Electrical Engineer

- Making plans for different maintenance programs
- Ordering and storing of spare parts
- Preparation of tools and equipment
- Site preparation for maintenance and staff requirements
- Conducting the maintenance
- Repairs
- Recording and reporting (Checking the spare parts.)
- Training of the staff
- Discussion on improving the work maintenance

Public Relations Officer

- Preparation of minutes of meeting held at the Ministry Headquarters.
- Prepare the monthly and annual reports and issue the pamphlet of the Ministry of Irrigation
- Keep and evaluate the archives relating to Ministry of Irrigation and work to promote the archive to become an information bank to the Ministry.
- Supervising of local exhibitions and prepare internal shows.
- Support and assist in preparation of information for establishments, Boards and Mass Communication Media.
- Send and follow up advertisements until the settlement of accounts.
- Help to prepare symposiums and seminars of the Ministry of Irrigation.
- Prepare official celebrations
- Welcome visitors and foreign guests
- Supervise internal rest houses and receive visitors and guests.

Headquarter's Assistant Divisional Engineer (H.Q.A.D.E.)

- Checking the water levels at each off-take to the sub-divisions
- Comparing the discharge passing to each sub-division with the demand.
- Checking the cross-sections of the silted canals sent by the sub-divisions and the quantity of silt. Afterwards checking the x-sections of the dug canals with the design cross-sections.

- Collecting and compiling the monthly reports from the sub-divisions and send it to the directorate.
- Collecting and checking the work program from the subdivision and what is done in each quarter (period of three months).
- Collecting the needed materials for the maintenance of irrigation and building structures which has to be asked from the directorate and then redistribution of it after sending it to the sub-divisions.
- Demanding and distribution of the fuel materials according the needs of the sub-divisions.
- Following up the situation of cars and vehicles at the workshop and discuss it with the mechanical engineer.

Assistant Senior Engineer (A.S.E.)

- Management and control of Gezira main canal water from K. 127 to K. 169.
- Survey and investigation of the canals system within the sub-division
- Maintenance of the canals system:
 - a) desilting
 - b) dewatering
 - c) Maintenance of regulators structures
 - d) Maintenance of the field outlet pipes
- Supply the crop water requirement to the different crops
- Management, superintendence and training of the laborers
- Supervision of the sectional engineers.
- Arrangement of the supply of the fuel and maintenance materials from Wad Medani to the sub-division
- Preparation of:
 - a) weekly report of machine production
 - b) 10-days discharge report
 - c) monthly report
 - d) annual report.
- Follow up the work of the store keeper.

Accounting Controller

- Check all papers received and direct it to sections concerned for instance: salaries section, deposit, receipts, internal checking payments, records, control, etc.
- General supervision and control of all book-keepers' works and follow up.
- General control of the work done by book-keepers according to the financial regulations and rules.

- Following up all approved budget amounts concerning the ministry's money received from Ministry of Finance and direct payments according to that.
- Authorization to sign bank cheques and the letter approving payments.
- Approach all units, organizations which have any accounts with the ministry.
- To authorize and open local accounts for the substations with the Bank of Sudan or if not available with other banks.
- Transfer money to all sections of the ministry for salaries or other urgent payments.
- Check all payments of the Ministry according to the approved budget.
- Follow up all ministry's receipts collections
- Auditing of the final finance sheet.
- Prepare all budget figures and sit with those who discuss these figures to receive the final budget approval. (Budget meeting).

Administrative Inspector F.U.S. Office

- General supervision of the First Under Secretary's office involving revision of the office procedures in handling of incoming and outgoing mail and the system of filing.
- Organize, develop, manage and training the staff of the office.
- To achieve the task of the Ministry, developing the team work in the office and develop individuals for promotion and greater efficiency and satisfaction.
- Write letters and memorandum.
- Providing stationery needs.
- Ensuring good work environment.
- Responsible for the strictly confidential letter
- Typing English, Arabic.

Gate Operators

- To maintain record of water levels upstream and downstream of regulators and major and minor canals taking off from regulators.
- To operate the gates of the regulators (rolling shutters)
- To operate the screws of Butcher weir at the head of the minor canals to control discharge into minor canals.

6 JOB ANALYSIS

6.1 INTRODUCTION

- 6.1.1 Job analysis is the process of compiling, recording and interpreting duties and tasks relating to the essential features of individual jobs.
- 6.1.2 The main aim of this stage in the TNA is not to produce definitive results in the form of lists of tasks or duties (though such lists are produced in the course of the exercise), but to help participants to learn to analyze their jobs, distinguish between the managerial and technical duties and tasks involved, and develop a better understanding and awareness of the skills needed to perform these activities successfully.
- 6.1.3 The job analysis done by the four categories of technical staff at MOI thus involved a systematic examination of their actual duties and tasks in order to distinguish between their technical and managerial aspects and identify the knowledge, attitudes and skills required to perform them.

6.2. METHODOLOGY

- 6.2.1 The job analysis was carried out in two stages. In the first stage, a modified brainstorming technique known as 'Take three for better brainstorming' (annex 2 of Part V) was employed. In the second stage, a questionnaire, 'Format for self-analysis of irrigation jobs' (annex 3 of Part V) was used.
- 6.2.2 For the 'Take three for better brainstorming' session, participants worked in two phases, individually and in teams, respectively.
- 6.2.3 In the individual phase, participants were invited to think about the different duties and tasks they perform as irrigation managers, and to write down two major duties, breaking them down into their constituent tasks.
- 6.2.4 In the team-work phase, each group prepared a consolidated list of the major duties and tasks identified by individual participants and then, from the list, identified three major duties and associated tasks, which were presented to the whole group. The results of these exercises were displayed on flipcharts.
- 6.2.5 At the second stage, using the questionnaire, 'Format for self-analysis of irrigation jobs', the participants in each group were divided into small teams of two or three.

From the lists of tasks and duties produced in the first stage, which were now displayed on the flipcharts, each team was invited to choose one major duty and to reflect on their performance assessment, ways to improve their job and cite the major constraints they face while perform their managerial or technical activities.

6.3 RESULTS OF 'TAKE THREE FOR BETTER BRAINSTORMING' SESSION (ANNEX F, PART II)

6.3.1 Examples of the results of the major duties and related tasks, identified in 'Take three for better brainstorming' session, are given below. Additional examples of the results of the individual phase exercise are presented in annex F of Part II.

6.3.1.1 Individual Phase

Divisional Engineer

Major duties

- Checking the performance of my sub-divisions (4) regarding water control distribution from the water control book.
- Checking the execution of maintenance program

Related tasks

- Bring the record book to my office from telephone office.
- Check situations at sub-divisions
- Evaluate the situation
- Intervene to act if necessary
- Communicate by telephone with each sub-divisional engineers
- Take note of situation and evaluate progress
- Intervene to act if necessary.

Director of Rahad

Major duties

- Make sure that all the staff come in time to make sure that the work is steady
- Check the water level along the main canal and make sure that every major canal took its requirement.

Related tasks

- Call the head clerk and check the attendance book
- Make sure that all engineers are present by telephones
- Check the indent book
- Check the level book
- Make some telephone communication with the engineers.

Public Relations Officer

Major duties

- Preparation of minutes of meetings held at the HQ of the Ministry.
- Preparation of monthly and annual reports and issue the pamphlets of the Ministry of Irrigation.

Related tasks

- Take notes
- Editing
- To send the minutes to the First Under Secretary for the final approval.
- To send letters to all directors to bring feedback information concerning technical data covering the month and the year to the annual report.

Hydrologist

Major duties

- Bathymetric survey of the White Nile
- Perform silt analysis

Related tasks

- Lead the team for engineers and labors
- Train and supervise their performance
- Give them instructions to fulfill certain duties
- Preparation of reports of progress of work.
- Train staff how to do the silt analysis
- Supervise and check their work, then prepare final report.

Personnel Officer

Major duties

- Select new employees for services
- Prepare the first chapter of the budget

Related tasks

- Advertise for the new jobs in the newspapers and radio.
- Interview the candidates and select the right person for the job.
- Inspect the certificates.
- Specify the salary in the letter of the appointment.
- Train the new employee for his duties and tasks.
- Prepare the budget according to the director of the budget
- Divide the employees into work teams e.g. one for preparing salaries, other for increments and another for the actual expenditure during the whole year.
- Collect the information and make the final summary and raise it to the concerned unit for discussion.

Gate Operator

Major duties

- (a) Main head regulator water guard duties
- Distribution of indented water to all canals and majors supplied through main canal. This is subject to engineers' instructions.
 - Transfer of information regarding already released water to water guard at the first downstream head regulator.

Related tasks

- To check all gates across the main canal and their operational condition validity.
- To check all canal embankments.
- To perform routine measurements of upstream and downstream water levels and gate openings. These measurements also have to be delivered to the section headquarter.
- To keep in contact with the engineer in charge.

6.3.1.2 Team work phase

Major duties

Gezira/Managil

- Checking and monitoring the performance of the sub-divisions regarding water control and distribution.
- Follow up of silt and weed clearance programs.
- Follow up the administrative and financial work of the division.

Mechanical and Electrical Engineer

- Maintenance of heavy machineries, vehicles, pumps, water gates & other equipments.
- Operation & maintenance pumps.
- Ordering & providing the spare parts.

Girba & Rahad

- Make sure that all the staff came in time and the work is steady.
- Check the water levels along the main canal and majors.
- Check and revise the technical problems and the performance of the canals.

Dams

- Water control and operation of dams.
- Maintenance
 - structures
 - canals
 - protection embankments
- Administration (personnel and financial affairs).

Administration and Finance

- Preparation of the general budget of the ministry and also the development of budget and its distribution to the various directorates and financial observation.

- Responsible for human resources development and training
- Purchasing and stores of all office equipment, stationery and its distribution to the various directorates and also all machines and equipment.

Accountants

- Internal auditors' concern
 - Follow up the financial deliveries and to make sure that the procedure is correct. According to rules and financial regulations.
- Preparation of pay sheets for salaries.
- Circulation of the water rates for the agricultural season.

Administrative Inspectors

- General supervisor for organization and manage training.
- Implementation of promotions
- Preparation of training plans.

Gate Operators

- Receive instructions to discharge 150 thousand M³ of water and pass it to canals 10 thousand M³ each.
- Supervise major canals and make sure that indent is satisfied and then report to office if there is any shortage or danger.
- Work day and night to let water reach Abu Ashreen (farms).

6.4 RESULTS OF THE 'FORMAT FOR SELF ANALYSIS' SESSION

- 6.4.1 The major objective of this exercise was to facilitate awareness among the participants of the importance of their performance in the job which should be assessed continuously by themselves (self-assessment) and by the organization (through the supervisors).
- 6.4.2 The participants were invited to work in small groups and reflect on (1) ways they perceive themselves being evaluated in their jobs (on both technical and managerial performance); (2) their views on how to improve their performance; and (3) the constraints which prevented them from being more effective in the MOI. The results obtained from the Chief Engineers, Divisional Engineers and others (second group) are summarized below. The summary of responses for the other categories is presented in annex F of Part II.

6.5 COMPILATION OF RESPONSES TO THE QUESTIONNAIRE

Chief Engineers, Divisional Engineers, Resident Engineers, Assistant Directors

1a. Assessment of Technical Performance

Participants expressed different perceptions on the technical performance assessment by MOI. Two small groups stated that the assessment is done by the supervisors through the annual confidential reports. Other groups perceive their performance (may be) assessed by the supervisors during the visits to the site or through radio messages, by telephone, daily follow-up meetings. They did not bring out and discuss on this respect with the supervisors. On the other hand, some groups expressed that there is no measure for assessment while another one self-evaluated their technical performance high between 70 - 90% of achievement.

1b. Assessment of Managerial Performance

Similar responses were given by the group regarding assessment of their managerial performance, including assessment by the confidential reports, visits to the site, etc. The same group has mentioned there is no measure for managerial assessment at MOI while another one self-evaluated their management performance as 65% of achievement.

2a. Improvement of Technical Performance

All groups cited training, including attending to seminars, courses, workshops as ideal opportunity for improving technical performance. In addition, some groups stated, collaboration with other similar organizations from outside; use of more modern equipment such as computers, etc; and improving financial support for training and visits to developed countries, as other sources for improvement of technical performance.

2b. Improvement of Managerial Performance

The majority of the participants stressed management training as a very important activity which helps them to improve in management skills. They also stated, research, more delegation of power and authority, increase in communication and transportation facilities and reading books, as additional ways for improving their managerial performance.

3a. Major Constraints for Performing Technical Activities

Lack of trained and qualified staff (including engineers), skillful laborers followed by lack of equipment and lack of MOI direction (reference) and job description were considered by the participants as major constraints for performing technical activities. In addition, they cited lack of updated information, braindrain and others.

3b. Major Constraints for Performing Managerial Activities

Poor communication, poor feedback, problems and/or delay in decision making were cited as the most difficult constraints they face while performing their managerial activities. They also mentioned: lack of staff training, lack of vehicles and engineers, low personal income, lack of promotion opportunities, budget as constraints as well as conflicts among staff and lack of team work.

7. IDENTIFICATION OF REQUIREMENTS AND GAPS

7.1 INTRODUCTION

- 7.1.1 This session aimed to interpret the managerial tasks performed by the participants, and identified by them during the previous stage, in terms of the knowledge, attitudes and skills required to perform these tasks satisfactorily. The aim was to identify and determine the extent of the gaps between the actual managerial knowledge and skills of the participants and those they needed in order to meet the standards of performance determined by the organization.

7.1.2 The concepts of knowledge, attitudes and skills were introduced by the Training Specialist and discussed by the participants. The concepts used for this study were as follows:

Knowledge is retained information concerning facts, concepts and relationships. For example, irrigation management; information process; communication systems; feedback (concept, how to give and receive); decision making process; etc.

Attitudes consist of feelings or statements for or against certain issues; individuals are predisposed to view their jobs, other people and the work in a certain way. Attitudes are reflected in people's behavior. For example, responsiveness; flexibility; self-confidence; adaptability; tact, etc.

Skills are the abilities to do things effectively; apply knowledge and personal aptitudes and attitudes in work situations. For example, conducting meetings; giving and receiving feedback; listening skills, etc.

7.1.2 Skills, then, can be developed during training programs and improved little by little as the participants apply a new style of behavior repeatedly in life.

7.2 METHODOLOGY

7.2.1 Taking into account this concept of skills, the participants were invited, first to join in a brainstorming session to produce lists of managerial knowledge and related attitudes, and secondly, to establish group priorities on the gaps of the participants' own managerial knowledge and skills.

7.2.2 The brainstorming session was introduced by the facilitator, who invited the members of each group to list as many elements of managerial knowledge and related attitudes as they could think of, based on the analysis of their own duties and tasks which they had carried out during the Job Analysis session.

7.2.3 Brainstorming is a creative, rather than an evaluative technique, and the participants were encouraged to offer as many suggestions as possible. At the end of the session, participants were provided with the opportunity of discussing their suggestions. This was intended to increase their level of awareness for the following session, which was concerned with the analysis of gaps in managerial knowledge and skills. The brainstorming session was long enough to facilitate deep discussion of the issues.

- 7.2.4 The lists of elements of managerial knowledge and attitudes compiled during the brainstorming sessions, were then discussed in detail in group sessions designed to help the participants identify the gaps between their existing levels of performance and those expected of them by the MOI.
- 7.2.5 The aim of this activity was to provide a firm basis for designing, preparing and providing effective training programs in the future which would help participants to fill the gaps in their knowledge and attitudes.
- 7.2.6 The participants were first requested to examine the lists of managerial knowledge and attitudes displayed on the wall, which were the products of the brainstorming sessions held previously. They were invited to reflect on their own capabilities and identify the gaps in their own knowledge and skills in relation to those included in the lists.
- 7.2.7 Priorities among the listed topics were established by ranking the ten considered most important. Each participant chose and ranked the ten items in Managerial Knowledge and Attitudes which he or she considered to reflect the most immediate needs for improving his or her job. (annexures 5 and 6 of Part V)

7.3. RESULTS OF THE BRAINSTORMING SESSION

- 7.3.1 It was observed that, in general, all staff groups participated very actively in the brainstorming session.
- 7.3.2 The participants were also very interested in evaluating their own attitudes towards their jobs. Long lists were developed with interest and enjoyment. This may be due to the fact that they have not been exposed to this kind of subject before and this led them to participate actively and spontaneously in identifying and discussing attitudes.

7.4 RESULTS OF THE GROUP SESSIONS

- 7.4.1 Each of the group sessions produced lists of the managerial knowledge and attitudes which were considered gaps by the participants. It is important to note that these lists were produced by the participants themselves on the basis of their own analysis of the managerial knowledge and attitudes required to perform their jobs satisfactorily. They were not formulated in advance by the training team or the MOI.
- 7.4.2 These lists of gaps will provide the basis for determining the contents of a short and long term training program for technical staff in the various categories.

7.4.3 Specific requirements in managerial knowledge and attitudes were organized into groups under appropriate headings, as follows:

- how to interact
- how to manage human resources
- planning, monitoring and evaluation
- setting criteria and priorities
- how to manage information.

7.4.4 Specific gaps in attitudes were likewise grouped as follows:

- how to stimulate communication
- to build up confidence
- to motivate others
- to improve oneself
- direct and control.

7.4.5 The complete lists of specific gaps in managerial knowledge and attitudes, identified by category of staff, grouped under these headings, are presented in annex G of Part II.

7.4.6 The final phase of the session provided individual participants with the opportunity of assigning their own priorities to the gaps in knowledge and attitudes which had been discussed and listed during the previous phase. These individual selections were then collected and collated, and assigned weightings by the facilitator.

7.4.7 Topics given first priority were assigned weightings of 10 points, those given second priority, 9 points, and so on until topics ranked in tenth place were given a score of one point. The scores assigned to the individual responses in each group were then added together to produce group scores for all the topics listed.

7.4.8 In the case of those categories of staff who were divided into more than one group, (ie., gate operators) the group scores were again amalgamated to produce overall scores for each category. In this study, only the gate operators were composed of two groups. All the other categories of staff had only one group of participants.

7.4.9 Since each group in each category was free to make its own choice of priority topics, different topics could be chosen by each group. The groups of gate operators, for example, presented great consistency in their priorities. Within the first eight priorities of managerial knowledge, only the topic "how to select (build) a team" was not chosen by both groups. Other topics were equally considered as high priorities by the two groups of participants, as presented in table 8.

- 7.4.10 In order to ensure that the ten priority choices of each group are included in the list of category priorities, the latter may thus include more than ten topics, some of which were chosen by only one group and some by two which present the gate operators' results for managerial knowledge and attitudes.
- 7.4.11 The ten topics which received the highest scores for each category of staff will be used for designing the first training program for each staff category. The other topics will be considered in the design of a long-term training program.
- 7.4.12 The top priority topics (knowledge and attitudes) for each category of staff are listed below.

Table 2: Compilation of priorities (Chief Engineers, divisional engineers, resident engineers and others)

Number of participants: 20

MANAGERIAL KNOWLEDGE	SCORE
1. How to collect data	114
2. How to plan human resources	81
3. How to make decisions	74
4. How to set standards to evaluate performance	56
5. How to analyze data	53
6. How to set priorities) How to give and receive feedback)	52 52
7. How to design finance systems	41
8. How to formulate plan	38
9. How to know job description	34
10. How to improve work facilities	33

Table 3: Compilation of priorities (Chief engineers, divisional engineers, resident engineers and others)

Number of participants: 20

ATTITUDES	SCORE
1. Patience	154
2. Trust	98
3. Friendly	88
4. Motivation	59
5. Good listener	53
6. Sharing	52
7. Interest	51
8. Cooperative	48
9. Liking others	46
10. Convincing	41

Table 4: Compilation of priorities (Assistant resident engineers, assistant divisional engineers, mechanical engineers, Deputy Directors and design engineers)

Number of participants: 23

MANAGERIAL KNOWLEDGE	SCORE
1. How to make decisions	76
2. How to solve problems	60
3. How to lead a team	53
4. How to assess problems	52
5. How to motivate staff	52
6. How to set priorities	47
7. How to monitor and supervise	46
8. How to design information system	45
9. How to give instructions	44
10. How to build a team	43

Table 5: Compilation of priorities (Assistant resident engineers, assistant divisional engineers, mechanical engineers, Deputy Directors and design engineers)

Number of participants: 23

MANAGERIAL ATTITUDES	SCORE
1. Responsibility	101
2. Open minded	86
3. Friendliness	81
4. Trust	77
5. Flexibility	71
6. Interest	68
7. Decisive	60
8. Sharing responsibility	59
9. Self-confidence	46
10. Seriousness	37

Table 6: Compilation of priorities (Finance and administrative managers)

Number of participants: 21

MANAGERIAL KNOWLEDGE	SCORE
1. How to train staff	54
How to evaluate staff and prepare report	54
2. How to plan training programs	53
3. How to know duties, tasks and responsibilities of staff	47
How to obey orders	47
4. How to make decisions	45
5. How to design job description	43
6. How to assess and control staff and equipment	37
7. How to know rules and regulations	34
8. How to assess behavior of staff	32
9. How to give instructions	29
How to supervise and control staff	29
How to make analysis of laws	29
How to develop filing system	29
How to make staff to respect others	29
10. How to write guidelines for staff to follow	28
How to deal with conflicts	28
How to build a team	28

Table 7: **Compilation of priorities (Finance and administrative managers)**

Number of participants: 21

MANAGERIAL ATTITUDES		SCORE
1.	Honest	106
2.	Respect	68
3.	Fair/Just	53
4.	Balance	45
5.	Self-confidence	42
6.	Patience	37
	Responsiveness	37
7.	To be sweet	34
8.	Flexible	33
9.	Supportive/Helpful	30
10.	Care	29

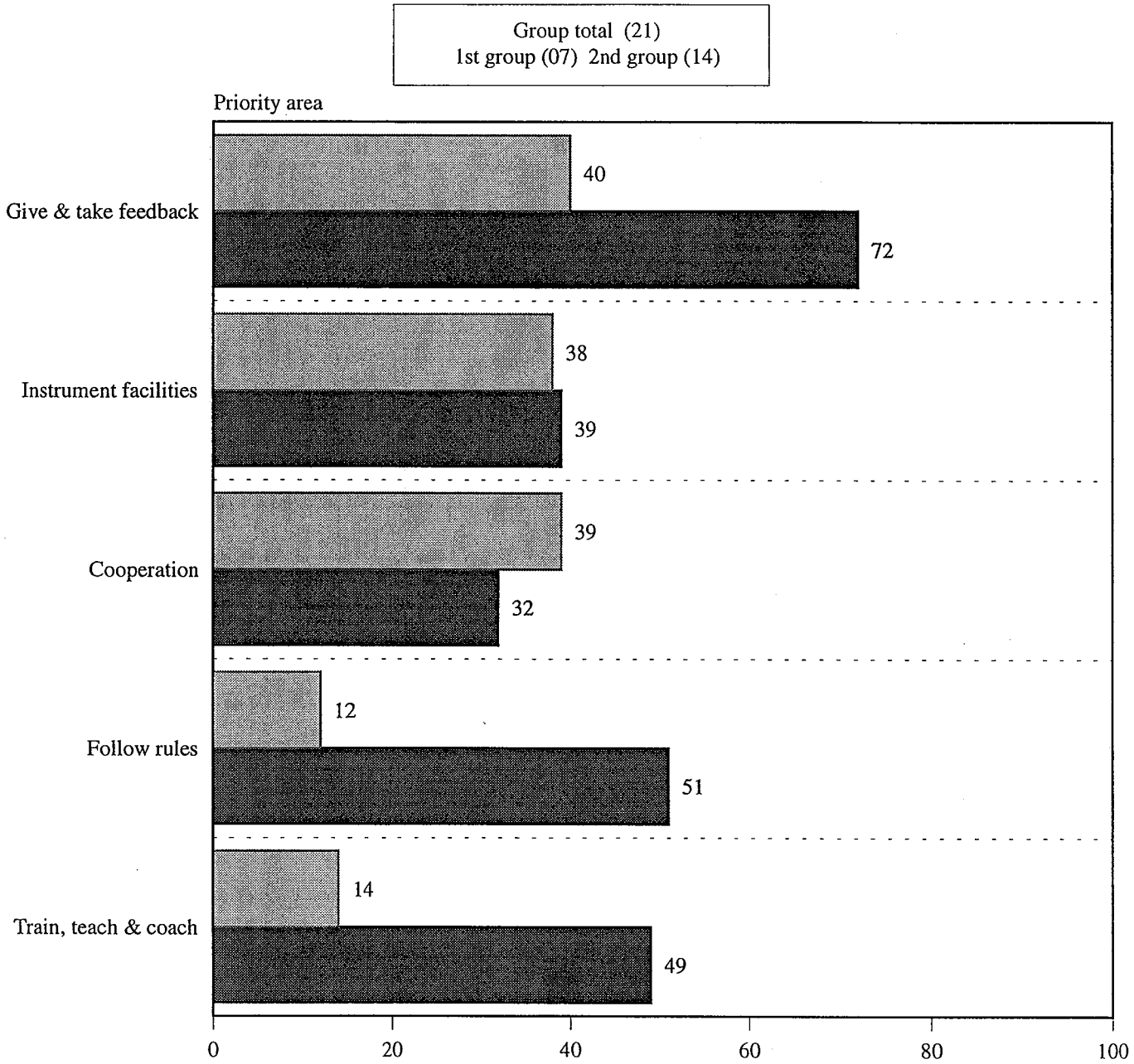
Table 8: Compilation of priorities (Gate operators)

Number of participants: 21

Group No		1	2	Total
No of Participants		7	14	21
GAPS IN MANAGERIAL KNOWLEDGE		SCORE		
1.	How to give and receive feedback	40	72	112
2.	How to keep instruments/equipment/facilities in good condition	38	39	77
3.	How to cooperate	39	32	71
4.	How to follow rules	12	51	63
5.	How to train, teach and coach staff	14	49	63
6.	How to select (build) a team	--	61	61
7.	How to get information about water discharge	22	34	56
8.	How to interact with engineers, how to co-ordinate with others	14	32	46
9.	How to receive information	--	44	44
10.	How to understand instructions	--	41	41
11.	How to use/choose communication facilities	--	39	39
12.	How to work in groups	--	37	37
13.	How to be a good leader	27	--	27
14.	How to know the indent	26	--	26
15.	How to obey orders	21	--	21
16.	How to make decisions	20	--	20
17.	How to communicate	14	--	14

Figure 2:

GAPS IN MANAGERIAL KNOWLEDGE HIGHEST SCORES FROM GROUP PRIORITIES - GATE OPERATORS



	Scores				
	Give & take feedback	Instrument facilities	Cooperation	Follow rules	Train, teach & coach
Series 1	40	38	39	12	14
Series 2	72	39	32	51	49

Series 1
 Series 2

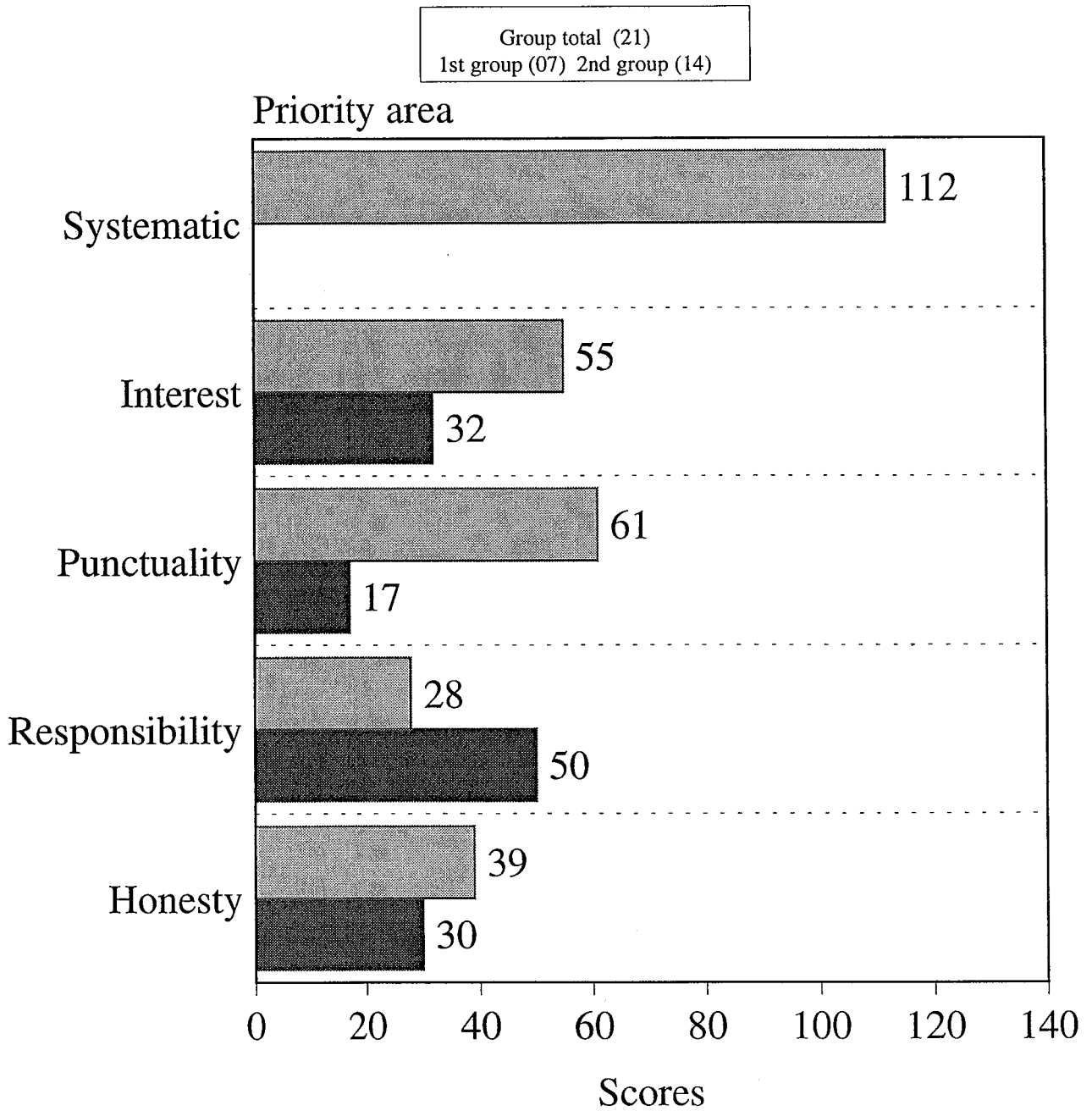
Table 9: Compilation of priorities (Gate operators)

Number of participants: 21

GROUP NO		1	2	TOTAL
NO OF PARTICIPANTS		7	14	49
GAPS IN ATTITUDES		SCORE		
1.	Systematic	--	112	112
2.	Interest	32	55	87
3.	Punctuality	17	61	78
4.	Responsibility	50	28	78
5.	Honesty	30	39	69
6.	Cooperation	--	60	60
7.	Be positive	--	55	55
8.	Hard working	--	42	42
9.	Full commitment in the work	36	--	36
10.	Politeness	--	37	37
11.	Caring (Loving)	--	32	32
12.	Respectfulness	--	28	28
13.	Friendliness	--	27	27
14.	Patience	24	--	24
15.	Self-confidence	18	--	18
16.	Efficiency	14	--	14
17.	Fair & show interest to help and train others	12	--	12

Figure 3:

GAPS IN ATTITUDES HIGHEST SCORES FROM GROUP PRIORITIES - GATE OPERATORS



	Systematic	Interest	Punctuality	Responsibility	Honesty
Series 1	112	55	61	28	39
Series 2		32	17	50	30

Series 1
 Series 2

8. ORGANIZATIONAL CONSTRAINTS

8.1 INTRODUCTION

- 8.1.1 A key element in the TNA was the identification by the participants of organizational constraints affecting their job performance.
- 8.1.2 One session in the program for each group was designed to allow the participants to assess organizational constraints within MOI and recommend ways of overcoming them. The session aimed, first, to facilitate awareness among the participants of the factors which prevent them from achieving the organizational objectives and secondly, to influence them to propose possible solutions for the problems. These factors are external to, and independent of, the capabilities of the staff, and to overcome the problems they cause, other kinds of interventions rather than training are needed.

8.2 METHODOLOGY

- 8.1.1 The concept of organizational constraints was presented and discussed and the main areas in which such constraints may arise were listed under two headings, as follows:

I. CONDITIONS

- A. Human resources
- B. Financial resources
- C. Material resources
- D. Information /Communication (facilities)
- E. Rules and procedures
- F. Knowledge and skills

II. MANAGERIAL PROCESSES

- G. Guidance, monitoring and evaluation
- H. Interference by politicians and others
- I. Interaction with farmers.

- 8.2.2 The 'Trip around the table' technique (annex 7 of Part V) was used for this session. This requires the participants to be divided into small teams, each of which elects one of its members as rapporteur.

- 8.2.3 The rapporteur is responsible for discussing and listing the contributions made by the members of his team, and for visiting the other teams, sharing his team's constraints and recommendations and obtaining their suggestions for the improvement of those listed by his own team.
- 8.2.4 The improved lists from each team are collected and collated at the end of the session.
- 8.2.5 The participants in each group were divided into four teams, and the topics listed above distributed among them as follows:

- Team A: Human resources
 Financial resources
 Interaction with farmers
- Team B: Material resources
 Information/communication
- Team C: Rules and procedures
 Knowledge and skills
- Team D: Guidance, monitoring and evaluation
 Interference by politicians and/or any other types
 of people.

8.3 RESULTS OF THE 'TRIP AROUND THE TABLE' SESSION

8.3.1 This session was carried on in a free atmosphere and the participants listed many constraints which they faced in their jobs and made recommendations as to how they could be overcome. Some examples of the different kinds of constraints identified by different categories of staff, and their proposals for overcoming them, are given below.

CONSTRAINTS

RECOMMENDATIONS

Chief Engineers

Human Resources

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Shortage of engineers and technicians • Shortage of skilled laborers | <ul style="list-style-type: none"> • Better terms service • Recruitment of more staff and training of staff, locally and abroad. |
|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|

Interaction with farmers

- Vandalism of irrigation structures
- No clear policy regarding the rights and duties of each group
- Interference by politicians and/or any other type of people
- Gaps in setting priorities which interrupt programs.
- More interaction with farmers
- To design clear policies to identify MOI staff and farmers' rights and duties.
- Training on how to set priorities among politicians and other MOI officials.

Assistant Engineers

Financial Resources

- Shortage of budget for implementation of project
- None rigid financial laws
- Slow process in making financial decisions
- Shortage of liquid money within the budget
- To find external loans for major projects.
- Flexibility in laws
- Speed up the financial decisions
- Finance people should be very keen to follow the changes in the market.

Finance and Administrative Managers

Rules and Procedures

- Conflict generated by the financial policy
- Lack of understanding in implementing the rules
- Explain and discuss with people about the financial rules since the beginning
- MOI needs consultants to assist staff on this subject.

Knowledge/Skills

- Lack of training programs
- Lack of evaluation procedures
- Regular training programs to be conducted for the staff
- Staff's knowledge should be evaluated by others.

Gate Operators

Information/Communication

- No transport during working
- Communication gap

Note: The recommendations on how to overcome constraints by the group of gate operators were briefly discussed in plenary, but not written down by the group participants due to shortage of time.

Human Resources

- Lack of pure drinking water for laborers
- Lack of medical facilities (dysentery and Schistosomiasis Bellasia)
- Lack of training.

8.3.2 Complete lists of the constraints and recommendations for overcoming them produced by each category of staff are given in annex H of Part II.

PART III

TRAINING NEEDS AND ORGANIZATIONAL CONSTRAINTS ASSESSMENT

**FOR RESOURCE GROUPS: TOP MANAGEMENT, RESEARCHERS
AND TRAINERS**

PROCESSES AND FINDINGS

9. TOP MANAGEMENT

9.1 INTRODUCTION

- 9.1.1 To be successful, management training and development for improving organizations must have support from the top management, who must devote sufficient time and effort to participate in it.
- 9.1.2 Key conditions must exist before initiating management training and development in any organization as the outputs of this program are mainly individual, group and organizational behavior changes.
- 9.1.3 Among these conditions, the top managers must understand and participate in all phases of this program, which proposes behavioral changes through the implementation of a range of training activities and of other kinds of interventions designed to overcome constraints identified during the Training Needs Assessment.
- 9.1.4 It would be unrealistic to expect top managers and all other levels of managers to make decisions and support new activities and types of behavior within the organization if they are not aware of the kind of program that is going on and why their staff is behaving in different ways and proposing different approaches to their jobs.
- 9.1.5 Management training and development requires that managers of the organization perceive and recognize the needs for improving competence and performance in the interests of both the individual and the organization.
- 9.1.6 Management training and development require full commitment of the top managers to implement the whole program to ensure successful changes.
- 9.1.7 At MOI, the top managers were supportive to the proposal for developing the training cycle, which includes improving personnel capabilities and overcoming organizational constraints.
- 9.1.8 The top managers of MOI were exposed to a special session which was tailored to provide them with the opportunity of participating in an experiential learning process and reflecting on important issues of MOI as an irrigation organization. The processes and findings related to the activities proposed for this session are described below.

9.2 OBJECTIVES OF TOP MANAGEMENT SESSION

- 9.2.1 The major objective of the first workshop was to present the framework and illustrate the methodology IIMI uses to assess training needs and organizational constraints to MOI top management and senior officers.

9.2.2 The session was designed to (1) obtain inputs and feedback from the MOI officials on TNA approach, and (2) facilitate awareness of their responsibility to continuously support future program for promoting institutional development at MOI.

9.2.3 The top management session included:

- Introduction of the concept of institutional development and the role of managers and leaders
- Review of the concepts of irrigation management
- Job analysis
- Requirements of knowledge, attitudes and skills to perform managerial duties
- Identification of organizational constraints.

9.3 METHODOLOGY

9.3.1 The session was conducted through group techniques to facilitate interaction and participation.

9.3.2 Initially, the First Under Secretary of MOI, Director, International Cooperation of IIMI and other senior officers of MOI and IIMI welcomed the participants and explained to them their interest and support for the IIMI/MOI collaborative program.

9.3.3 The activities carried out during this session were as follows:

- (a) A "Getting to know each other" exercise provided an opportunity for the participants to get acquainted with one another and facilitated friendship and openness.
- (b) The Senior Irrigation Management Specialist of the IIMI team presented the concept of irrigation management, role of managers and leaders, and the analytical framework for irrigation management and discussed with the participants the distinction between managerial and technical activities.
- (c) The participants were invited to reflect on their major duties individually and in small groups.
- (d) Using the results of the previous exercises, the participants were invited to distinguish between managerial and technical aspects of their duties.

- (e) The participants were invited to focus on managerial aspects of the jobs and identify the knowledge, attitudes and skills needed to perform them. A quick presentation of the concepts of knowledge, attitudes and skills was conducted by the IIMI Training Specialist to facilitate their understanding.
- (f) The brainstorming technique was used to list areas of managerial knowledge and attitudes on flipcharts.
- (g) The participants identified the organizational constraints and recommended ways of overcoming them, through a modified nominal group technique (annex 8 of Part V).
- (h) The exercise was evaluated by the participants to provide feedback on its effectiveness, with a view to improving it in future TNA assessments.

9.4 THE CONCEPT OF INSTITUTIONAL DEVELOPMENT AND THE ROLES

- 9.4.1 The concept of Institutional Development was introduced by the Irrigation Management Specialist as described previously in section 4.2 on Part II of this report.
- 9.4.2 This process which must take place within the organization compels its managers to implement a series of activities and/or other kinds of interventions to respond to the staff and organization needs.
- 9.4.3 The organizational linkages with Training and Research (section 4.2.3, figure 1, Part II) were introduced to demonstrate to the participants, the inter-relationship between the three major activities of the organization. The figure provided the officials with the global view of the agency for them to reflect on the needs of initiating to review all three areas (strategic planning and human resources development, training and research) of the MOI to improve its effectiveness as an irrigation organization.
- 9.4.3 The concepts of managers and leaders have also brought some insights to the participants to reflect on their own attitudes and behaviors. This introductory presentation has sensitized the participants to fully participate in the assessment of attitudes related to the performance of their duties in the later stage of this workshop.

9.5 THE ANALYTICAL FRAMEWORK OF IRRIGATION MANAGEMENT

- 9.5.1 The analytical framework of irrigation management was presented and discussed with the top managers. The discussion aimed to translate the general management decision-making processes which occur in all kinds of organizations into processes specific to the management of irrigation systems. The framework considers decision-making to be a major factor in determining the performance of irrigation systems.

- 9.5.2 The discussion provided an opportunity for the MOI managers to reflect on the technical and managerial dimensions and inter-relationships of irrigation jobs and on the importance of improving managerial capacity among professionals in irrigation to meet the needs of a new organization and the country.
- 9.5.3 Questions related to management organization were discussed, including decision-making processes, information flows and control processes, management of coordination, people, and so on.
- 9.5.4 This session was considered relevant by the participants because it has provided an opportunity for increasing understanding of the concept of irrigation management and of the managerial and technical aspects of irrigation jobs.

9.6 JOBS ANALYSIS

- 9.6.1 This session aimed to analyze the current duties performed by MOI officials and discuss the managerial and technical activities involved in performing them.
- 9.6.2 This analysis was carried out using the 'Take three for better brainstorming' technique described in section above, which provided the participants with the opportunity to think about current duties individually and to discuss them in small groups with the peers of the same directorate to decide on three major duties
- 9.6.3 The rapporteurs selected by each group wrote three major group duties on the flipchart and presented to the audience. The distinction between managerial and technical aspects of these duties were discussed with the assistance of the Irrigation Management Specialist.
- 9.6.4 As a result of this activity, lists of major duties performed by the participants were developed. A sample of duties as a result of the individual phase and group phase respectively is presented below: Additional duties, listed by the participants individually, are presented in annex I of Part III.

Top Management - major duties (sample of individual lists)

- A) • Organizing, guiding and supervising HRS staff activities for carrying HRS task.
• See to the proper utilization of equipment, computer facilities, labs
• Budget preparation and purchase control.
- B) • Checking incoming mails, putting programs and administration.
• Visit sites to see progress of work.
• Writing reports, solving implementation problems.
- C) • Planning.
• Monitoring
• Evaluation

- D)
 - Plan and manage the available human resources and select appropriate measures for performance.
 - Evaluate performance and initiate measures for corrective actions.
 - Introduce monitoring programs.
- E)
 - Follow up on the implementation of the different projects.
 - Financing and budget preparation and follow up on expenditure and approval with Ministry of Finance.

Top Management - major duties (group lists)

First Under Secretary

- Supervision of all activities carried out by all Directorates and General Departments of MOI.
- Design and plan annual programs.
- Study and monitor activities and suggest solution for major problems.

HRS

- Organizing, guiding and supervising HRS staff activities for carrying HRS tasks.
- Draw up work plan for the tasks of HRS.
- Budget preparation and control of purchase.

Dams - Nile Water

- To operate dams, check water level and flows on river and dams; in case of dams to compare with what programmed u/s level to be maintained and flows d/s from dams and then flows into irrigation canals.
- Forecast of flows and drawing programs for next day dam operations.
- Follow up activities of HQ and field offices.

Projects

- Evaluate performance of design teams and initiate measures for corrective actions; introduce monitoring programs.
- Visits to the site of the works to check performance of the resident engineers and quality of the works.
- Preparation of budget for different irrigation projects and follow financing with the Ministry of Finance and Planning.

Gezira, Managil, Girba and Rahad

- Follow up the water control systems to ensure that crop water requirements, arrive to the different locations in the scheme without delay and implement urgent remedial action if any.

- To use and spend the approved budget in the appropriate items and the right time without delay.
- To follow the supervision program of visiting the different localities and offices in the scheme to solve problems in the field and ensure the success of implementation.

Finance and Administration Affairs, Planners and Coordination

- Implementation:
 - Follow up of execution of different rehabilitation work in different skills.
 - Budget preparation
 - Updating feasibility studies for projects according to the strategic plan for the ministry.

Mechanical and Electrical

- Revision of previous daily works.
- Evaluation
- Feedback.

9.6.5 The lists generated in the small group discussion were displayed on the wall and were analyzed discussed in plenary session, and used later, during the assessment of requirements (managerial knowledge and attitudes) to perform irrigation jobs.

9.6.6 Most of the participants expressed in their evaluation satisfaction with the process of job and duties analysis and their translation into managerial and technical skills.

9.6.7 The following quotations show the participants' level of satisfaction with this exercise:

‘Conduct more training programs of this kind’.

‘More workshops of this sort are suggested if possible’.

‘The methodology of explaining the concept of knowledge, attitudes and skills was a strong point among many others during this program’.

‘Job and duties analysis was another stronger topic during the workshop’.

9.7 MANAGERIAL KNOWLEDGE AND ATTITUDES

9.7.1 This session aimed to interpret the irrigation duties of MOI into the managerial knowledge and attitudes required to perform these duties satisfactorily.

- 9.7.2 The existing duties for MOI officials were analyzed and translated into skills by the participants after a brief explanation by the IIMI Training Specialist of the concepts of knowledge, attitudes and skills (see section 7.1.2 above).
- 9.7.3 The brainstorming technique was introduced by the facilitator, who invited the participants to list as many elements of managerial knowledge and related attitudes as they could think of, based on the analysis of duties which they had carried out during the previous session.
- 9.7.4 The lists of elements of managerial knowledge and attitudes compiled during the brainstorming session were discussed by the Irrigation Management Specialist in plenary.
- 9.7.5 This exercise also facilitated awareness of the importance of developing managerial skills among professionals in irrigation.
- 9.7.6 The lists of managerial knowledge and attitudes provided by the participants in this session are presented below.

Managerial knowledge

- Knowledge of staff capabilities
- How to have good knowledge of staff skills
- How to motivate the staff to do the job
- How to communicate well
- How to relate to the staff
- How to identify the objectives
- How to encourage

Managerial Attitudes

- Appreciation
- Friendliness
- Listening (good listener)
- Mutual respect
- Organized and systematic
- Confident

9.8 IDENTIFICATION OF ORGANIZATIONAL CONSTRAINTS AND WAYS TO OVERCOME THEM

- 9.8.1 The concept of organizational constraints was presented and discussed and the various areas of concern were identified under the headings 'conditions' and 'management processes' to facilitate the participants' understanding and analysis.

- 9.8.2 The Nominal Group Technique was used in a modified way to collect information and illustrate the process by exercising it with the participants.
- 9.8.3 In summary, this technique comprised two phases instead of four due to time constraints. The phases were conducted as follows:
- (a) Each participant was invited to list the organizational constraints individually, on a separate sheet of paper (annex 8 of Part V).
 - (b) The participants were then invited in turn to list their organizational constraints on a group flipchart, and contributions from all the lists had been transferred to the flipchart.
- 9.8.4 Individual lists of constraints and the respective recommendations were compiled and are presented in full in annex J of Part III. Some examples are given below.

Human resources

Constraint

- Lack of experienced engineers

Recommendation

- Appoint new graduate engineers

Constraint

- The qualified experienced engineers are very reluctant to work for the Design Directorate and also new recruits of the required calibre.

Recommendation

- Solving accommodation problems, giving more incentives, solving transportation problems.

Constraint

- Shortage in skilled staff

Recommendation

- Appointing more staff
- High training and continuous contact with outsiders.

- 9.8.5 The group list of constraints as a result of the second phase of the nominal group technique is presented below:

Group list of constraints

- Lack of financial resources
- Lack of training to staff
- Satisfy material needs
- Communication gaps which prevent manager to collect data
- Shortage of well-trained staff
- Lack of technical information
- Interference by politics
- Communication gap between departments
- Lack of health-care
- No proper organization structure
- Lack of experienced engineers
- Complexities in rules and procedures
- Delay in decision making
- Lack of interaction with farmers
- Lack of equipment
- Lack of guidelines of procedures for work
- Lack of human resource plan
- Lack of communication due to foreign language.

10. RESEARCHERS

10.1 INTRODUCTION

- 10.1.1 IIMI is an international agricultural research center which seeks to strengthen national efforts through assistance for the development of research, management training and information.
- 10.1.2 IIMI develops collaborative research in diverse countries and disseminates its results through its management training programs.
- 10.1.3 The researchers are one of IIMI's target groups. IIMI expects to work in partnership with research organizations in countries to provide irrigation agencies with relevant research results for the improvement of irrigation systems.
- 10.1.4 Some members of the research community of MOI in Sudan were invited to participate in the TNA exercise for MOI to get acquainted with the joint program of IIMI and MOI, which aims to improve skills of irrigation personnel to increase motivation and, consequently, the quality of their services to the agricultural agencies and farmers..

10.2 OBJECTIVES OF THE RESEARCHERS' SESSION

10.2.1 The major objective of the workshop for MOI researchers as for the top management was to present the framework and illustrate the methodology IIMI uses to assess training needs and organizational constraints among staff of irrigation agencies.

10.2.2 The session was designed to (1) obtain inputs and feedback from the researchers on TNA approach; and (2) sensitize them to develop irrigation management research whose results should be used as fresh information for strengthening management training program at MOI and improving its performance.

10.2.3 In order to accomplish this objective, the TNA session for Researchers was developed in one day, providing the participants with the opportunity for:

- Introduction of the concept of institutional development and the role of managers and leaders.
- Review of the concepts of irrigation management
- Job analysis
- Requirements of knowledge, attitudes and skills to perform managerial duties
- Identification of organizational constraints.

10.3 METHODOLOGY

10.3.1 The methodology for this session was similar to that for the top management session presented in the previous chapter. In summary, it comprised:

- (a) a 'Getting to know each other' exercise
- (b) presentation and discussion of the concepts of irrigation management roles of managers and leaders and the Analytical Framework of Irrigation Management
- (c) discussion and listing of major duties
- (d) identification, discussion, and listing of managerial knowledge, attitudes and skills needed to perform research activities, using a brainstorming technique to facilitate participation
- (e) definition of priorities among managerial knowledge and attitudes

- (f) identification of organizational constraints, using the 'trip around the table' technique
- (g) evaluation of the TNA session by the participants.

10.4 THE CONCEPT OF INSTITUTIONAL DEVELOPMENT AND ROLES OF MANAGERS AND LEADERS

- 10.4.1 The concept of Institutional Development was introduced by the Irrigation Management Specialist as described previously in section 4.2 of Part II of this report.
- 10.4.2 The organizational linkages with training and research (section 4.2.3, figure 1, Part II) were introduced to demonstrate to the participants the inter-relationship between the three major activities of the organizations. The figure provided the researchers with the global view of the agency for them to reflect on their roles and responsibilities for developing relevant studies to solve MOI problems and/or promote management innovation within the organization.
- 10.4.3 The concepts of managers and leaders have also brought some insights to the participants. They should think of themselves as managers-leaders of MOI research teams and assess the kinds of attitudes and behaviors they present to their subordinates, peers, superiors, field workers and farmers, while developing research activities. This introductory presentation has sensitized the participants to actively participate in the assessment of skill requirements to perform their jobs in the latter stage of this exercise.

10.5 THE ANALYTICAL FRAMEWORK OF IRRIGATION MANAGEMENT

- 10.5.1 This subject was presented by the Irrigation Management Specialist to facilitate understanding of the management and technical aspects of irrigation jobs and their relationship with the development of research in irrigation management.
- 10.5.2 An oral assessment on the research duties was done to point out their management elements. It was stressed that both technical and managerial components are important and that both should be treated at the same level of attention.
- 10.5.3 It was observed that the discussion of the analytical framework was useful. This was expressed by a participant who came with the valuable summary of the previous presentation showing high level of understanding and attention to the subject. The participants also demonstrated their interest in irrigation management topic through the individual evaluation. Some of the suggestions were -

'To have more workshops in the future'

' Increase the time of participation to two to three days'

10.6 JOBS ANALYSIS

- 10.6.1 Just as in the case of the top management, this session aimed to analyze the current duties performed by MOI researchers and discuss the managerial and technical activities involved in performing them.
- 10.6.2 This analysis was carried out using the 'Take three for better brainstorming' technique described in section above, which provided the participants with the opportunity to think about current duties individually and to discuss them in small groups with the peers and decide on three major duties.
- 10.6.3 The rapporteurs selected by each group wrote three major group duties on the flipchart and presented to the audience. The distinction between managerial and technical aspects of these duties were discussed with the assistance of the Irrigation Management Specialist.
- 10.6.4 As a result of this activity, lists of major duties performed by the participants were developed. A sample of duties as a result of the individual phase and group phase respectively is presented below: Additional duties listed by the participants individually, are presented in annex K of Part III)

Researchers - major duties (sample of individual list)

- A) • Planning research program: field work and office
• Identification of research program
• Conducting survey
- B) • Writing progress report
• To send data for analysis
• Conduct research

Researchers - major duties (group list)

- A) • To design research programs
• To conduct training
• To manage personnel
- B) • To identify research problem
• To formulate contract
• To guide research assistants
- C) • To conduct survey
• To monitor water level measurement
• To write progress report

- D)
 - To collect data and information
 - To formulate research proposals
 - To do research

- E)
 - To manage people, office, budget, etc.
 - To perform sedimentation monitoring
 - To plan transportation.

10.6.5 The above lists generated by the small group exercise were displayed on the wall and were analyzed, discussed in plenary session, and used, later during the assessment of requirements (managerial knowledge and attitudes) to perform irrigation jobs.

10.7 MANAGERIAL KNOWLEDGE AND ATTITUDES

10.7.1 This segment aimed to encourage the participants to analyze their major duties and translate them into the managerial knowledge, attitudes and skills.

10.7.2 To accomplish this goal, this segment provided a brief talk on the concepts of knowledge, attitudes and skills which were presented by the IIMI Training Specialist, who encouraged the participants to choose some research duties and analyze the managerial knowledge and attitudes involved in them. The brainstorming techniques was used and long lists of managerial knowledge and attitudes were written as a result of this phase (annex L of Part III). An example of these results are presented as follows:

Managerial knowledge

1. How to interact

- How to conduct meetings
- How to give and receive feedback
- How to identify problems for research

2. How to manage human resources

- How to build team work
- How to design and implement training

3. Planning, monitoring and evaluation

- How to monitor and evaluate progress of work
- How to organize meetings

4. How to use criteria and set priorities
 - How to set priorities
 - How to allocate resources effectively.
5. How to manage information
 - How to collect data
 - How to report findings
 - How to prepare databases

Attitudes

1. How to stimulate communication
 - Interest
 - Receptivity
2. To build up confidence
 - Seriousness
 - Honesty
3. To motivate others
 - Attentive to staff
 - Kindness
4. To improve oneself (or self-improvement)
 - Dedication
 - Creative/Innovative
5. To direct and control
 - Judgement
 - Cooperation

10.7.3 The participants were invited to give priorities on the Brainstorming List, emphasizing the items which should be developed as a course content during the first training program. The ranking sheets were used to record the participants' individual preferences. Afterwards this ranking lists were compiled as explained in section 7.4.7. The final results of this segment are as follows:

Table 10: Compilation of priorities (Researchers)

Total no. of participants - 19

MANAGERIAL KNOWLEDGE	SCORE
1. How to build team work	95
2. How to identify problems for research	80
3. How to set priorities	60
4. How to solve problems	57
5. How to allocate resources effectively	
6. How to monitor and evaluate progress of work	38
6. How to collect data	33
7. How to mobilize resources	29
How to prepare and conduct meetings	29
How to follow up	29
8. How to make decisions	24
9. How to keep confidentiality among team members	23

Table 11: **Compilation of priorities (Researchers)**

Total no. of participants - 19

ATTITUDES	SCORE
1. Interest	90
2. Receptivity	62
3. Responsibility	53
4. Flexibility	52
5. Seriousness	50
6. Honesty	44
7. Judgement	39
8. Attention to staff	29
9. Cooperative	26
10. Confidence	23
Kindness	23

10.8 IDENTIFICATION OF ORGANIZATIONAL CONSTRAINTS

10.8.1 The participants were invited to list the organizational constraints which were contributing to reduce their performance and to recommend ways to overcome them as well.

10.8.2 The 'trip around the table' technique was used to facilitate the collection of constraints and respective recommendations. This technique is explained in section 8.2.2 above.

10.8.3 As a result of this segment, a long list of constraints and recommendations is presented in Annex I of Part III. An example follows:

CONSTRAINTS

RECOMMENDATIONS

A. Human resources

Shortage of skilled and trained laborers

Training for them

B. Financial resources

Shortage of financial resources

The government must develop a relationship with the World Bank for giving support to develop the agricultural and industrial sectors.

C. Material resources

Shortage of instruments, general equipment, etc.

Foreign currency is needed to purchase imported equipment.

D. Information/communication

Lack of international references, journals and general publications.

Purchase informative materials such as books and periodicals.

E. Rules/procedures

Shortage of computer facilities due to policy restrictions

To change policies to improve this situation.

F. Knowledge/skills

Lack of knowledge/skills on methodological aspects of research.

Provide training to gain the right method of carry the research business well.

G. Guidance, monitoring and evaluation

Follow-up work is hardly done

Constant monitoring and evaluation is needed.

H. Interaction with farmers

- Lack of interaction with beneficiaries causes wastage of water

- More interaction with them to guide on the water use.

- Lack of interaction with farmers.
- Encourage farmers to participate in discussing research findings and to encourage researchers to listen to the views put forward by the farmers.

I. Interference by politicians or others

None.

11. TRAINERS

11.1 INTRODUCTION

- 11.1.1 IIMI's Management Training and Development Strategy states that IIMI should give assistance for improving national capacity in countries where IIMI operates, through partnership with existing national training centers and universities. IIMI and MOI have recently initiated a program which has management training as a fundamental activity to improve staff capabilities and consequently, promote institutional development of the organization.
- 11.1.2 IIMI's role in this process is to facilitate awareness of the importance of this program and provide guidance, the planning, training and research in irrigation management while MOI plays the vital role of leading, implementing actions and sustaining the process. IIMI and MOI together will evaluate results afterwards.
- 11.1.3 MOI/IIMI program depends greatly on the Training Unit of the organization. However, it seems that MOI has little experience in planning and developing formal training programs. In the past, the Training Unit implemented training courses mainly for junior and clerical staff.
- 11.1.4 MOI does not have a training center to implement short-term training programs as yet. However, it is coming up in the near future. At present, there is a training officer within Finance and Administration Directorate responsible to the Director which has administered some training for MOI professionals to participate in some programs abroad.
- 11.1.5 The IIMI/MOI joint program for institutional development considers management training as the most important activity to promote effective results. Thus, the strengthening of the training capabilities within MOI will constitute the highest priority of this program.
- 11.1.6 MOI and IIMI will make great effort to improve training staff skills, interest and motivation to lead this collaborative program which is expected to repeat the success of Malaysia.

11.1.7 During the TNA exercise, the session for trainers aimed to bring together MOI irrigation staff who participated in the previous sessions and showed to be sensitive to issues related to management and training.

11.1.8 The participants of the trainers session were informed about the criteria used to select them and were invited to reflect on their interest and availability to contribute to the development of management training programs at MOI in the future.

11.2 OBJECTIVE OF THE TRAINERS SESSION

11.2.1 The major objectives of the Trainers Session were:

- To discuss the concept of management training.
- To describe the roles of trainers.
- To discuss the need for conducting management training at MOI
- To assess the participants' interest to function as trainers at MOI.
- To draft job description for trainers
- To identify major duties and tasks performed by trainers along with the managerial knowledge and attitudes needed to perform them.
- To list the constraints which prevent the implementation of training program at MOI.

11.3 METHODOLOGY

11.3.1 The methodology for this session consisted of:

- 'Getting to know each other' exercise in pairs
- Presentation and discussion of the concepts of management training
- Discuss and exercise through 'trip around the table' technique the major issues related to management training and quality of trainers
- Group exercise to draft a job description for trainers
- To identify major duties and tasks performed by trainers in small groups
- To list the constraints which they could anticipate in implementing training programs at MOI.

11.4 THE CONCEPTS OF MANAGEMENT TRAINING AND THE ROLES OF TRAINERS

11.4.1 This segment aimed to sensitize the participants to the concept of management training and the roles of trainers.

- 11.4.2 Management training was presented as composed of a series of activities designed to develop the ability to acquire or improve management techniques and methods related to the participants' job performance.
- 11.4.3 Management Training includes activities and learning opportunities for improving managerial competence such as leadership, communication style, development of self-confidence, etc.
- 11.4.4 The roles of trainers are diverse. The major roles cited were: planners, implementers, motivators, facilitators of learning, etc.
- 11.4.5 Management training activities demand from the trainers commitment, dedication, hard work, belief, persistence and others.
- 11.4.6 The presentation was followed by questions from the participants who wanted to know how they could develop management training skills since they have never been involved in this kind of training before.
- 11.4.7 The plenary discussion provided the participants with important insights on their personal and interpersonal development which contributes to increase sensitivity toward others, self-esteem, motivation and also abilities to face problems with security and self-confidence.

11.5 ANALYSIS OF THE MAJOR QUALITIES OF TRAINERS

- 11.5.1 The participants were invited to play the 'Trip around the table' technique explained above which provided them with the opportunity of reflecting and discussing in small groups the following issues:
 - (a) Qualities of trainers for management training
 - (b) Objectives of management training
 - (c) Conditions to become a trainer for management training at MOI
 - (d) Needs for conducting management training at MOI.

11.5.2 The results of this exercise are as follows:

- A. The participants considered that the trainers should have the following qualities:
 Technical knowledge, managerial knowledge, planning, design, communication, belief, interest, impartiality, honesty, friendliness, punctuality, flexibility, systematic, motivation, encouragement, self-confident, respectfulness and experience.
- B. The needs the participants perceive for conducting management training at MOI were:

- (a) To have a training center
- (b) To manage visual aids "OHP" flipchart etc. and equipment for training outside
- (c) Other training facilities
- (d) Accountabilities (responsibilities) to conduct duties
- (e) To obtain financial support for implementing training programs
- (f) To conduct assessment for training needs
- (g) To train trainers and staff
- (h) To plan and acquire materials
- (i) To set objectives and clear tasks.

C. The conditions for the participants to become trainers were described as follows:

To be trained; to have support of the organizational structure; to have official job description (and job specification); to learn how to assess training needs; to have budget for training; to have training venue and other facilities; and to develop a group of trainers and other support staff.

D. The major objectives of the management training programs were cited as:

- (a) To make progress for the work; to develop more skills and more knowledge; to build team work; to gain more of the attitudes; to get interest in the work; to avoid constraints; to build self-confidence in persons; to find solutions; to motivate people; to increase output; to learn how to use new management techniques; to increase participation; and to create good leaders.

11.6 THE DRAFT OF JOB DESCRIPTION FOR TRAINERS

11.6.1 Since the Irrigation Sector of MOI does not have an institutionalized systematic training activity yet, there is no official job description for trainers.

11.6.2 This segment of TNA for Trainers aimed to sensitize MOI management in this matter. An exercise for designing a draft of job description was held in small groups.

11.6.3 The results of this exercise were very diversified. Some groups focussed the trainers' responsibilities on administrative aspects of the training job. Others focussed on the personal traits and on activities specifically for training plan and implementation of programs.

11.6.4 The group's contributions were discussed thoroughly. It was clear, at last, that trainers should have not only the knowledge and skills related to their subject expertise but also a broad vision and outstanding management skills to be able to manage a training center as a whole, including planning system, personnel, facilities, trainees, training peers and training sessions.

11.6.5 A list of trainer's duties related to designing a training program was presented and discussed as follows:

- Assess training needs
- Design training curricula to reflect training needs assessment
- Define training objectives and content
- Select appropriate training methods and techniques
- Design and produce training materials
- Implement the training activities efficiently
- Design a follow-up program to ensure the application of new skills in the job
- Evaluate the training activities systematically to measure the results, and
- Review future plans for improving training activities.

11.6.6 In addition, a series of other duties were discussed to be part of the trainer's job description. For example, a trainer should first prepare a master training plan which involves many duties such as : review the objectives of the irrigation systems in Sudan and assess MOI role within this system; review the structure of MOI as an irrigation organization; review existing training facilities, programs, strategies, etc. in irrigation in the country to be able to strengthen the existing ones and avoid overlapping of training efforts to coordinate between agencies to minimize expenses and promote relevant and effective training programs, etc.

11.7 JOB ANALYSIS

11.7.1 Next step was to write some trainer's duties on the flipchart and exercise the tasks related to them.

11.7.2 The concepts of jobs, duties and tasks were reviewed to facilitate the duties and tasks analysis. An example of the outputs of this exercise is presented below:

Major duty

Preparation and implementation of training programs

Related tasks

- To assess training needs and set objectives
- To prepare training plan
- To select training materials
- To conduct training programs
- To evaluate the performance of trainees

11.8 IDENTIFICATION OF MANAGERIAL KNOWLEDGE, ATTITUDES AND SKILLS

11.8.1 This segment aimed to encourage the participants to analyze the major duties and translate them into the managerial knowledge, attitudes and skills needed to perform them.

11.8.2 To accomplish this goal, this segment was divided into two phases:

- (a) The major duties reported by the rapporteur in the previous segment (job analysis) were written on the flip charts and displayed on the wall. An example of the list of duties is given below.
- (b) A briefing on the concepts of knowledge, attitudes and skills was presented by the IIMI Training Specialist, who encouraged the participants to choose some duties and analyze the managerial knowledge and attitudes involved in performing them.

11.8.3 Some of the major duties identified in the first phase of this exercise were:

- management of training center
- management of training personnel
- conduct conferences and meetings
- setting plan of work.

11.8.4 The brainstorming technique was used and long lists of managerial knowledge and attitudes were written as a result of this phase (annex N of Part III)

A sample of the managerial knowledge and attitudes as a result of the brainstorming technique is presented below:

Managerial knowledge

1. How to interact

- How to convince
- How to encourage staff to be an example for others

2. How to manage human resources

- How to progress in job (career planning)
- How to select training techniques

3. Planning, monitoring and evaluation

- How to prepare agenda for meetings
- How to plan realistically

4. How to use criteria and set priorities

- How to allocate funds
- How to set priorities

5. How to manage information

- How to collect information
- How to conduct meetings

Attitudes

1. To stimulate communication

- Interest
- Flexibility

2. To build up confidence

- Honesty
- Flexibility

3. To motivate others

- enthusiasm
- Motivation

4. To direct and control

- Self-confidence
- Recognition

11.8.5 The participants were invited to give priorities on the Brainstorming List, emphasizing the items which should be developed as a course content during the first training program. Ranking sheets were used to record the participants' individual preferences. Afterwards these ranking lists were compiled as explained in section 7.4.7 above. The final results of this segment were as follows:

Table 12: Compilation of priorities (Trainers)

Number of participants: 14.

MANAGERIAL KNOWLEDGE	SCORE
1. How to plan training activities	68
2. How to communicate effectively	53
3. How to allocate budget for training activities (set priorities)	50
4. How to collect information	47
5. How to motivate staff and trainers	33
6. How conduct meetings	30
How to evaluate and follow up	30
7. How to select trainees	28
8. How to be systematic	26
9. How to set objectives for training	25
10. How to find solutions to problems	24

Table 13: Compilation of priorities (Trainers)

Number of participants: 14

MANAGERIAL ATTITUDES	SCORE
1. Interest	48
2. Patience	45
3. Open mindedness	40
Friendliness	40
4. Cooperation	38
5. Self-confidence	37
6. Fairness	36
7. Strategic	31
8. Judgement	30
9. Accuracy	25
10. Honesty	24
Enthusiasm	24
Punctuality	24
Objectivity	24

11.9 IDENTIFICATION OF ORGANIZATIONAL CONSTRAINTS

- 11.9.1 The participants were invited to list the organizational constraints which were contributing to reducing their performance and to recommend ways to overcome them as well.
- 11.9.2 The 'trip around the table' technique was used to facilitate the collection of constraints and respective recommendations. This technique is explained in section 8.2.2 above.
- 11.9.3 As a result of this segment, a long list of constraints and recommendations was produced. This is presented in Part III, annex O. An example is presented below:

CONSTRAINTS

RECOMMENDATIONS

A	Human resources	
	Lack of training programs	To institutionalize training at MOI.
B	Financial resources	
	Lack of funds	To raise funds for training at MOI.
C	Material resources	
	Lack of transportation	To develop means to provide transportation.
D	Information/communication	
	Lack of up-dated references and journals	To increase budget for foreign component.
E	Rules/procedures	
	Lack of policies for training	To develop policies for training for MOI staff.
F	Knowledge/skills	
	Lack of skills among the MOI personnel mainly for implementing training	This can be overcome by finding a training center to train them.
G	Guidance, monitoring and evaluation	
	Clear and well defined guidelines for execution of work not available.	Clear and well defined guidelines to be issued so that staff can work better.
H	Interference by politicians	
	Mainly provokes unfair selection of trainees	MOI should write policies and define criteria to prevent this interference.
I	Interaction with farmers	
	Lack of knowledge on farmers' needs	MOI should plan action so as to make it possible for staff to interact with farmers.

PART IV
TRAINING NEEDS ASSESSMENT
CONCLUSIONS, RECOMMENDATIONS AND EVALUATION

12. CONCLUSIONS

12.1 INTRODUCTION

12.1.1 Regarding the objectives defined to direct the Training Needs and Organizational Constraints Assessment (TNA) at MOI in Sudan, this study has achieved them and reached a number of conclusions:

12.1.2 It was found that there are factors affecting individual performance at MOI in Sudan and that they are to be approached by both interventions, training and non-training.

12.2 NON-TRAINING FACTORS

12.2.1 The "non-training" factors are predominant and should be faced by the organization.

12.2.2 The TNA workshops have promoted a very favorable momentum for improvement of MOI services. 135 staff members of MOI have actively participated in these workshops, analyzing their jobs and MOI constraints with seriousness, great responsibility and motivation. They have provided the agency with valuable suggestions on how to minimize and/or solve the major problems. There are high expectations among the staff that the constraints which are under control of the MOI will be attended to as soon as possible.

12.2.3 The need for improving the planning system of MOI was detected by this study. Many participants expressed the lack of MOI clear goals, objectives, strategies and guidelines to accomplish their tasks, as major factors for their demotivation, lack of interest and commitment with the organization. They do not know what MOI expects from them and vice-versa.

12.2.4 MOI staff is unaware of the existence of official job descriptions. They have provided a list of major duties they are performing in the field at present.

12.2.5 There is a new organizational structure for MOI to be implemented soon by the agency. This new chart presented as Part I, annex D, will demand the design of systems and procedures, rules and regulations, programming, budgeting, etc. as well as human resources development management and general management of personnel, material resources, organizational culture, etc.

12.2.6 In the review of MOI organizational linkages with training and research, it was found that (i) the two activities are completely autonomous; and (ii) there are no linkages whatsoever between them to strengthen MOI performance through the adoption of research results disseminated by training.

- 12.2.7 There is a consistent feedback from the TNA participants on the existing lack of communication among officials and coordination of irrigation activities within MOI and among other related ministries and departments in Sudan. Lack of clear goals, objectives, strategies and policies at MOI can easily pave the way to create these constraints.
- 12.2.8 There is a general view among the TNA participants that MOI does not have a clear system to evaluate performance of its personnel. They are not aware of the existence of any criteria and procedures for the supervisors to evaluate their performance. The majority of the participants perceive that the performance evaluation is conducted through a confidential report and that the supervisors do not discuss this evaluation process and results with them.
- 12.2.9 There is a lack of Human Resources Development Plan at MOI. Consequently, the participants expressed very often the constraints they face lacking proper training and participation in other events which would enable them to upgrade their knowledge and skills for improving the jobs.

12.3 TRAINING FACTORS

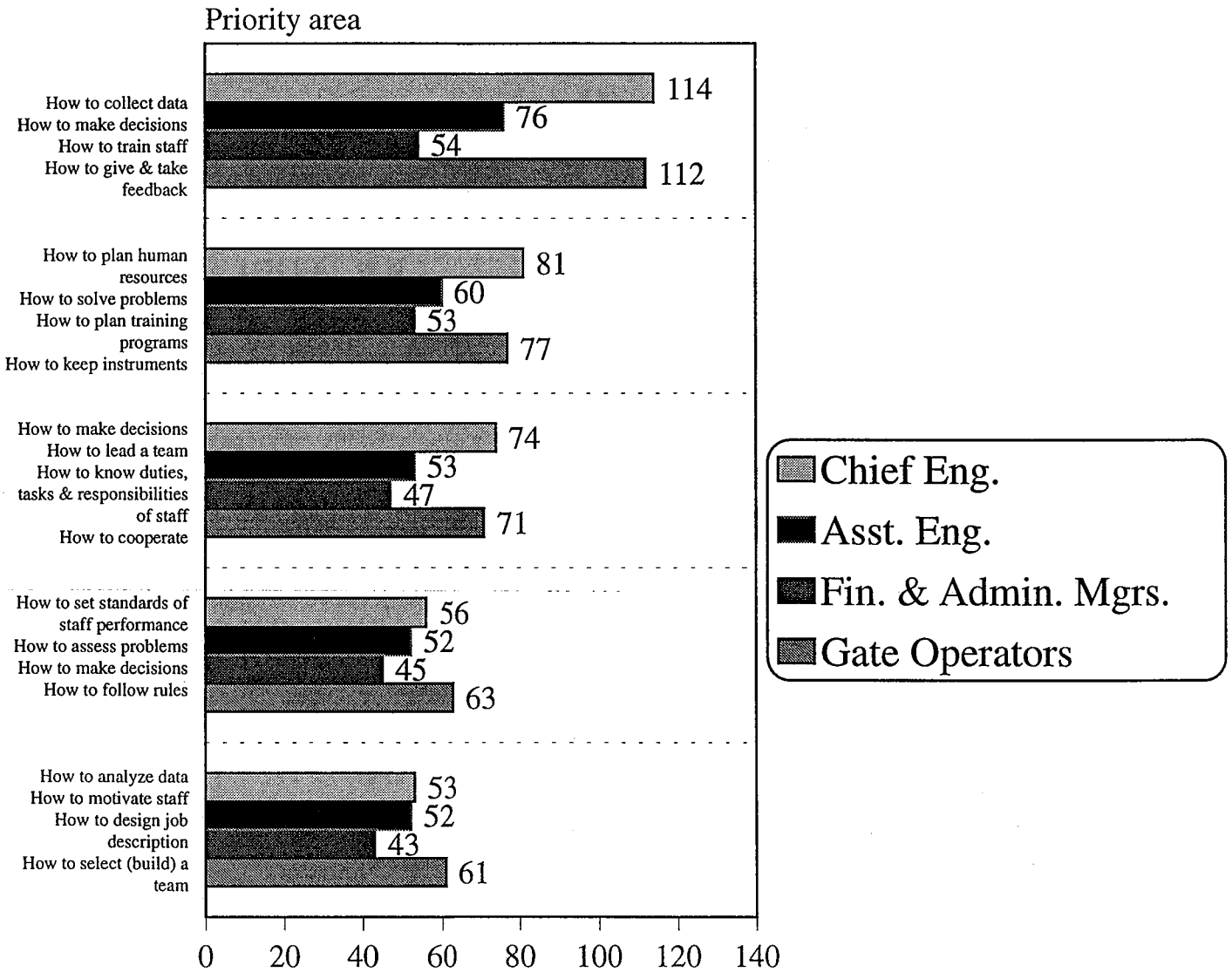
- 12.3.1 The factors related to training solutions are the gaps of managerial knowledge and attitudes. They are listed in the specific annexure G of Part II, as well as in the list of priorities presented in respective sections Part II (tables 2 to 9) and III (tables 9 to 12) for the core staff categories for this study and for trainers and researchers.
- 12.3.2 The following figures represent the five gaps in managerial knowledge and attitudes which were considered the highest priorities by the "core" staff category to be developed as course content during the first training programs.

It was observed that among the highest priorities in managerial knowledge identified by the "core" staff, 35% out of 20 topics are related to the management of Human Resources Development within the organization ("how to train staff", "how to plan training programs", "how to plan human resources", "how to know duties, tasks and responsibilities", "how to design job description", and "how to set standard of staff performance). This suggests that there is a high interest and urgent need of learning how to manage staff affairs among MOI managers. The lack of knowledge and skills on these topics might pave the way to lose self-confidence, which contributes to minimize communication, promote avoidance and increase conflicts.

- 12.3.3 How to make decision was expressed by three groups as the highest priorities of their training program. (15% of the list). Along with this, how to solve problems, how to lead and build a team were also stressed by two groups (10% of the list of topics). These results showed the participants' concern about ways of improving the management of organization.

Figure 4:

GAPS IN MANAGERIAL KNOWLEDGE HIGHEST PRIORITIES FROM ALL "CORE" STAFF CATEGORIES

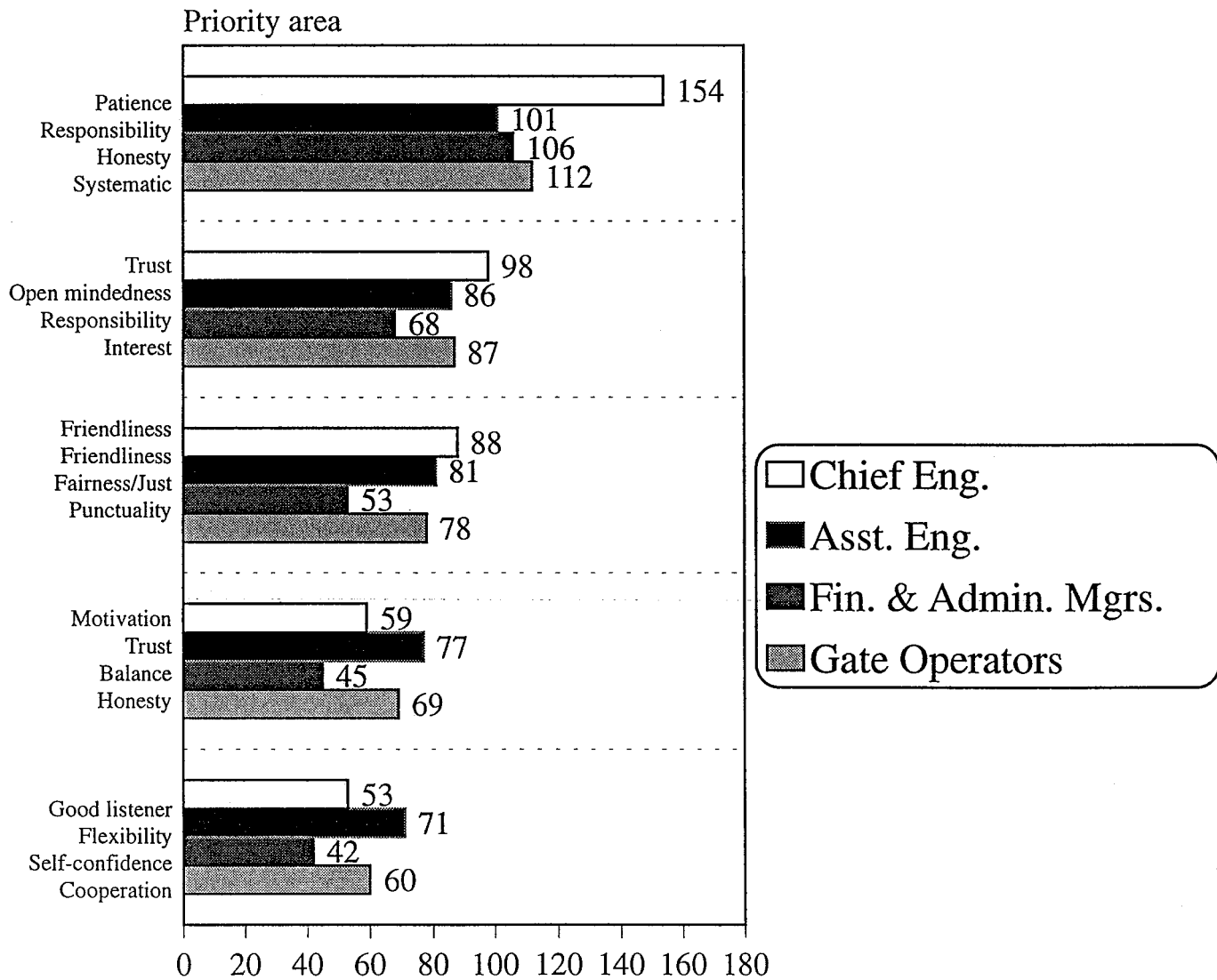


Total scores from all groups

	Chief Eng.	Asst. Eng.	Fin. & Admin. Mgrs.	Gate Operators	
Chief Eng.	114	81	74	56	53
Asst. Eng.	76	60	53	52	52
Fin. & Admin. Mgrs.	54	53	47	45	43
Gate Operators	112	77	71	63	61

Figure 5:

GAPS IN ATTITUDES HIGHEST PRIORITIES FROM ALL "CORE" STAFF CATEGORIES



Total scores from all groups

Chief Eng.	154	98	88	59	53
Asst. Eng.	101	86	81	77	71
Fin. & Admin. Mgrs.	106	68	53	45	42
Gate Operators	112	87	78	69	60

12.3.4 These lists of five highest priorities suggested two important factors which are bringing interest and/or anxiety to the MOI staff: one is related to management of people (train staff, develop job description, to know tasks, responsibilities of staff, etc.) and the other one is related to management of the organization (decision-making, solve problems, team building, etc.)

The gaps in attitudes presented by the "core" staff as the highest priorities showed responsibility, honesty, trust, friendliness repeated by two groups of MOI staff, simultaneously. This suggests that there is a concern among MOI staff about improvement of attitudes related to services of the organization (responsibility); and show respect for MOI and people (through honesty, trust and friendliness). A further analysis of the highest gaps in attitudes selected by the participants shows that out of 20 attitudes, 12 are related to how to deal with people while 8 are related to attitudes of the participants towards MOI. This seems to be a balanced result.

13. RECOMMENDATIONS

13.1 INTRODUCTION

- 13.1.1 This study has generated many conclusions which are expected to be of use to the top management of MOI to design appropriate plans and propose relevant solutions to improve performance of the personnel and the organization.
- 13.1.2 To assist the MOI top management in this task, this study recommends a series of possible interventions as follows:

13.2 NON-TRAINING INTERVENTIONS

- 13.2.1 MOI should give priority to solve and/or minimize, through appropriate interventions, the "non-training" factors which are preventing its staff to work effectively for the organization.
- 13.2.2 It is recommended that the constraints which are under control of MOI and that do not require much funds should be attended to by the authorities soon. This would prevent staff from losing enthusiasm and trust in this endeavor which was developed during the workshops. It is recommended that special attention be particularly given to the constraints expressed by the gate operators and that can be solved without much difficulty.
- 13.2.3 Immediate actions should be taken by MOI top management to review the organizational mission and goals, objectives, strategies etc. in order to provide the staff with proper directions and guidelines for improving their performance. This will greatly contribute to raise the level of motivation, interest and commitment among them. There is a belief, among IIMI team, that the workshops which will be held at the end of September 1993, will promote opportunity for the top managers to exercise the definition of MOI mission, goals, etc., through the Strategic Planning and Human Resources Development programs. This will be an important starting point for the institutional development process at MOI.
- 13.2.4 It is recommended that MOI management take actions for designing accurate and realistic job descriptions for all senior, middle level and supervisory staff along with MOI new organization structure, goals, mission, objectives and defined activities. This study has provided lists of duties which should help compose the job descriptions of the TNA participants. These lists could be used as a basic reference for drafting job descriptions. It is important to emphasize that the lists of major duties presented in this report were written by the TNA participants to reflect their actual responsibilities and work load. The lists should be thoroughly analyzed and revised on the basis of the MOI new objectives, goals, activities, etc.

- 13.2.5 It is recommended that MOI top management involve the managers from different layers of the agency in the re-organization of MOI structure and policies to contribute with their knowledge and long experience within the organization. (This study found out that, from a sample of 56 TNA participants, 45% of their staff work for MOI between 21 to 30 years).
- 13.2.6 A bond to link training and research to strengthen MOI performance is strongly recommended. Research is carried out, evidently, to improve performance either through problem solving or innovation. If research results are not assimilated by the organizational systems, then the purpose of it is lost. Here, training could play a vital role by disseminating research results to assist the staff in learning better ways of improving their jobs and the organizational performance.
- 13.2.7 There is an urgent need to promote communication and coordination within MOI and between MOI and other related agencies in order to strengthen irrigation management in Sudan. The relationship between MOI and other organizations should become closer and stronger than they are at present in order to complement the efforts and minimize expenses of the irrigated agricultural sector. Special strategies should be defined and discussed among MOI managers, implemented and evaluated.
- 13.2.8 The design and implementation of a system to evaluate performance of MOI personnel is another emergent action to be taken by MOI top management. This activity is part of the Human Resources Development Plan which will be a subject of discussion during the MOI/IIMI workshop in September. IIMI training team earnestly hopes that MOI officials would follow up on this staff performance evaluation issue closely.
- 13.2.9 This study strongly recommends MOI to design a master training plan as part of the Human Resources Development Plan to ensure a systematic and well structured plan of programs for MOI staff at all levels, including the new recruits. These activities require continuous review of planning, follow-up and evaluation. To assume responsibilities of the training activities, this study agrees totally with and recommends the proposal stated in annex B of the Final Report on the National Irrigation Rehabilitation Program, Chapter B5, page B17, by Sir M McDonald & Partners Limited.

The report recommended major actions. Among others, the most important one is the creation of a Training Unit to be managed by the Head of Training with the following characteristics.

- « Be a senior and respected person within the organization with the status of Director or Divisional Head, so that his proposals on training receive due attention from other MOI personnel, particularly senior managers;
- Have some experience of training;
- Have experience of working at different levels within the organization, and a commitment to finding out about all MOI job roles and responsibilities;

- Be committed to training and staff development;
- Be a good planner, manager, and administrator, as successful training programs require considerable managerial and administrative skills.» (McDonald & Partners, 1992)

13.3 TRAINING INTERVENTIONS

- 13.3.1 This study has identified the gaps of managerial knowledge and attitudes among MOI technical staff. It is recommended that MOI design a long-term master training plan to reflect the results of this TNA exercise.

The MOI top management is expected to analyze and validate the highest and other priorities defined by the TNA technical staff presented in this report. This aims to get their feedback on the needs of MOI, based on its goals and objectives, to develop appropriate skills among its staff to achieve the expected results for the organization.

- 13.3.2 Initially, training should be designed based upon the highest gaps presented by "core" staff categories during this study. However, it is important to stress that, this study has involved a small percentage of MOI staff, and this staff represents only a sample of the total population. Therefore it is recommended that the curriculum or proposals for training should be disseminated among prospective trainees. This would avoid attendance and/or participation in training programs which do not match with the participants' needs.
- 13.3.3 Special Management Training Programs for MOI are recommended to be designed as soon as possible to reflect the staff needs for training in basic managerial skills, such as, decision-making, problem solving, team building, training plan, etc. as well as to assist in the improvement of responsibility, trust, friendliness, etc. Since a large number of staff are to be trained and as a training center is going to be ready for occupation soon, the training of a core group of trainers in the basic management skills is the next high priority item in the human resources development plan for MOI.

14 EVALUATIONS

14.1 INTRODUCTION

- 14.1.1 This Chapter aims to present the results of two evaluations conducted during the TNA exercise.
- 14.1.2 The first one was on the "Participants' Personal Views on Training" and the second was on the planning and implementation of the TNA exercise.

14.2 EVALUATION ON THE PARTICIPANTS' PERSONAL VIEW ON TRAINING

- 14.2.1 The Annex P of Part IV shows the statements and the respective weighted average scores of the technical staff categories namely, Chief Engineers, Resident Engineers, Assistant Resident Engineers, and Finance and Administrative Managers. The Gate Operators group did not attend this exercise.
- 14.2.2 The questionnaire on "Participants' Personal Views on Training" presents a series of statements for the participants to reflect on their views and circle respective number on a scale from 1 (strongly disagree) to 5 (strongly agree). Number 3 in the scale represents "undecided".
- 14.2.3 In summary, the results suggested that the MOI staff:
- I. Strongly agree that training programs influence their performance and productivity improvements. Average 4.73
 - II. Tend to agree that the top management and supervisors consider training valuable and encourage them to attend courses and apply new knowledge on the job. Average 3.69
 - III. Disagree that MOI management show interest in planning, coordinating, and organizing training programs. Average 2.67
 - IV. Agree that managers' role of coaching is critical and to identify subordinates' needs for training is a part of their job. Average 3.91
 - V. Strongly disagree that time and money spent on training activities are not worthwhile. Average 1.65
 - VI. Disagree that they learn better on their own with manuals and study materials. Average 2.6

- VII. Strongly agree that they learn better in small groups and with instructions, audiovisual aids and printed materials. Average 4.36, 4.66 and 3.86.
- VIII. Agree that they have adequate understanding of their tasks. Average 4.63 (Question 3)
- IX. Strongly agree that well trained staff can replace the assistance of experienced experts in the organization. Average 4.73 (Question 7)
- X. Agree that increased training improve the chances of getting a raise or a promotion. Average 3.93 (Question 15)
- XI. Disagree on the statement that there is little interest in training, in their work group/division. Average 2.7 (Question 20)

14.3 TNA EVALUATION RESULTS

- 14.3.1 The objective of the TNA evaluation was to conduct a systematic appraisal to assess whether the objectives of the program had been achieved and to get an idea of the strengths and weaknesses of the workshops. This evaluation assists the organization to incorporate improvements to any future programs whenever necessary.
- 14.3.2 The participants were given a questionnaire for them to evaluate the success of the workshop with respect to achieving its objectives. A scale of 1 to 5 was given for them to check, where 1 - low, (objective not achieved) and 5 - very high (objective achieved very well). The average of the results obtained from the participants is given below. The average score received for each objective is presented respectively for the (i) Technical Staff group, comprised of Chief Engineers, Assistant Engineers and Gate Operators; (ii) Top Management and Researchers groups; and (iii) Trainers group, accordingly with specific objectives of the sessions.

Table 14: Technical staff groups

Staff Categories	Chief Eng.	Asst Res. Eng.	Fin. & Admin. Mgrs.	Gate Opts.	Gate Opts.	Total Av.
TNA workshop objectives						
A. Evaluation on meeting objectives	Average weighted score					
1. Review of the concept of irrigation management and the distinction between management and technical activities.	4.2	4.5	4.6	5.0	4.9	4.64
2. Job and task analysis.	4.0	4.5	5.0	5.0	5.0	4.7
3. Identification of managerial knowledge, attitudes and skills required to perform tasks.	4.7	4.6	4.9	4.8	4.9	4.78
4. Identification of existing gaps in managerial knowledge, attitudes and skills.	4.2	4.5	4.9	4.8	4.7	4.62
5. Identification of organizational constraints.	4.3	4.3	4.9	4.8	4.8	4.62
6. Establishment of priorities of the training needs assessed.	4.7	4.5	4.9	5.0	4.9	4.8
Total average	4.35	4.48	4.86	4.9	4.86	4.69
B Opinion and feedback						
1. Orientation	4.3	4.5	5.0	4.8	4.9	4.7
2. Group atmosphere	4.7	4.5	4.9	4.8	5.0	4.78
3. Interest and motivation	4.7	4.7	4.8	5.0	5.0	4.84
4. Participation	4.3	4.5	5.0	5.0	5.0	4.76
5. Productiveness	4.0	4.3	5.0	5.0	5.0	4.66
6. Physical arrangement and comfort	3.8	4.4	5.0	5.0	5.0	4.64
Total average	4.3	4.48	4.95	4.0	4.98	4.72
C Rating of the meeting	4.5	4.6	4.9	5.0	4.8	4.76

Table 15: Top management and researchers

Objectives	Staff categories	Top mgt.	Researchers	Total average
A. Evaluation on meeting objectives		Average weighted score		
1.	Review of the concept of institutional development, irrigation management and roles of managers and leaders.	4.3	4.0	4.15
2.	Job and duties analysis; technical and managerial components.	4.3	3.8	4.05
3.	Review of the concept of knowledge, attitudes and skills.	4.2	4.5	4.35
4.	Identification of managerial knowledge, attitudes and skills required to perform major duties.	4.4	3.7	4.05
5.	Identification of organizational constraints.	4.6	3.9	4.25
6.	Establishment of priorities of the training needs assessed. *	-	3.8	3.8
Total average		4.36	3.95	4.15
B. Opinion and feedback				
1.	Orientation	4.4	5.0	4.7
2.	Group atmosphere	4.8	4.4	4.6
3.	Interest and motivation	4.7	4.4	4.5
4.	Participation	4.8	4.5	4.65
5.	Productiveness	4.2	4.0	4.1
6.	Physical arrangement and comfort	4.7	4.1	4.4
Total average		4.6	4.4	4.5
C. Rating of the meeting		4.5	4.25	4.37

* The top management group has not been requested to prioritize the training needs assessed.

Table 16: Trainers group

Objectives	Staff categories	Trainers
A. Evaluation on meeting objectives		
1. Discuss the concept of management training		4.8
2. To describe the roles of trainers		4.9
3. To discuss the need for conducting management training at MOI		4.2
4. To assess the participants' interest to function as trainers at MOI.		4.2
5. To draft job description for trainers.		4.5
6. To identify major duties and tasks performed by trainers.		4.8
7. To list the constraints which prevent the implementation of training programs at MOI.		4.6
B. Opinion and feedback		
1. Orientation		4.8
2. Group atmosphere		4.8
3. Interest and motivation		4.8
4. Participation		4.6
5. Productiveness		4.3
6. Physical arrangement and comfort		4.6
C. Rating of the meeting		4.6

14.3.3 In overall, the participants evaluated the workshops as a positive experience and indicated that the objectives were achieved within the rate from 4.15 to 4.69. They have also highly evaluated the aspects of orientation group atmosphere, interest, motivation and participation. The average of the evaluation of these elements ranged from 4.3 to 4.84 which demonstrate their high level of satisfaction with the human and physical environment of the workshops.

14.3.4 The participants were also invited to state the strong and weak points, and suggestions for the workshops. These are presented in annex Q of Part IV. A sample list of these contributions are presented below.

■ **Strong points**

- * The methodology is good.
- * Good presentation of subject and very clear explanation of lectures.
- * Working in groups; refreshing memory and learning new things.
- * Working atmosphere, participation and the approach.
- * Patience and competence of instructors and the use of audio-visual aids.
- * The staff know how training helps them in their jobs; It was the first time to think of needs for management training.
- * Group atmosphere, well organized and more information in management
- * The strong points were that discussed in the item of constraints and attitudes.
- * Learnt by excellent explanations of irrigation management. Knowledge on duties were not clear to me till I learned them in this workshop.
- * The presentation of the conductors; the differentiation between technical knowledge and managerial knowledge related to promote work.
- * Job and task analysis and identification of existing gaps in managerial knowledge.
- * Identification of managerial knowledge, attitudes and skills required to perform tasks.
- * Knowing of managerial knowledge, identification of organizational constraints and establishment of priorities of training needs.
- * Concentration on the distinction between management and technical activities.
- * Increasing knowledge by training needs assessment.
- * Preparation & coordination for workshop and cooperation and the facilitators' clear explanation making sure that every participant understands the contents.
- * The method of communication.
- * We gained excellent insights about management training.
- * Guidance in the right direction
- * The organizational and the seriousness of the workshops coordinators

■ **Weak points**

- * Limited time and poor physical arrangement and comfort.
- * The time is short for the workshop and the lecture room is not suitable for the event.
- * Room is very warm
- * I do not think that there were any weak points.
- * Lack of participation of supervisors and bosses to know the constraints of their field men.

■ **Proposed suggestions**

- * Longer time and better arrangement and comfort.
- * More arrangement to raise the environmental situation.
- * To increase the course time to maintain more experience.
- * Increase ventilation in the room and make the period longer.
- * Much more time should be given to group discussions. More time should be assigned for elaboration and practical work.
- * I suggest that this type of workshop can promote our job especially for a person like me who has never had any training for the last 24 years.
- * I suggest to give at least one week for each group to get more training and benefit.

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ANNEXURES

PART I

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**TRAINING NEEDS AND ORGANIZATIONAL CONSTRAINTS ASSESSMENT
EXERCISE HELD AT THE MINISTRY OF IRRIGATION AND WATER
RESOURCES (MOI) IN SUDAN**

7 - 19 August 1993

Welcome letter

Wed Medani, August 1993

Dear Participant,

Training Needs and Organizational Constraints Assessment (TNA) Workshops

Welcome to the Workshop on Training Needs and Organizational Constraints Assessment for Irrigation Management, promoted jointly by MOI and IIMI!

It is a great pleasure to have you here among this group of participants. We believe that this workshop will provide you with the opportunity of reviewing irrigation management concepts, conducting job analysis and discovering managerial knowledge, attitudes and skills necessary for improving your participation in MOI activities. We also expect to discuss the constraints you face in your job environment thoroughly and openly during this workshop.

Thank you very much for joining us.

We wish you a very pleasant and productive program.

Best regards,

..... &
MOI and IIMI

MAJOR OBJECTIVES OF THE TNA WORKSHOP

TOP MANAGEMENT & RESEARCHERS

TO PRESENT THE FRAMEWORK AND ILLUSTRATE THE METHODOLOGY IIMI USES TO ASSESS TRAINING NEEDS AND ORGANIZATIONAL CONSTRAINTS TO MOI OFFICIALS.

This includes

- Introduction of the concept of institutional development and the role of managers and leaders.
- Review of the concepts of irrigation management
- Job and duties analysis.
- Requirements of knowledge, attitudes and skills to perform managerial duties.
- Identification of organizational constraints.

THE PURPOSE IS TO OBTAIN INPUTS AND FEEDBACK FROM THE TOP MANAGEMENT AND SENIOR OFFICERS AND RESEARCHERS ON TNA APPROACH.

MAJOR OBJECTIVES OF THE TNA WORKSHOP

TECHNICAL STAFF

The TNA workshop objectives were defined as follows for the technical staff groups:

- Review of the concept of irrigation management and the distinction between management and technical activities.
- Job and task analysis.
- Identification of managerial knowledge, attitudes and skills required to perform tasks.
- Identification of existing gaps in managerial knowledge, attitudes and skills.
- Identification of organizational constraints.
- Establishment of priorities of the training needs assessed.

MAJOR OBJECTIVES OF THE TNA WORKSHOP TRAINERS

The TNA workshop objectives for the trainers were defined as follows:

- To discuss the concept of management training.
- To describe the roles of trainers.
- To discuss the need for conducting management training at MOI.
- To assess the participants' interest to function as trainers at MOI.
- To draft job description for trainers.
- To identify major duties and tasks performed by trainers.
- To list the constraints which prevent the implementation of training program at MOI.

**TRAINING NEEDS AND ORGANIZATIONAL CONSTRAINTS ASSESSMENT
EXERCISE HELD AT THE MINISTRY OF IRRIGATION AND WATER
RESOURCES (MOI) IN SUDAN**

TENTATIVE SCHEDULE -TECHNICAL STAFF

7 - 19 August 1993

Standard Sessions

DAY I

- 08:00 - 08:30 - Welcome by the trainers and presentation of Schedule and Session Objectives (M S Shafique)
- 08:30 - 09:45 - Interactive exercise
- 09:45 - 10:00 - COFFEE BREAK
- 10:00 - 10:40 - Concept of irrigation management (P S Rao)
- 10:40 - 11:00 - Plenary discussion on the previous presentation
- 11:00 - 12:00 - Major duties and tasks performed by Irrigation Managers "Take five for better brainstorming technique"
- 12:00 - 12:30 - Job analysis of Irrigation Managers - Charles Nijman's questionnaire (small-group exercise)
- 12:30 - 12:45 - Review of job description
- 12:45 - 13:15 - Concept of knowledge, attitudes and skills (Z P Franca)
- 13:15 - 14:30 - List of requirements: knowledge, attitudes and skills (Brainstorming technique)

DAY II

- 08:00 - 09:00 - Analysis and listing of gaps (knowledge and attitudes)
Nominal group technique
- 09:00 - 09:15 - Ranking priorities
- 09:15 - 10:15 - Organizational constraints (trip around the tables)
- 10:15 - 10:45 - * Personal view on training
* Formative evaluation
- 10:45 - 11:00 - * Presentation of results (priorities)
* Oral feedback from the participants and facilitators
* Closure and "BONBONS"

TENTATIVE SCHEDULE - TOP MANAGEMENT

7 August 1993

Morning

- 08:00 - 08:30 - Welcome by the officials of MOI and IIMI
- 08:30 - 08:45 - Presentation of schedule and session objectives (M S Shafique)
- 08:45 - 09:45 - Interactive exercise
- 09:45 - 10:00 - *COFFEE BREAK*
- 10:00 - 10:40 - Concepts of institutional development, irrigation management and roles of managers and leaders (P S Rao)
- 10:40 - 11:00 - Plenary discussion on the previous presentation
- 11:00 - 11:30 - Job and duties analysis: technical and managerial components (group exercise)
- 11:30 - 12:00 - Concept of knowledge, attitudes and skills (Z P Franca)
- 12:00 - 13:00 - List of requirements: knowledge, attitudes and skills (Brainstorming technique - Ranking priorities in knowledge and attitudes)
- 13:00 - 14:15 - Organizational constraints (Modified nominal group technique)
- 14:15 - 14:30 - Evaluation/Feedback session and closure.

TENTATIVE SCHEDULE - RESEARCHERS

17 August 1993

Morning

- 08:00 - 08:30 - Welcome by the officials of MOI and IIMI
- 08:30 - 08:45 - Presentation of schedule and session objectives (M S Shafique)
- 08:45 - 09:45 - Interactive exercise
- 09:45 - 10:00 - *COFFEE BREAK*
- 10:00 - 10:40 - Concepts of institutional development, irrigation management and roles of managers and leaders (P S Rao)
- 10:40 - 11:00 - Plenary discussion on the previous presentation
- 11:00 - 11:30 - Job and duties analysis: technical and managerial components (group exercise)
- 11:30 - 12:00 - Concept of knowledge, attitudes and skills (Z P Franca)
- 12:00 - 13:00 - List of requirements: knowledge, attitudes and skills (Brainstorming technique - Ranking priorities in knowledge and attitudes)
- 13:00 - 14:15 - Organizational constraints (Modified nominal group technique)
- 14:15 - 14:30 - Evaluation/Feedback session and closure.

TENTATIVE SCHEDULE - TRAINERS

18 August 1993

- | | |
|---------------|----------------------------------------------------|
| 8:00 - 8:30 | Opening, objectives and tentative schedule |
| 8:30 - 9:45 | Interactive exercise |
| 9:45 - 10:15 | Breakfast |
| 10:15 - 10:45 | Management Training and Roles of Trainers |
| 10:45 - 11:45 | Group exercise (Trip around the table) |
| 11:45 - 12:15 | Draft of trainer - Job description |
| 12:15 - 12:45 | Group exercise - Duties and tasks |
| 12:45 - 13:00 | Refreshment |
| 13:00 - 13:45 | Managerial knowledge and attitudes (Brainstorming) |
| 13:45 - 14:15 | List of constraints |
| 14:15 - 14:30 | Evaluation and closure |

**TRAINING NEEDS AND ORGANIZATIONAL CONSTRAINTS ASSESSMENT
EXERCISE HELD AT THE MINISTRY OF IRRIGATION AND WATER
RESOURCES (MOI) IN SUDAN**

7 - 19 August 1993

LIST OF PARTICIPANTS

Name of participant	Directorate
<u>Top management</u>	
Dr. Ahmed M. Adam	1st U/S
Prof. B. El Fadl El Monshid	HRS
Sayed Yousif Fadlalla	Dams
Sayed Abbas Abdalla Ibrahim	Gezira & Managil
Dr. Mohd ElAmin Mohd Nur	Planning
Sayed AlRayah Mohd. Hamad	Nile Waters
Sayed Ahmed Abdel Wahab	Girba & Rahad
Sayed Mohd Abdalla	Finance & Adm. Affairs
Sayed Abu Sineina Mustafa Ahmed	Rehabilitation
Sayed Mohd Abdalla ElFahl	Mech. & Elect.
Sayed Osman Abu-Zeid	Mech. & Elect.
Sayed Ibrahim Abu Salma	Projects
Sayed Abu ElGassim El Amil	Projects
Sayed Elzein A/Rahim	Projects
Sayed Abdalla Babiker	Projects
Sayed Ibrahim Mohd Ahmed	Gezira & Managil
Sayed Kamal Abdu	Deputy 1st Under-Secretary
<u>Chief Engineers, Divisional Engineers, Resident Engineers and others</u>	
Hassab El Nabi Musa Mohd	Dams
Sayed El Magzoub Ahmed Taha	Dams
Sayed Mohd ElFatih Ibrahim	Accounts
Sayed Mohtasir Mohd Elamin	Finance & Adm. Affairs
Sayed Hashim Gamar ElDin	Finance & Adm. Affairs
Sayed Tag ElSir Ahmed Abdalla	Projects
Sayed Mohd Sharif ElDin	Projects
Sayed Abdel Rahim ElSheihk Makawi	Pumps

Name of participant

Chief Engineers, Divisional Engineers, Resident Engineers and others (contd.)

Sayed EITahir Yousif Mahmoud	Girba & Rahad
Sayed Osman El Fadl	Girba & Rahad
Sayed EITagani Abdalla Farah	Mech. & Electrical
Sayed Osman ElGarai	Mech. & Electrical
Sayed ElAmin Mohd Nur	Mech. & Electrical
Sayed EIFatih Dulaib	Mech. & Electrical
Sayed Hassam Ezzeldin	Gezira & Managil
Sayed Abdel Rahim Ahmed Hussein	Gezira & Managil
Sayed Idris Mohd Idris	Gezira & Managil
Sayed Kamal Awad Karim	Gezira & Managil
Abdel Halim Mohamed	Gezira & Managil
Sayed Abdel Bagi Elgam	Girba and Rahad

Assistant Resident Engineers, Assistant Divisional Engineers, Mechanical Engineers, Deputy Directors and Design Engineers

Ahmed Mahmoud Abdalla Abushmeila	Projects
Mohd Nur EIDayem ElHag	Projects
Abdel Rahim Ahmed Abdalla ElAraki	Girba & Rahad
Mohd Mohd ElAmin	Girba & Rahad
Nur ELDin Abdalla	Mech. & Elect.
Salah Mohd Khamis	Mech. & Elect.
Galal Hussein	Mech. & Elect.
Adam Ahmed Mohd	Gezira & Managil
NasrelDin Mohd Abdel Rahim	Gezira & Managil
Salih Yasin Mohd	Gezira & Managil
Gafaar Babiker Mohd	Gezira & Managil
Hamid Mohd Hamid	Finance & Adm. Affairs
Ibrahim Abdel Hafiz	Finance & Adm. Affairs
Bdr EIDin Osman	Dams
Awad ElKarim El Khalifa	Nile Waters
Farahain Abdel Elghayoum	Djebel Aulia Dam
Salih Hamid Hamad	Girba & Rahad
Abdel Moneim Abdel Wahab	Gezira & Managil
Ahmed Hassan Mohamed	Gezira & Managil
Muawia Khalifa Hamed	Gezira & Managil
Ahmed Mohd. Abu Bakr	Gezira & Managil
Gami Eltayeb Gami	Girba Dam
Ali Mohd Osman	Demas

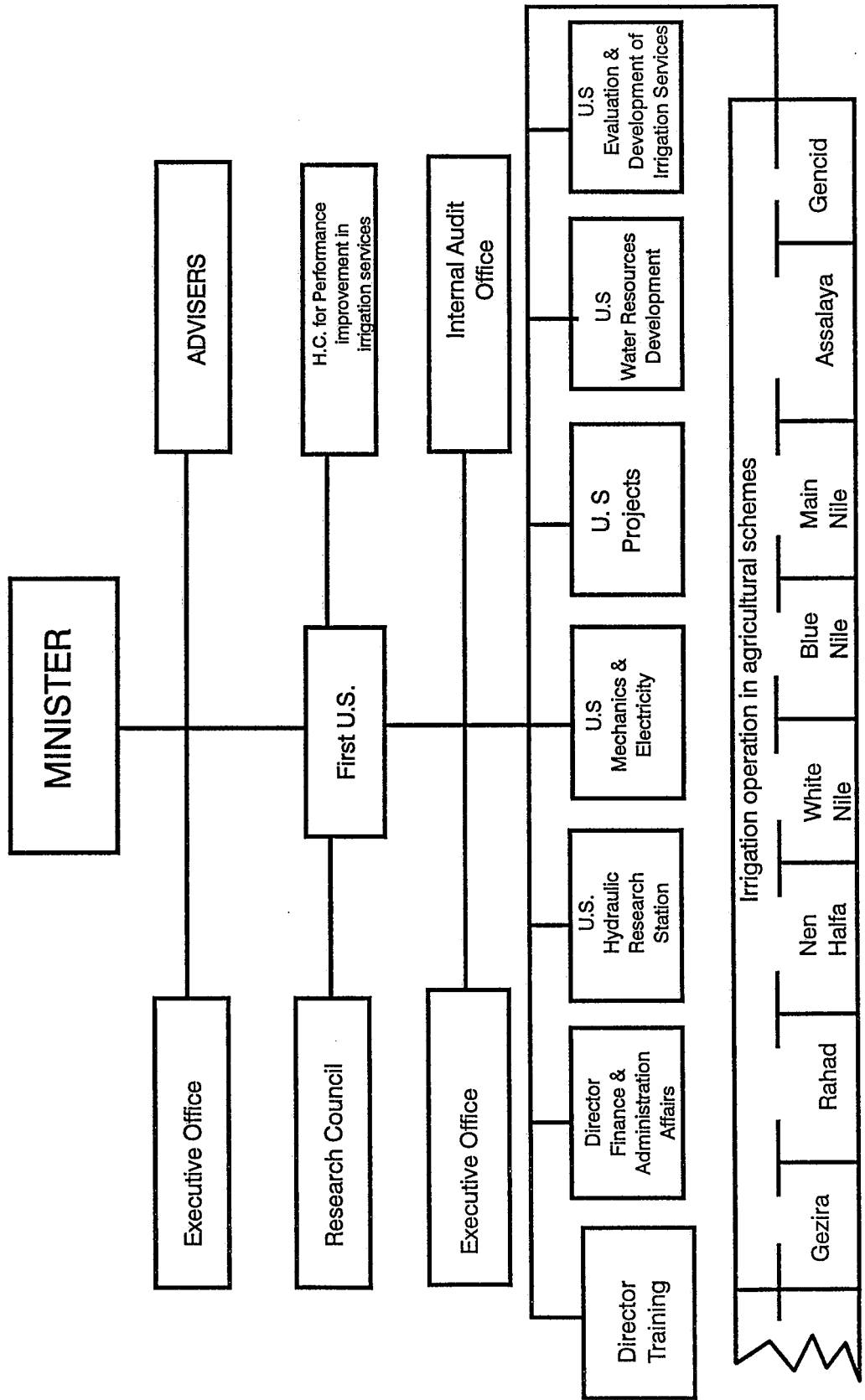
Name of participant	Directorate
<u>Finance and Administrative Managers</u>	
Fathia Babiker	Finance & adm. Affairs
Abdel Rahman Abdel Salam	" "
Hayder Mohd Hamid	" "
Abdel ElKarim Ali	" "
ElAmin Nimir Elamin	" "
ElZein Ahmed Abdalla	" "
Gamal Eldin Mustafa Osman	" "
Alawia Arabi Mohd	" "
Faisal Abbadi Ahmed	" "
Babiker ElJack Abdel Rahim	" "
Abdel Hadi Seed Ahmed	" "
Mohd Abdalla DaffaElseed	" "
Maha Mubarak Elzaki	" "
Sayed Bilail Ibrahim	" "
Abdel Rahman Abdel Halim	" "
Farouk Hassan Mutwali	" "
Abdel-Galil Ahmed Wagi Alla	" "
Hassan Mahdi Ahmed	Fin. & Adm. HRS
Mohd. Osman Idris	" HRS
Nayla Abdeen Ahmed	" HRS
Modathir Hussein Eltom	" HRS
<u>Gat Operators</u>	
Mohamed Abbas	Abu Ushar
Abdel Azzim Omer Mohd	Abu Ushar
Abdel Rahim AHmed El Amin	Abu Ushar
Saad Mohamed Now	Hag Abdalla
Mohamed Zein Abdel Mula	Hag Abdalla
Osman Mohamed Ahmed	ElWagara
Wahab ALI Ahmed Eltayeb	Ghurashi
ElBadri Ahmed Yousif	Elyan Division
Eshag Arbab Nagm Habib	Elyan Division
El Tigani Wad Musa	Wad Nau Div. Bezira
Ahmed Mohd Salih	Managil Gezira
Ahmed Mohd ElArif	Gezira Wad Nau
Osman Matar	El Gezira
Marghani Abdel Rahim	El Gezira
Abdel Rahman Mohd Abdel Karim	Gezira Wad Nau
Abdel Rahman Mohd Ahmed	Rahad

Name of participant	Directorate
<u>Gate Operators (contd.)</u>	
Abbas Ahmed	Rahad
Adam Ibrahim Adam	Rahad
El Tahir Abdel Rahman Salih	Rahad
Ahmed Abdel Rahman Salih	Rahad
Eshag Khamis Abdel Alla	Rahad
<u>Researchers (Research Engineers)</u>	
Dr. Ahmed Salih Ahmed Hussein	HRS
Dr. Omer Mohd AHmed ElAwad	HRS
Dr. Salah Eldin Yousif	HRS
Dr. Siddig Eisa Ahmed	HRS
Daffalla Mohd Yousif	HRS
Abu Obieda Babiker Ahmed	HRS
Younis Abdalla Gasm ElSeed	HRS
ElZein ElSiddig Abdalla	HRS
Asaad Yahia Shamseldin	HRS
ElKheir Ali Abdalla	HRS
<u>Research Technicians</u>	
Zein Nur El Daim	HRS
Osman El Khidir	"
Gariballa Ibrahim	"
Mohd Elrahma Hamad	"
Mohd Ibrahim Elsheikh	"
Ahmed Dawoud	"
Narseldin Hussein Eltayeb	"
Tirafi Abdalla	"
ElAmin Omar A/Bagi	"

Trainers

Hussein Osman Gasm ElSeed, Training Director, Civil Eng.
Abdalla Babiker Saad, Projects, Civil Eng.
Abdel Bagi Ahmed Yousif Algam, Div. Eng. Rahad, Civ. Eng.
Fathia Babiker Abdel Hafiz, Personnel Officer, MOI
Faisal Abadi Ahmed, Pension Adm. Inspector, MOI
Kamilia Mohamed Abu Bakr, Deputy Dir, Training, MOI
Ibrahim Abdel Hafiz, Deputy Dir. Adm., MOI
El Tigani Abdalla Farah, workshop W/M Director, Mech.& Elect.
Abu Obieda Babiker Ahmed, HRS, Research Civil Eng.
Younis Abdalla Gismalla, HRS, Research Civil Eng.
Alawia Arabi Mohd, Account. Controller, MOI
Mohamed El Rahma Hamad, HRS, Techn. Engineer
Gariballa Ibrahim Abdel Rahman, HRS, Tech. eng.
Abdel Rahim Ahmed Hussein Operation Gezira Irrig.,
Abu Usher, Chief Engineer

PROPOSED ORGANIZATIONAL STRUCTURE FOR THE MINISTRY OF IRRIGATION & WATER RESOURCES (MOI)



PART II

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JOB DESCRIPTIONS

TECHNICAL STAFF

Chief Engineers, Resident Engineers, etc.

JOB TITLE: CIVIL ENGINEER, MSc. (W.R.E.)
FUNCTION: DIVISIONAL ENGINEER
DUTIES: <ul style="list-style-type: none"> ■ Follow up the routine work of water control and distribution in each sub-division and intervene to set in any specific difficulty that may arise. ■ Prepare at the beginning of the hydraulic year the annual desilting and dewatering programs for the whole division in the light of the proposed programs raised by the sub-divisional engineers. ■ Check investigated cubes for desilting and approve clearance in minor canals and pass those for branches and majors to Director for approval. ■ Follow up the execution of the desilting and dewatering programs and intervene to act in any difficulty that may arise. ■ Check, comment if necessary and pass forward to the projects Directorate proposals raised by Sub-divisions on system performance improvement. These proposals could be canal remodelling, addition of hydraulic structures, etc. ■ Prepare the major maintenance program which is carried out annually during the summer period and follow up its execution. ■ Prepare technical reports to reflect the performance of the Division. ■ Prepare the annual budget for the whole division and follow up the financial control of this budget. ■ Follow up the administrative affairs of the Division regarding personnel affairs, supplies of petrol and maintenance materials, etc.

Chief Engineers, Resident Engineers, etc. (contd..)

JOB TITLE : CIVIL ENGINEER, B.Sc.(Hon.) UK, Post Graduate Dipl. Hydraulic, NL, 3. Certf. W.R.E. Yugoslavia
FUNCTION: A. D. E.
DUTIES: <ul style="list-style-type: none"> ■ Preparation of conc. basis for the installation of new diesel engines and pumps, due to the old history of the existing ones. ■ Maintenance of pump houses ■ Maintenance of disch. basins ■ Investigation of silt clearance from canals ■ Maintenance of regulators, bridges, syphons and other structures ■ Preparation of lines of outlet pipes by removal of cracked ones and fixing new ones and back filling. ■ Follow up of water in canals after water is pumped and that is to ensure the stability of these canals. ■ Follow up and monitoring to keep the required water level in canals. ■ Follow up the required operation of regulators to give the required outlet of water. ■ Supply the required needs of water asked by field inspectors to the fields to the required areas and by the required field out let pipes valves. ■ Administration and management of personnel.

JOB TITLE: MECHANICAL ENGINEER
FUNCTION: ELFAU WORKSHOP MANAGER
DUTIES: <ul style="list-style-type: none"> ■ Maintenance of vehicles, water-gates, pumps and other equipments ■ Operation and maintenance of earth-moving machineries ■ Erection of new workshops and mechanical equipment (e.x. the Foundry) ■ Supervision of the mechanical division of Abu Rakham dam (The regulator and Dinder siphon) ■ Providing of spare parts, tools and other equipments needed to do the job ■ Responsibility of the division staff concerning the financial and managerial affairs by co-ordinating with HQ. ■ Records of the technical specification and complete data of equipment and machines making schedules of maintenance programmes. ■ Monthly and annual reports for the whole division.

Chief Engineers, Resident Engineers, etc. (contd...)

JOB TITLE: DIVISIONAL ENGINEER OR R.I.O. DEGREE IN CIVIL ENGINEERING
FUNCTION: DIVISIONAL ENGINEER
<p>DUTIES:</p> <p>The duties of the Divisional engineer in all maintenance and work divisions are as follows:</p> <p>(A) <u>Technical duties:</u></p> <ol style="list-style-type: none"> (1) water control: maintaining levels and supervise water distribution to all system of canalization (2) Maintenance of drainage system, (3) Maintenance of the system of canalization from silt and weeds (4) Solving all irrigation problems <p>(B) <u>Administration Duties:</u></p> <ol style="list-style-type: none"> (5) Management of personnel works including engineers, clerks, accountants, and labours. (6) Keeping stores with supply materials and supervising running cars <p>(C) <u>Financial Duties:</u></p> <ol style="list-style-type: none"> (7) Prepare the annual budget proposals (8) Control the budget expenditure monthly and make sure that every pound is going to the right item (9) Check the accountants works <p>(D) <u>Public Duties:</u></p> <ol style="list-style-type: none"> (10) Share and participate in the public affairs

Chief Engineers, Resident Engineers, etc. (contd...)

JOB TITLE : CHIEF ELECTRICAL ENGINEER (MAINTENANCE)
FUNCTION : CHIEF ELECTRICAL ENGINEER
DUTIES: <ul style="list-style-type: none"> ■ Making plans for different maintenance ■ Ordering of storing of spare parts ■ Preparation of tools and equipment ■ Site preparation for maintenance and staff requirements ■ Conducting the maintenance ■ Repairs ■ Recording and reporting (Checking the spare parts.) ■ Training of the staff ■ Discussion on improving the work maintenance

JOB TITLE: ELECTRICAL ENGINEER
FUNCTION: CHIEF ELECTRICAL ENGINEER PUMPING STATION
DUTIES: <ul style="list-style-type: none"> ■ Operation, running, and maintenance of the pumps. ■ Receiving the water indent ■ Daily performing water requirements for irrigation of the agricultural project. ■ Planning the monthly, 6 month and early maintenance of the pumps, etc. ■ Daily contact with sugar company and NEC ■ Daily records for the working hours of the pumps. ■ Receiving report from the engineers about the condition and staff of the station.

Chief Engineers, Resident Engineers, etc. (contd...)

JOB TITLE: STRUCTURAL ENGINEER
FUNCTION: DIVISIONAL ENGINEER, RAHAD I.O.
<p>DUTIES:</p> <ul style="list-style-type: none"> ■ Check Water levels along the Main canals and Majors and see that the distribution of water in canals is as required. ■ Check and sign technical reports submitted from sub-divisions for clearance of canals and drains from silt accumulation. Usually one or two such reports are submitted every week. ■ On Sunday each week I submit to the manager Rahad I.O. the weekly machines clearance return, which shows how much cubic meters of silt have been removed from canals up to date. ■ On the 1st, 10th and the last day of each month I have to get the ten days discharge reports from the subdivision, check them and send them to the manager Rahad I.O. ■ On the 1st day of every month I have to prepare and send the monthly report to manager Rahad I.O. ■ Once every month I hold a meeting with my A.D.Es and design a programme for weeds clearance and sometimes we revise our annual "machine clearance programme" as regards priorities. ■ In January every year I hold a meeting with my A.D.Es to prepare our budget proposals for the following financial year. ■ In July every year I have to send the M. clearance programme for the division to manager Rahad I.O. ■ Preparation and execution of yearly summer maintenance of gates and regulators by mechanical and electrical engineering staff. ■ Preparation and execution of annual summer maintenance of field outlet pipes, gates and bank repair which should be completed before the beginning of next season.

Chief Engineers, Resident Engineers, etc. (contd...)

JOB TITLE: CIVIL ENGINEER (TECHNICAL ENGINEER)
FUNCTION: D.E. CONTRACTS - WAD MEDANI
DUTIES: <ul style="list-style-type: none"> ■ Receiving all needs, requirements of new projects which the MOI in need of or going to execute. ■ Sort and announce all information about it in the newspaper, radio and TV. ■ Sort all about bid participants: their prices and facilities. ■ Nominate the winner ■ Prepare all papers of contracts ■ To let the Under Secretary Projects to undersign ■ To check all payments that come from the R.Es. (Quantity, prices, amount and calculations) ■ To send the certificate for paying.
JOB TITLE: CIVIL ENGINEER
FUNCTION: MANAGER RAHAD IRRIGATION SCHEME
DUTIES: <ul style="list-style-type: none"> ■ The full responsibility of all the irrigation network, structures across them and the pump station. ■ Representation of Ministry of Irrigation in Rahad Scheme Board of Directors. ■ Representation of MOI in all formal activities ■ Representation of MOI in informal activities ■ Supervision of all the staff in this field ■ Supervision and direction of water distribution ■ Monthly and annual reporting ■ Preparation of budget ■ Preparation of machine clearance program ■ Looking after the budget and how it is used.

Chief Engineers, Resident Engineers, etc. (contd...)

JOB TITLE : CIVIL ENGINEER
FUNCTION: DIVISION ENGINEER, HEAD QUARTERS, PROJECT D IRECTORATE
DUTIES: <ul style="list-style-type: none"> ■ Collection of designs and design sheets, maps and related materials from the design office. ■ check whether the bill of quantities and the designs are in harmony and correct. ■ Contact the contractor, provide and discuss with him the drawings, maps and the bill of quantities and procedures to be adopted in executing the project. ■ Dispatch the design sheets and bill of quantities to the suitable engineer to follow-up ■ Supervision and follow-up of construction works in Wad Medani. ■ To make sure that projects are executed within the allowed budget; else to find means to cover the rest. ■ Preparation of machine return report.

JOB TITLE : CIVIL ENGINEER
FUNCTION: DIVISIONAL ENGINEER
DUTIES: <p>The most important duties of the divisional engineer are:</p> <p>The responsibility of three or four sub-divisions.</p> <ul style="list-style-type: none"> ■ Water control ■ Silt clearance ■ Weeds clearance ■ Budget distribution for the sub-divisions ■ Check the investigation of the major and minor canals ■ Supply the sub-division with petrol, building materials, and everything which is needed to run the work. ■ Check all the work ■ Pay visits to the sub-divisions.

Chief Engineers, Resident Engineers, etc. (contd...)

JOB TITLE : ASSISTANT RESIDENT ENGINEER, CIVIL ENG. (A.R.E.)
FUNCTION: OPERATION, MAINTENANCE AND MANAGEMENT
DUTIES: <ol style="list-style-type: none">1. Take over all duties of the R.E. in his absence2. Coordination of the dam Divisions3. Preparation of the following:<ul style="list-style-type: none">■ Technical reports■ Monthly reports■ Annual reports4. Flood reports5. Apron inspection reports6. Seasonal and any others reports.4. Inspection and maintenance of the dam apron5. Follow-up of the dam maintenance and operation6. Development of the dam facilities (transportation, supply of fuel and others).7. Organization of the divisions activities8. Control and management of the Dam's stores9. Management of the labor personnel10. Check-up the payment of the dam employees11. Participation in all other technical problems.

Chief Engineers, Resident Engineers, etc. (contd...)

JOB TITLE : CIVIL ENGINEER, RESIDENT ENGINEER, ROSEIRES DAM
FUNCTION: OPERATION, MAINTENANCE AND MANAGEMENT OF THE DAM
<p>DUTIES:</p> <ul style="list-style-type: none"> ■ Full responsibility of the dam ■ Operation of the dam (levels and discharges) ■ Maintenance of the dam ■ Inspection and maintenance of the apron ■ Bathymetric surveying of the reservoir ■ Co-ordination of the dam divisions ■ Dredging project management ■ Receiving Eddeim gauge readings (Station Upstream) ■ Analysing the data from Eddeim gauge ■ Sending the daily information to HQs. ■ Checking the production of the turbines ■ Controlling the materials in the stores ■ Checking the attendance of the staff ■ Solving the financial problems ■ Solving the problems of Kenana canal staff ■ Approving of all the reports of the division ■ Check and compare the readings of the instrumentation ■ Silt analysis.

Chief Engineers, Resident Engineers, etc. (contd..)

JOB TITLE & QUALIF.: DEPUTY DIRECTOR GENERAL (ACCOUNTS)
FUNCTION:
DUTIES:
<ul style="list-style-type: none"> ■ The enforcement of financial directives and regulations issued by the ministry of finance ■ The participation in the discussion of and finalization of general budget proposals and putting it in its final form before raising to the ministry of finance ■ The control of budget expenditure with respect to the administrative sections of the budget ■ Prepare and arrange the needed liquidity in terms of money and time ■ The continuous follow-up of the financial situation for the MOI. ■ The control of expenditure within the limit authorized to keep the budget at equilibrium. ■ The control and supervision of the development budget according to the rules ■ The supervision and control of procurement and store works ■ The preparation of the monthly accounts report ■ The administration and management of the accounts department (i.e. staff recruitments, promotions etc..) ■ The control of checks book. Hold the first signature acts. ■ As the financial advisor to the First Under Secretary and his assistants.

Chief Engineers, Resident Engineers, etc. (contd...)

JOB TITLE: CIVIL ENGINEER - BSc. Khartoum, Dipl. Delft - International course of on Hydraulics.
FUNCTION: DIVISIONAL ENGINEER FOR ABU-USHER
DUTIES: <ul style="list-style-type: none">■ Administration of three units called sub-divisions, consisting of an area about 350000 feddans. Together with the headquarter at Abu Usher.■ Monitoring of water levels and indents in the canals for the three sub-divisions■ Taking action and making decision if something is going wrong■ Approve the cubes prepared by the sub-division engineers for canals clearance from silt and that up to the minor canals.■ Follow up the canals clearance from silt and weed■ Follow up the preparation of programs for desilting and deweeding of canals■ Follow up the preparation of the budget■ Budget control for the division■ Writing reports about the assistant divisional engineers and head-officials at the HQs for increase in payment and to get promotions.■ Follow-up the canal structures and gates maintenance during the summer gap. "Summer works"

Chief Engineers, Resident Engineers, etc. (contd...)

JOB TITLE : CIVIL ENGINEER
FUNCTION: DIVISIONAL ENGINEER
<p>DUTIES:</p> <p>Supervision of two sub-divisions and HQs (D.E. Office)</p> <ul style="list-style-type: none"> ■ Technical supervision ■ Financial supervision ■ Administrative supervision <p>Technical supervision:</p> <ul style="list-style-type: none"> ■ Check of gauges and pumping hours from the gauge book ■ Check of attendance books ■ Check of de-silting machines conditions - location and progress normally from the weekly return or by contact with A.D. Engineers to make sure that silt clearance is according to program otherwise I have to contract A.U.S. to supply with more machines. ■ Program for canals drains clear. is made by the A.D.Es. and discussed with the D. E. and put forward to A.U.S. to distribute the machines. ■ As programmed for silt clearance the canals and drains are submitted by A.D.Es (after the whole procedure, levelling, plotting and calculating silt deposit) are checked according to design and approved. ■ De-weeding: De-weeding although it is the most laborious work is carried out by hand which is primitive and very slow. <p>Sometimes heavy weeds completely close the canals and that follows the crisis from the farmers.</p> <p>Financial supervision:</p> <ul style="list-style-type: none"> ■ Budget program: ■ Budget programming is made by the A.D.E for the S.D. and by A.D.E. HQ for the whole maintenance or any improvement or new works and after discussion summarized collectively to act as one budget for the division then submitted to A.U.S. ■ D.E. is the budget holder so it is controlled by him with the assistance of the HQ. accountant and here I like to add that my knowledge of financial regulations is not enough.

Chief Engineers, Resident Engineers, etc. (contd...)

JOB TITLE: CIVIL ENGINEER ((contd....))

Administrative supervision

- This is a laborious task and takes most of my time (more than half) as all workers problems should be solved or passed through the D.E.
- Transportation means: This is the daily headache of the D.E. due to the obsolete cars of the engineers if there is and transportation to schools, hospital and others.

Silt work:

One of the most important jobs of D.E. is to go out with A.D.E. to make sure that everything is going all right specially the flow of water indents through the canal and to solve any problem that may arise and some times joint ma... with A.D>Es and field inspectors when D.E.'s interview is needed.

JOB TITLE: HQS. ENGINEER FINANCE & ADMINIST. AFFAIRS**FUNCTION: SUPPLY OF MATERIALS ACCORDING TO REQUIREMENTS
ADMINISTRATIVE AFFAIRS****DUTIES:**

- Summarize requirements of different administration units
- To obtain the approval for buying materials according to financial rules
- Making notices for contractors to their documents stating their prices to every item in tenders.
- Checking the prices by a committee of three official persons.
- Acceptance of the least cost tender.
- Making notice for contractor having the least prices to bring materials to stores.
- Checking materials that should be according to specifications.
- Receiving the materials by store-keepers and take it in charge of stores.
- Informing the administration to receive their requested materials.

Chief Engineers, Resident Engineers, etc. (contd...)

<p>JOB TITLE & QUALIF.: DEPUTY-DIRECTOR GENERAL (PERSONNEL)(DDGP) B.Sc. degree in Economics, social science or Arts.</p>
<p>FUNCTION: ADMINISTRATIVE AND FINANCIAL DEPARTMENT (DDGP)</p>
<p>DUTIES AND RESPONSIBILITIES:</p> <p>The DDGP is responsible for and performs the following functions:</p> <ul style="list-style-type: none"> ■ Acts as an adviser on personnel matters to the first under-secretary, his assistants and the heads of the different directorates and departments. ■ Administer and manage the personnel section and its staff ■ Prepare with the help and assistance of all the directorates and departments. Chapter one budget proposal. This chapter consists of the financial arrangements for personnel and employees wages and salaries. ■ Discuss and agree on the proposals with the civil service department (Khartoum) in order to obtain the financial approval needed. ■ Enforce and apply all the rules and regulations governing terms of service, recruitment, selection, promotions, leaves, wage and salary structures, disciplinary rules, pension law, staff appraisal systems etc.. ■ Help in the formulation of personnel policies with regard to recruitment, selection, budgeting, promotions etc.. ■ Participates in all boards, seminars, workshops dealing with personnel matters. <p>Supervision:</p> <p>The DDGP is under the direct supervision of the Director-General and he supervises a number of assistants and personnel officers (nearly 15 in number).</p> <p>work problems:</p> <ul style="list-style-type: none"> ■ The MOI is a big institution with about 12,000 employees spreading all through the country. ■ The difficulty of obtaining up to date data due to the fact that correspondence between the different sections of the ministry is difficult. ■ Much centralization of work and decision making. ■ The continuous changes of wage and salary structures ■ The volume of work is beyond the ability and capacity of the few personnel officers and their staff. ■ The absence of a legal advisor puts a lot of legal work on the DDGP and his staff.

Assistant Resident Engineers, Assistant Engineers, etc.

JOB TITLE: CHIEF MECHANICAL ENGINEER FOR PROJECTS HQS - ASSISTANT TO THE GENERAL DIRECTOR OF PROJECTS AND DAMS**DUTIES:**

- Responsible for the erection of the new plant i.e. "Workshops, machines, pumps, stores.
- Responsible for the operation and control for all the machines working in weed control and dozers or scrapers in Abu Ushar division
- Preparing the requirements demanded by the engineers working in the field with these machines or the requirements of the new workshop.
- Facilitate the supply of fuel to all the divisions under our supervision.
- Follow the financial unit to solve all the problems of purchasing the spare parts and other materials.
- Looking after all the affairs of personnel of the staff i.e. vacation affairs, financial affair overtime and other incentive schemes.
- Contributing in most of the tenders concerning the supply of new excavators or irrigation pumps.
- Give the instructions which are given for the movement of the excavators or other machines.
- Prepare and summarise the monthly report sent by the different field engineers to the General Director.

JOB TITLE: ASSISTANT DIVISIONAL ENGINEER**DUTIES:**

My duties are to supervise the whole work of the sub-division and they include the following:

- a. To supervise the work of the assistant engineers and the labours which include the clearance of the canals from mud and weeds so as to facilitate the water requirements for irrigation to all crops.
- b. Maintenance of structures and gates of canals.
- c. Maintenance of house for the engineers and labours.
- d. Bring and distribute the salaries of engineers and labours and other staff.
- e. To review the water indents daily in order not to exceed the allowable discharge.

Assistant Resident Engineers, Assistant Engineers, etc. (contd....)

JOB TITLE: PUBLIC RELATIONS**DUTIES:**

Carry out the following tasks:

- Preparation of minutes of meeting held at the Hqs of the Ministry.
- Prepare the monthly and annual reports and issue the pamphlet of the Ministry of Irrigation
- Keep and evaluate the archives relating to Ministry of Irrigation and work to promote the archive to become an information bank to the Ministry.
- Supervising of local exhibitions and prepare internal shows.
- Support and assist in preparation of information for establishments, Boards and Mass Communication Media.
- Send and follow up advertisements until the settlement of accounts.
- Help to prepare symposiums and seminars of the Ministry of Irrigation.
- Prepare official celebrations
- Welcome visitors and foreign guests
- Supervise internal rest houses and receive visitors and guests.

Assistant Resident Engineers, Assistant Engineers, etc. (contd....)

JOB TITLE: DEPUTY DIRECTOR FOR ADMINISTRATION**DUTIES:**

The Deputy Director for Administration is accountable to the Director General of Finance and Administration Directorate.

PRINCIPAL ACCOUNTABILITIES

- Achieving the task
- Building Team
- Developing Individuals
- Directing
- Controlling
- Selecting
- Coordination
- Decision Making
- Supervising
- Safety

ACHIEVING THE TASKS

Ensuring that the required tasks are continually achieved

BUILDING THE TEAM

Building and reinforcing the team and fostering team-work and team-spirit

DEVELOPING INDIVIDUALS

Developing each individual member of the team i.e. must be able to experience personal achievement in the job they are doing, that they are a worth while contribution to the objectives of the team and the organization.

Must feel that they, as individuals, are developing, advancing in experience and ability. As for planning: I participate actively in implementing the general policy of the Ministry in the field of personnel administration. My role as organizer is a very important one since I organize and direct my subordinates for the fulfillment of the objectives of the organization. Act also as a facilitator and coordinator between the different sections of the Ministry at Wad Medani and the Headquarters in Khartoum and the other Government units.

Take decisions for the betterment of the work environment and also the terms of service. All this is done in complete cooperation with all those who are concerned.

Assistant Resident Engineers, Assistant Engineers, etc. (contd...)

DEPUTY DIRECTOR FOR ADMINISTRATION (contd...)

Complete supervision of the administration work in all different directorates in the Ministry beside the responsibility and follow up of clerical functions, their training both internal and external, their transfers in addition to the check up of keeping records and documents both financial and administrative.

Follow up all officials of the general list, endorsement of their confidential reports for both promotion and increases of pay, assess their duties and participation in their promotion boards.

Supervision for making available all stationery and office equipment in the Ministry's stores and approval for issues.

Upkeep & supervision of maintenance of HQ Offices being in proper order and safety and ensure the high standard for the appearance of HQ buildings and its role in development for the Country as a whole.

To secure the health, safety and welfare of people at work and to ensure that every body at work carries out their duties to make the offices, works, and sites safer place which to work. To improve safe methods of work and to motivate people to work safely.

JOB TITLE: HYDROLOGIST**DUTIES:**

- Choosing gauging and discharge sites
- Erect gauges and other facilities for staff stability to do work e.g. houses, rest houses, etc.
- Perform discharge measurement and gauging training staff and oversee them from time to time.
- Perform silt analysis and train staff too and oversee them
- Head teams that did and are doing bathymetric survey for the Blue and White Niles plus the main Nile.
- Suggest, send to maintain and request equipment for discharge measurement survey and silt analysis for the directorate.
- Maintain all outside stations after flood season for the coming one in ample time
- Re-establishing sites that were deserted for years in the rising of new hopes for (great projects) there
- Office data analysis and compare to previous data collected for certainty.
- Keep record of data and send it to feed computer centre.

Assistant Resident Engineers, Assistant Engineers, etc. (contd...)

**JOB TITLE: HEAD QUARTER ASSISTANT DIVISIONAL ENGINEER
(H.Q.A.D.E.)****DUTIES:**

- Checking the water levels at each off-take to the sub-divisions
- Comparing the discharge passing to each sub-division with the demand.
- Checking the x-sections of the silted canals sent by the sub-divisions and the quantity of silt. Afterwards checking the x-sections of the dug canals with the design x-sections.
- Collecting and compiling the monthly reports from the sub-divisions and send it to the directorate.
- Collecting and checking the work programme from the subdivision and what is done each 3 months.
- Collecting the needed materials for the maintenance of irrigation and building structures which are to be asked from the directorate and then redistribute to the sub-divisions.
- Demanding and distribution of the fuel materials according the needs of the sub-divisions.
- Following up the situation of cars and vehicles at the workshop and discuss it with the mechanical engineer.

Assistant Resident Engineers, Assistant Engineers, etc. (contd...)

JOB TITLE: ASSISTANT SENIOR ENGINEER (A.S.E.)**DUTIES:**

- Management and control of Gezira main canal water from K.127 to K. 169.
- Survey and investigation of the canals system within the sub-division
- Maintenance of the canals system:
 - (a) desilting
 - (b) dewatering
 - (c) Maintenance of regulators structures
 - (d) Maintenance of the field outlet pipes
- Supply the crop water requirement to the different crops
- Management, super intendence and training of the laborers
- Supervision of the sectional engineers.
- Arrangement of the supply of the fuel and maintenance materials from Wad Medani to the sub-division
- Preparation of:
 - (a) weekly report of machine production
 - (b) 10-days discharge report
 - (c) monthly report
 - (d) annual report.
- To follow up the work of the store keeper.

JOB TITLE: MAINTENANCE MECHANICAL ENGINEER**DUTIES:**

- Corrective maintenance
- Preventive maintenance
- Inspection
- Supervision
- Ordering spare parts
- Delegation
- Control

Assistant Resident Engineers, Assistant Engineers, etc. (contd...)

JOB TITLE: ASSISTANT DIVISIONAL ENGINEER**DUTIES:**

- Water control
- Supervision for all activities of the S.D
- Assist the technical staff to do their jobs
- Maintenance of canalization
- Maintenance of structures and buildings
- Training of new appointed technical staff.
- Budget holder
- Participate in social life of the staff and others living with them.
- Represent the MOI within the limits of the S.D.
- Make good relationship with other officials to assist in solving most problems of the work and the working staff.

JOB TITLE:**DUTIES:**

- collection of information about the water levels, pumping hours, inflow discharge etc
- checking the daily recorded water control information
- knowing the last indent and the current release
- any new indent?
- making the necessary adjustments
- maintain the system in its best possible conditions
- administrative affairs:
personnel and financial affairs
- writing technical reports about the conditions of the different parts of the irrigation system

JOB TITLE: OPERATION AND MAINTENANCE ENGINEER JEBEL AULIA DAM**DUTIES:**

- Check level upstream and downstream
- Calculate the discharge and no. of gates and its opening
- Maintenance of building dam, houses, roads
- Maintenance of dikes
- Make pay sheet for daily workers
- Salary of excess work for workers
- Monthly report for department of maintenance
- Program of filling and emptying for dam

Assistant Resident Engineers, Assistant Engineers, etc. (contd...)

JOB TITLE: DEPUTY DIRECTOR OF PROJECTS FOR DESIGN**DUTIES:**

- Study the design case passed by the Director
- Highlight the major points as a guidance for the design to the engineers
- Distributing the work between the engineers
- Follow up and supervise the design work with the engineers
- Making the final check for each design work
- Submitting all design works
- Contacting, or giving instructions to others to contact other divisions, department or organizations for completion of data and information necessary for design.
- Instructing subdivisions of the Directory to do the work passed to them within a limited time to enable the design work to be completed.
- Evaluate the staff
- Passing the daily work in the absence of the director.

JOB TITLE: DEPUTY DIRECTOR OF PROJECT FOR DESIGN**DUTIES:**

As an objective of this Division of Design, prepare a proper design work for irrigation schemes. Solving the problems raised by other divisions and departments from the existing projects. To achieve this aim I study the case of problem passed to me by the Director, and pass it to one of the engineer highlighting the major points and factors to be considered in the case.

Follow up the progress of design and discussing the problems facing the engineers in their work.

Making the final check for each design.

Submitting all design works and reports.

Writing evaluating report for each member of staff in the team work.

Passing the daily work in the division in the absence of the Director.

Contacting other divisions, departments and organizations for data and information necessary for design.

Assistant Resident Engineers, Assistant Engineers, etc. (contd....)

**JOB TITLE: RESIDENT ENGINEER OF SILT CLEARANCE AND WEED CONTROL
ABU USHER****DUTIES:**

- 1/ Submit the prepared cubes by the field engineers to be removed for the whole year by machines
- 2/ Submit the length of weeds to be removed by machines during the whole year
- 3/ Discuss the state of the machines which are working with the mechanical engineer.
- 4/ Signing the letters going out of the office
- 5/ Writing the confidential letters needed about the field engineers and other employees
- 6/ Approve the weekly program of the work for machines prepared by the field engineers
- 7/ Signing the monthly report and other reports prepared.
- 8/ Signing the pay-sheet and send it to the divisional engineer for preparing the cheque and then bring the money from the bank for the salaries
- 9/ Contact the subdivision engineers in our area and try to see these problems and difficulties.
- 10/ Going to the field to see the work of the machines
- 11/ Arranging for the fuel for the cars of all engineers.

JOB TITLE: DESIGNER ENGINEER**DUTIES:**

- 1/ Prepare drawings, bill of quantities, setting out sheets for new projects and implementation of existing projects.
- 2/ Investigation of hydraulic structures problems.
- 3/ Reporting to my superior to make a decision.

JOB TITLE: ASSISTANT RESIDENT ENGINEER (A.R.E.) SENNAR DAM**DUTIES:**

- 1/ The supervision and the dam division section engineers
- 2/ Control and distribution of the laborers and supervision of their work
- 3/ Check the pay-sheets and approve them.
- 4/ Control of the division store
- 5/ Supply the division with its different needs
- 6/ Control and running of the vehicles and supply them with fuel

Assistant Resident Engineers, Assistant Engineers, etc. (contd...)

<p>JOB TITLE: ASSISTANT DIVISIONAL ENGINEER</p> <p>DUTIES:</p> <ul style="list-style-type: none"> - Provide crop water requirements in specific time according to the plant need. To do so you have to know a number of theory and a number of several data. - First it is the clarity of your major canal and minor canals - Second the different types of the gates as rock stone gate, movable weir gate, and pipe regulator gate and how it works. - Maintenance of clearance program.
<p>JOB TITLE: RESIDENT MECHANICAL ENGINEER ABU USHAR</p> <p>DUTIES:</p> <ol style="list-style-type: none"> 1/ Checking the workshop attendance , engineers, storekeepers and labourers from the attendance book. 2/ Checking the distribution of fitters thro' the cars and machines under maintenance in the workshop. 3/ Checking the stock of lubricant, and fuel from the storekeeper. 4/ Checking the production of the machines for the day before. 6/ Negotiation of machines and cars maintenance with the workshop engineer and solving the problems. 7/ Doing the routine office work - local leaves and reports. 8/ Making the decision for the overtime - the work after the day hours 9/ Field trips. 10/ Negotiation with the field engineer about the result of the field trip.

Finance and Administrative Managers

JOB:	ACCOUNTANCY CONTROLLER
DEGREE:	8TH
DUTIES:	
1.	Check all papers received and direct it to sections concerned for instance: salaries section, deposit, receipts, internal checking payments, records, control, etc...
2.	General supervision and control of all book-keepers works and follow up.
3.	General control of the work done by book-keepers according to the financial regulations and rules.
4.	Following up all approved budget amounts concerning the ministry's money received from Ministry of Finance and direct payments according to that.
5.	Authorization to sign bank cheques and the letter approving payments.
6.	Approach all units, organizations which have any accounts with the ministry.
7.	To authorize and open local accounts for the substations with the Bank of Sudan or if not available with other banks.
8.	Transfer money to all sections of the ministry for salaries or other urgent payments.
9.	Check all payments of the Ministry according to the approved budget.
10.	Follow up all ministry's receipts collections
11.	Auditing of the final finance sheet.
12.	prepare all budget figures and sit with those who discuss these figures to receive the final budget approval. (Budget meeting).

Finance and Administrative Managers (contd...)

JOB:	ADMINISTRATIVE INSPECTOR
DEGREE:	8TH
DUTIES:	
The confidential office is accountable to the Director General, Finance & Administration Directorate.	
The Responsibilities and Duties are:	
1.	To achieve the task of the Ministry.
2.	General supervision of the office and the organization and revision of the staff of the office.
3.	Registration of the incoming and the outgoing mail.
4.	Writing letter and memorandums of promotions and complaints.
5.	Up-keeping of the technical files and records.
6.	Upkeeping of the confidential files of the classified staff of the ministry.
7.	Making and keeping updated seniority lists of all classified staff i.e. Engineers, technicians, clerks accountants and store-keepers for promotions.
8.	Keeping disciplinary boards documents and following their procedures.
9.	Implementing the promotions of all the classified staff after their approval by the First Under Secretary.
10.	Building the teamwork and developing the individuals in the office by training.
11.	Receiving and keeping of confidential reports of the annual allowances of all the ministry classified staff.
12.	Providing stationery needs of the office.
13.	Writing confidential reports and revision of the staff work.

Finance and Administrative Managers (contd...)

JOB: ADMINISTRATIVE MANAGER**DUTIES:**

1. Attendance and Absence of workers
2. Responsible for annual reports of annual allowances and promotions.
3. Complete supervision for all sections as, suspense and deposit accounts, current accounts, bank account, salaries & etc.
4. Follow up of closure of accounts till it ends up to accounts chamber.
5. Contribution of budget proposals "General Budgets"
6. Follow up for all needs of accounts department as, stationery, offices and furniture.
7. Supervision and follow up for H.Q and out stations.
8. Responsible for all correspondences concerning accounts section to accounts chamber Khartoum.
9. Solving all problems concerning H.Q and other sections.
10. Responsible for all transfers of workers of the accounts Dept. in HQ and out stations.

JOB: CHIEF OF CLERKS AT HRS**DUTIES:**

Qualifications: A course of training at Sudan Academy for Administrative Science in Personnel Management

1. Supervisor of personnel office and general office at Hydraulic Research Station.
2. Responsible for directing and controlling all staff in two offices.
3. Keeping materials for work flowing and typewriters in good condition.
4. Reviewing an individual's performance and the progress in the job.
5. Writing annual report about the work in the office and the confidential reports about staff.
6. Cooperating with staff and seniors to perform the work perfectly.
7. Distribution of the work so that work flows efficiently and satisfactorily.

Finance and Administrative Managers (contd....)

JOB:	HEAD CLERK
DUTIES:	
A)	Supervision, follow up and organization of duties among different staff members (7 permanent & 2 temporary).
B)	Checks of receiving, delivery & filing of different letters regarding the following up to <ol style="list-style-type: none">1. Dams, Reservoirs & Pumps.2. Flood & Erosions3. Different agricultural projects.4. Scientific researchers;5. Development programs.6. Different institutes like IIMI, GRP, etc...7. Budget, ...etc.
C)	Direct supervision in collaboration with researcher to explain in typing reports.

Finance and Administrative Managers (contd....)

POST : ACCOUNTANCY CONTROLLER**DUTIES:**

1. Check all papers received and direct it to sections concerned for instance: salaries section, deposit, receipts, internal checking payments, records, control, etc...
2. General supervision and control of all book-keepers according to the financial regulations and rules.
4. Following up all approved budget amounts concerning the ministry's money received from Ministry of Finance and direct payments according to that.
5. Authorization to sign bank cheques and the letter approving payments.
6. Approach all units, organizations which have any accounts with the ministry.
7. To authorize and open local accounts for the substations with the Bank of Sudan or if not available with other banks.
8. Transfer money to all sections of the ministry for salaries or other urgent payments.
9. Check all payments of the Ministry according to the approved budget.
10. Follow up all ministry's receipts collections
11. Auditing of the final finance sheet
12. Prepare all budget figures and sit with those who discuss these figures to receive the final budget approval. (Budget meeting).

Finance and Administrative Managers (contd....)

JOB: ADMINISTRATIVE INSPECTOR, F.U.S. OFFICE**DUTIES:**

1. General supervision of the First Under Secretary's office involving revision of the office procedures in handling of incoming and outgoing mail and the system of filing.
2. Organize, develop, manage and training the staff of the office.
3. To achieve the task of the Ministry, developing the team work in the office and develop individuals for promotion and greater efficiency and satisfaction.
4. Write letters and memorandum.
5. Providing stationery needs.
6. Ensuring good work environment.
7. Responsible for the strictly confidential letter
8. Typing English, Arabic.

Finance and Administrative Managers (contd.....)

POST: INSPECTOR OF PENSION OFFICE

DUTIES:

1. Preparing the documents for all classified staff in the Ministry(12,000) office.
2. Preparing documents for those who go to pensionable service.
3. Follow up the settlement to those who are required for pensionable services.
4. Implementing the Circulars issued from Min. of Finance and pension department regarding the pension.
5. Organize, develop and manage the staff of pension office and provide them with suitable training (on-the-job training)
6. To achieve the tasks of the ministry, building the team work in the pension office and direct them to easy methods for the work.

General Laws:

The Pensioner may apply commutation of part of his pension equal one third of his pension and that in order to establish business to help him gaining profit to improve his standard of living.

2nd : In case of the pensioner's death, the pension is to be inherited by his family according to legal conditions and regulations. This is also part of our work.

In the end of this brief job description, we pray for the wholly god to prolong the pensioners ages.

It is worth mentioning the gratuity by the serving units to all pensioners for their devoted services to their units and to their country.

Finance and Administrative Managers (contd....)

POST: INTERNAL AUDITOR
DUTIES:
<ul style="list-style-type: none">- Revise and follow up all the financial dealings in the Ministry and make sure that all the procedures are correct.- Execute all the financial obligations according to rules laws & he has the right to check the safes, stores and visiting out side departments of the MOI & report to the Minister of MOI.
The Constraints:
<ol style="list-style-type: none">1. Insufficient of staff (internal auditors), there are 9 permanent & 2 on daily payments.2. Lack of knowledge, some of staff in MOI believe that the auditing is "sword on their necks" but it is a protection for them not to fall in mistakes and prevent them not to be under punishment by regulations & laws because the auditing is done before payment.3. Lack of equipment eg. we have no car to facilitate our work.

Finance and Administrative Managers (contd....)

POST: INSPECTOR - SOCIAL INSURANCE**DUTIES:**

- The social insurance law issued and implemented on 26/4/1975, it has some advantages and now it has been amended so it became better than the last one.
- We issue all laborers to be under the umbrella of the social insurance and every labor has a number, we deduct monthly 7% from the employee & 17% from the employer (MOI) so the total will be 24% and then transfer to the National Insurance Box and follow up the share year by year.
- Done the reconciliations in the following cases: death, retirement, termination and resignation and there is another case "work incident".
- Inspect every case in retirement, eg. :
 1. Letter of retirement
 2. Service record
 3. Notice of the finishing of work
 4. certificate
 5. Birth certificate
 6. Salary of the last 37 months.
- Send all these documents to the First Under Secretary of pensions and he sends the cheque of payment.

Law of 574 This is implemented on every labor who reached degree 13 & above.

- Supervise all staff technically & administratively in this dept. (14).
- We need training
- This dept. dealing with the widows, orphans, aged and disabled people so we need patience & fast execution.

Finance and Administrative Managers (contd...)

POST:	FINANCIAL SUPERVISOR
DUTIES:	<ol style="list-style-type: none">1. Doing the final a/c & explained when the general budget's expenditures, the deficits & saving during the financial year.2. General supervision on the reconciliations and be sure all the deductions & payments are correct.3. Record all the conciliation4. Close the Monthly a/c at the end of the month & close the final a/c at June at the end of every year.5. Following up the receipt of deductions & payments which are issued from MOI to it's central units which are dealing with current a/c.6. Assist in preparing the budget's suggestions.7. Informing the manager about the current stand of payments.8. Helping in records of punctuality & discipline.

Gate operators

DUTIES:

1. Communicate with engineers
2. Receive and carry out instructions
3. Inform the up stream
4. Supervision
5. Encourage staff colleagues
6. Take precaution from danger
7. Watch and control the levels of water
8. Cooperate with farmers
9. Work honestly
10. Supervise the banks.

SAMPLE LIST OF THE RESULTS OF JOB ANALYSIS STUDY - DUTIES AND TASKS

Chief Engineers, Resident Engineers, etc.

STAFF CATEGORY: Divisional Engineer

DUTIES		TASKS	
(a)	Monitoring of water level in the main canal for the Division.	-	Inform sub-division engineers of the details.
		-	Request their necessary assistance whenever it is needed.
		-	Help in making decision.
(b)	Coordination between the HQ and the various sub-divisions to carry on their duties. Mainly the canals clearance from silt and weed.	-	Approve the cubes

(A)	To check the water level in the main canal and the discharge released from Sennar dam and for the other water control points in the division. Call any control point when any thing is found abnormal.	-	Check the water level and discharges
		-	Sign letters dealing with work
		-	Pay visits to the field.
		-	See how the discharges are going
		-	Check the canals and free them from weeds.
(b)	To sign letters dealing with the work. Checking investigations of major canals come from the sub-divisions if any.	-	Attend to the office work in the mornings.
		-	Check.

STAFF CATEGORY: Workshop Manager Electrical & Mechanical Administration.

DUTIES		TASKS	
(a)	See if there is any remaining work from previous day and check if there is a need to contact some one in order to pass the work (tel. P.C.)	-	Contact some one
		-	Send some one
		-	Write letters
		-	Pass it on to my boss
		-	Discuss it with my boss
(b)	Visit part of or all sections to see if there is any problem hindering the progress of work (to be solved on the spot)	-	Monitor & follow-up
		-	Solve small problems
		-	Give technical help if there is any need
		-	encourage & push up the spirit
		-	Check the attendance of subordinates and workers.

SAMPLE LIST OF THE RESULTS OF JOB ANALYSIS STUDY - DUTIES AND TASKS
(contd...)

STAFF CATEGORY: A. D. E. Assistant Divisional Engineer

DUTIES		TASKS	
(a)	Clearing of silt deposits from canals.	-	Making necessary investigations and level up in the field
		-	Plotting of the data gained in office
		-	Comparison of the existing plot with the original
		-	Decision of shape and nature of excavation required.
(b)	Construction of some engine basis.	-	Selection of the suitable machinery to do the job.
		-	Decision of the required level of base to be made
		-	Design of the shape of base at office.
		-	Preparation of materials, machinery and laborers at site
		-	Start and finishing of construction work.
		-	Completion of the installation of engines.

SAMPLE LIST OF THE RESULTS OF JOB ANALYSIS STUDY - DUTIES AND TASKS
(contd...)

Assistant Resident Engineers, Assistant Engineers, etc.

STAFF CATEGORY: Administration

DUTIES	TASKS
(A) Team Building	<ul style="list-style-type: none"> - To set and maintain team's objectives and standards - To involve the whole team in the achievement of objectives - To communicate efficiently with team and briefing them face to face as a team at least every week.
(B) Supervision	<ul style="list-style-type: none"> - Follow up of the clerical function and stores, consult with them whenever time permits, before taking decision affecting them. - To ensure the health safety and welfare of people at work and to ensure that every body at work carries out their work efficiently.

STAFF CATEGORY: Headquarters Assistant Divisional Engineer

DUTIES	TASKS
(a) Checking the water levels at the off-takes to each sub-division.	<ul style="list-style-type: none"> - Receive the water levels from the sub-divisions - Check the water levels with the designed ones if the water levels are not acceptable then, check the discharge passing w.r.t. the demand go to the field if the demand is less than discharge
(b) Maintaining the canals to the design sections.	<ul style="list-style-type: none"> - Receive the cross-sections with designed ones if there is siltation then approve the silt clearance, then receive the machine returns check the cleared x-sections.

SAMPLE LIST OF THE RESULTS OF JOB ANALYSIS STUDY - DUTIES AND TASKS
(contd...)

Assistant Resident Engineers, Assistant Engineers, etc. (contd...)

STAFF CATEGORY: Hydrologist

DUTIES		TASKS	
(a)	Bathymetric survey of the White Nile	-	Lead the team of engineers and labours
		-	Train and supervise their performance
		-	Give them instructions to fulfil certain duties
		-	Prepare report of progress of work
(b)	Perform silt analysis	-	Train staff how to do the silt analysis
		-	Supervise and check their work and then prepare final report.

STAFF CATEGORY: Resident Mechanical Engineer ABU USHER

DUTIES		TASKS	
(A)	Maintenance of machines	-	Preparing the spare parts
		-	Mechanical fitters
		-	Fuel and lubricants
		-	Testing the machines
(b)	Maintenance of cars	-	Preparing the spare parts
		-	Mechanical fitters
		-	Fuel and lubricants
		-	Testing the cars

SAMPLE LIST OF THE RESULTS OF JOB ANALYSIS STUDY - DUTIES AND TASKS
(contd...)

Finance and Administrative Managers

STAFF CATEGORY: Assistant Accounts Controller

DUTIES	TASKS
(a) Assist the Accountants Controller.	1. Fully responsible for controlling all the financial affairs 2. Responsible for Attendance of the staff. 3. Supervise all deposits, bank a/c and current a/c. 4. Responsible for following up and close monthly a/c and send them to the Chamber.
(b) Writing the reports for staff.	5. Writing the annual reports of the staff and send them to the confidential office.
(c) Follow up the daily work.	6. Supervise all the accounts debts. and signing monthly accounts and send them to the chamber.

STAFF CATEGORY: Financial Controller

DUTIES	TASKS
(a) Control the accounts.	1. Control the accountants' performance. 2. Control the accounting work according to the financial laws and regulations. 3. Open accounts for the external debts which have no a/c in Bank of Sudan. 4. Transfer the financial needs of the external debts according to the approved budget. 5. Control the collecting of payments. 6. Reading the letters from the other departments.
(b) Signing cheques	7. Review documents according to the financial methods and regulations. 8. Review the accounts figures. 9. Accounting the daily expenditures. 10. Signing cheques.

SAMPLE LIST OF THE RESULTS OF JOB ANALYSIS STUDY - DUTIES AND TASKS
(contd...)

Assistant Resident Engineers, Assistant Engineers, etc. (contd..)

STAFF CATEGORY:Personnel Officer

DUTIES	TASKS
<p>(a) Implement laws and regulations of service of civil affairs.</p> <p>(b) Participating in review and prepare suggestions for the first chapter of the budget.</p>	<ol style="list-style-type: none"> 1. Receive the Regulations and issues from Service Affairs Chamber. 2. Reading all the issues and distributing them for all administrations and units to follow them. 3. To implement all the regulations and issues. 4. After the Directory issued from Service Affairs Chamber: - Perform the committees each one is responsible of one of the suggestions eg. increments, salaries, real expenditure and approval throughout the year and participate in them and discuss at the Service Affairs Chambre.

SAMPLE LIST OF THE RESULTS OF JOB ANALYSIS STUDY - DUTIES AND TASKS
(contd..)**Gate Operators¹**

1. Receive instructions to discharge 150 thousand M3 of water and pass it to canals 10 thousand M3 each.
2. Supervise major canals and make sure that indent is satisfied and then report to office if there is any shortage or danger.
3. Work day and night to let water to reach Abu Ashreen (farms).
4. Try to keep the level as instructed.
5. Distribute water to the canals.
6. Instruct those who are in the upstream and downstream by telephone.
7. Record levels and report to office.
8. Supervise gates and banks.
9. The Head of the group distributes the work among them according to the needs.
10. Receive instructions from engineers and open water according to instructions. Watch the levels and report to upstream.
11. Clean and lubricate gates.
12. Inform the engineers if one of the gates did not open.
13. Keep the levels till the engineers come to solve the problem.

¹ Duties and tasks were not differentiated among the group of gate operators.

SAMPLE LIST OF THE RESULTS OF JOB ANALYSIS STUDY - SELF-ANALYSIS

Assistant Resident Engineers, Assistant Engineers, etc.

1a Assessment of Technical Performance

In general, the groups of participants of this session demonstrated lack of awareness of the performance evaluation process at MOI. Some expressed that this assessment is done confidentially through reports. Others declared that the technical supervision of the bosses are very limited; others showed dissatisfaction with the attitudes of the bosses saying "while discussing technical works performed, the results are distinguished and we are encouraged and praised by them, but when they write, the secret reports bring different evaluation".

1b Assessment of Managerial Performance

Obviously the groups of participants were not aware of the way they have been assessed for their managerial performance. Some groups stated they are not clear about this assessment, others said that the follow-up is low; others think that they are evaluated through the ability to get team work and sometimes are verbally praised.

2a Opportunities for Improvement of Technical Performance

All the small groups of participants suggested training activities through participation in courses, seminars and training abroad which would help them to improve in the technical performance. Some said that training in the field is enough. They need external training to update the information and broaden their knowledge.

2b Opportunities for Improvement of Managerial Performance

The managerial knowledge also would be improved by internal and external training. Others suggested that more discussions with the other engineers would help to find solutions for their problems. They also mentioned that weekly meetings to discuss the programs to exchange work experience; clarify the tasks to each individual; to improve relationship and communication and by involving all staff by turn to take responsibility of managing the work.

3a Technical Constraints

The major technical constraints emphasized by the small groups of participants were: shortage of engineers, shortage in technical engineering instruction, lack of vehicles, laborers, proper modern equipment, lack of communication, limited knowledge of the boss in some part of the work.

Assistant Resident Engineers, Assistant Engineers, etc. (contd...)

3b Managerial Constraints

The participants cited the lack of housing facilities for the outside station engineers; for gate operators; shortage of spare parts; low wages for them and laborers; shortage of budget; carelessness for reporting facts in all levels; lack of meeting lack of collecting data; low social life (economical problem), frustration in life; lack of training, lack of cooperation among staff; labor turn over, and others as the main problems they have while managing their jobs.

1a Assessment of Technical Performance

Finance and Administrative Managers

1a Assessment of Technical Performance

Performance assessment seems to be a new subject for this group of participants who were invited to work in small groups to discuss their perception on their evaluation by the supervisors at MOI. Some groups gave suggestions on how should be done. For example, "the manager should know his employees according his technical experience and qualifications"; others said that the supervisor should nominate them for training; others stated that the load of work is too heavy and there is no evaluation procedure. Some groups cited the confidential reports which are written annually and for promotions and annual allowances. These responses showed that the participants are not aware of the evaluation system at MOI.

1b Assessment of Managerial Performance

Similar suggestions were provided by the participants on the assessment of their performance; should be through reports; promotions and incentives; should promote orientation for the staff and improve motivation; through confidential reports. Some groups stated the lack of clear evaluation system at MOI.

2a Opportunities for Improvement of Technical Performance

The majority of the small groups cited internal training at MOI and abroad as the most important opportunity to improve technical performance. They also stated formal concerns, workshops, conferences, exchange of experiences in meetings and in the field; provision of books and other kind of information. Other groups pointed out improvement of motivation, and suitable atmosphere for work as important aspects to improve performance while some cited computer and other material resources as well.

Finance and Administrative Managers (contd...)

2b Opportunities for Improvement in Managerial Performance

Continuous training program was stated by the groups as the important activity to promote improvement in managerial performance. One group emphasized that "we need training in the administration because our work is related with people and different units so it needs managerial capabilities and skills to run the work smoothly". Another group pointed out promotions, incentives, motivation and good treatment from the managers.

3a Technical Constraints

The size of the offices was cited as a constraint for one small group of participants. Others' constraints were - lack of chance for training, no evaluation for technical certificates during service. etc., lack of transportation and communication, lack of equipment, the managers do not follow the financial laws and regulations when they are executing the general budget.

3b Managerial Constraints

As managerial constraints, the participants pointed out - lack of motivation, lack of managerial knowledge, including lack of coordination between the administrations which creates conflicts between them. One group mentioned the work atmosphere is not comfortable, low salaries and wages; there is no incentives and even if they are available they do not match the size of the work done; less opportunities for promotions; there is no updating of the new managerial advanced by them.

Gate Operators

The questionnaire for the gate operators was simplified to three direct questions as follows:

1. How is your performance assessed?

The gate operators interpreted this question in different a way. They self-evaluated their performance and stated:

- I am doing my job reliably and honestly
- I think my performance is good and honorable and I have executed all my job
- Full interest and high efficiency during the 24 hours because this is a duty and I am responsible for that.
- I think my performance is good and honorable and I have executed all my job

Gate Operators (contd...)

- I am doing my work willingly and efficiently
- I am capable and in my view my work is a national's duty
- I am convinced that my performance is good

2. Are there opportunities for improvement?

The participants responded -

- By improving salaries and other benefits
- Yes, incentives, par- time jobs, lights (supply of torches,e tc.) and maintenance since we are doing very hard job
- By punctuality, doing the job quickly and following instructions of the superiors
- By doing my work properly because God will ask for my doing
- We are working 24 hours per day so have no leisure time, and lack of laborers. It would be good to improve these aspects

3. What are the constraints in performing?

- Some gates have completed their life-time (too old)
- Sometimes there is no telephone, so the telephone is essential in water work
- Because of shortage of electricity we should rely on availability of batteries, gas lamps and rich people should share it.
- No maintenance for houses
- No batteries and no kerosene for lighting
- No maintenance of the bridges before the start of the season
- No protection from rain, cold and hot climate
- No motivation and incentives
- No evaluation for the job (it is a small job but it means a lot)
- Lack of communication
- Lack of medical facilities
- Lack of maintenance for gates and houses
- High cost of living
- No transport for schools
- No sufficient food

GAPS IN MANAGERIAL KNOWLEDGE AND ATTITUDES

Chief engineers, Resident Engineers, etc.

1. Managerial Knowledge

A. HOW TO INTERACT

How to communicate
How to develop co-operation (team work)
How to organize and conduct meetings
How to give and receive feedback
How to solve problems
How to make decisions

B. HOW TO MANAGE HUMAN RESOURCES

How to know (define) tasks and responsibilities or job descriptions
How to plan human resources
How to motivate staff
How to design a training program

C. PLANNING, MONITORING AND EVALUATION

How to plan transport
How to supervise staff and services
How to plan finance
How to assess organization culture
How to control materials and stores
How to evaluate performance of personnel
How to formulate plan

D. HOW TO USE CRITERIA AND SET PRIORITIES

How to set priorities
How to assess the needs for equipment
How to set standard

E. HOW TO MANAGE INFORMATION

How to write formal reports
How to collect and analyze data

2. Attitudes

A. HOW TO STIMULATE COMMUNICATION

Patience
Friendliness
Receiving
Good listener
Humbleness
Interest

B. HOW TO BUILD UP CONFIDENCE

Sensitivity
Empathy
Fairness
Caring
Sympathy
Trust

C. TO MOTIVATE OTHERS

Rewarding
Co-operativeness
Motivation
Praising

D. TO IMPROVE ONESELF (SELF-IMPROVEMENT)

Sharing
Kindness
Liking others

E. TO DIRECT AND CONTROL

Convincing
Acceptance of others
Appreciation
Decisive

Assistant Resident Engineers, Assistant Engineers, etc.

1. Managerial Knowledge

A. HOW TO INTERACT

How to assess problems and solve them
 How to get feedback from personnel
 How to communicate effectively
 How to make decisions
 How to deal with staff (how to interact)
 How to prepare and conduct a meeting
 How to approach a boss and get quick approval
 How to develop trust among staff
 How to develop social friendship

B. HOW TO MANAGE HUMAN RESOURCES

How to motivate staff
 How to improve staff performance
 How to design a training plan, select participants, etc.
 How to define job descriptions
 How to give instructions
 How to build and lead a team (leadership)
 How to delegate authority
 How to manage personnel (salaries, incentives, etc.)
 How to lessen frustration among employees and improve moral of staff
 How to manage welfare of staff
 How to change traditional ways of doing things
 How to select new employees

C. PLANNING, MONITORING AND EVALUATION

How to supervise and monitor work
 How to evaluate performance of personnel
 How to design a project
 How to manage time
 How to supply material
 How to manage financial resources

D. HOW TO USE CRITERIA AND SET PRIORITIES

How to set priorities
 How to take safety measures
 How to standardize procedures (set criteria)

E. HOW TO MANAGE INFORMATION

How to design information systems
 How to prepare reports and guidelines
 How to collect and analyze data
 How to record and retrieve information for future use
 How to write manuals (step by step procedures)

2. Attitudes

A. HOW TO STIMULATE COMMUNICATION

Open-minded
Friendliness
Interest
Flexibility
Good listener
Attentiveness
Politeness
Patience

B. HOW TO BUILD UP CONFIDENCE

Trust
Fairness
Concern
Dependability
Team-spirit
Seriousness

C. TO MOTIVATE OTHERS

Cooperative
Recognition
Appreciation
Cheerful attitude

D. TO IMPROVE ONESELF (SELF-IMPROVEMENT)

Innovative
Responsible
Sharing responsibilities
Foresight
Self-confidence
Commitment
Amicable - smiling

E. TO DIRECT AND CONTROL

Decisive
Firmness
Respect
Willingness to accept
Responsiveness
Judgmental (fair and firm)

Finance and Administrative Managers

1. Managerial Knowledge

A. HOW TO INTERACT

How to deal with conflicts
How to communicate effectively
How to prepare and conduct meetings
How to interact with managers
How to make decisions
How to obtain endorsement of the recommendations from officials
How to deal with subordinates (how to treat staff)
How to find solutions to problems
How to cooperate with others
How to coordinate with senior officials
How to build team work
How to interview staff

B. HOW TO MANAGE HUMAN RESOURCES

How to know (define) job descriptions or how to define duties, tasks and responsibilities of the staff
How to plan training program
How to assess level of competence of staff
How to train staff or how to give instructions and control
How to access behavior of staff
How to motivate staff
How to lead by example
How to maintain confidentiality
How to delegate authority and decentralize work
How to make staff to respect others
How to plan human resources

C. PLANNING, MONITORING AND EVALUATION

How to write guidelines for staff to follow
How to supervise staff
How to control budget
How to keep record of names, allowances, etc.
How to assess and control staff and equipment
How to evaluate staff performance and prepare reports
How to audit
How to manage time (to benefit from work time)
How to manage finance

D. HOW TO USE CRITERIA AND SET PRIORITIES

How to get stationery from the stores
How to set priorities

Managerial knowledge (contd...)

E. HOW TO MANAGE INFORMATION

- How to know rules and regulations
- How to select and use communication facilities
- How to write reports
- How to make analysis of laws and evaluate them
- How to collect information
- How to develop filing system
- How to make suggestions and recommendations
- How to write note and memorandum

2. Attitudes

A. HOW TO STIMULATE COMMUNICATION

Patience
Flexibility
Tactfulness
Interest
Politeness
Openness
Friendliness

B. HOW TO BUILD UP CONFIDENCE

Honesty
Obedience
Care
Willingness to respond to others fast
Reliable
Reciprocity (mutual)
Willingness to understand
Empathy
Sympathy
Sincerity
Frankness (genuine)
Supportiveness (helpful)

C. TO MOTIVATE OTHERS

Motivation
To be sweet
Encouragement
Cooperativeness
Cheerfulness

D. TO IMPROVE ONESELF (SELF-IMPROVEMENT)

Self-confidence
Balance
Perseverance
Responsibility
Convincing
Efficiency
Show intelligence and cleverness
Peaceful
Liking others
Sociable

Attitudes (contd...)

E. TO DIRECT AND CONTROL

Accuracy
Decisiveness
Firmness
Impartial
Fair, just
Respect
Tolerance

Gate Operators

1. Managerial Knowledge

A. HOW TO INTERACT

- How to cooperate with colleagues
- How to build team work
- How to communicate properly with people
- How to make decisions (decision-making)
- How to inform about accidents

B. HOW TO MANAGE HUMAN RESOURCES

- How to give and receive instructions
- How to obey orders
- How to lead staff and peers (leadership)
- How to supervise staff
- How to teach and train others
- How to develop knowledge about attitudes and behavior (basic knowledge of psychology)
- How to deal with labor and engineers
- How to know about first aid
- How to motivate and encourage laborers for them to stay during working hours

C. PLANNING, MONITORING AND EVALUATION

- How to supervise irrigation structures and canals (to be sure that they are safe and work efficiently)
- How to plan communication systems (including the use of the systems)
- How to plan and implement proper storing of equipment
- How to follow laws and regulations (planning and monitoring)
- How to be systematic

D. HOW TO USE CRITERIA AND SET PRIORITIES

None

E. HOW TO MANAGE INFORMATION

- How to write reports
- How to know about regulations and implement them

2. Attitudes

A. HOW TO STIMULATE COMMUNICATION

Interest
Patience
Politeness

B. HOW TO BUILD UP CONFIDENCE

Interest to work hard
Honesty
Obey orders

C. TO MOTIVATE OTHERS

Motivation

D. TO IMPROVE ONESELF (SELF-IMPROVEMENT)

Willingness to sacrifice
Full commitment to work
Responsibility
Efficiency
Convincing
Self-confidence
Willingness to relate with engineers, supervisors and colleagues
Responsiveness
Self-control
Willingness to be systematic to write reports and take measurements

E. TO DIRECT AND CONTROL

Fair
Willingness to train and help others
Punctuality
Firm
Accuracy

Gate Operators (second group)

1. Managerial Knowledge

A. HOW TO INTERACT

How to communicate effectively
How to build team work
How to make decisions
How to deal with the gate operators
How to coordinate the work with the others
How to cooperate with colleagues

B. HOW TO MANAGE HUMAN RESOURCES

How to select team work
How to give instructions
How to obey orders
How to understand the instructions
How to train the gate operators
How to encourage and motivate the gate operators

C. PLANNING, MONITORING AND EVALUATION

How to implement law
How to maintain the instruments working efficiently
How to monitor the gates
How to control the work staff
How to obtain the instruments

D. HOW TO USE CRITERIA AND SET PRIORITIES

How to set priorities to attend to the immediate needs at the field

E. HOW TO MANAGE INFORMATION

How to receive information
How to know record information

F. OTHERS - TECHNICAL KNOWLEDGE

How to know the water level before opening the gate

2. **Attitudes**

A. HOW TO STIMULATE COMMUNICATION

Interest
Politeness
Friendliness

B. HOW TO BUILD UP CONFIDENCE

Helpful
Honesty
Reliability
Team spirit
Empathy
Sympathy
Helpfulness
Obedience

C. TO MOTIVATE OTHERS

Cooperativeness
Positiveness
Loving

D. TO IMPROVE ONESELF (SELF-IMPROVEMENT)

Willingness to be systematic
Activeness
Courtesy
Non-discrimatory
Responsibility
Commitment

E. TO DIRECT AND CONTROL

Punctuality
Perfect
Hard work
Just - fair

ORGANIZATIONAL CONSTRAINTS

Chief Engineers, Resident Engineers, etc.

CONSTRAINTS	RECOMMENDATIONS TO OVERCOME THESE CONSTRAINTS
<p>A HUMAN RESOURCES</p> <ul style="list-style-type: none"> ■ Unavailability of casual laborers ■ Lack of training staff ■ Lack of job description for MOI staff 	<ul style="list-style-type: none"> ■ Keep a record of names and addresses of laborers. ■ Provide necessary training ■ Define duties and tasks for staff.
<p>B FINANCIAL RESOURCES</p> <ul style="list-style-type: none"> ■ Limited budget ■ Complicated financial formalities and limited authority ■ Scarcity of resources 	<ul style="list-style-type: none"> ■ Increase budget with policies on priorities. ■ Make the process easier and delegate authorities along with approved plans ■ Proper financial resources to establish a proper system.

Chief Engineers, Resident Engineers, etc. (contd...)

CONSTRAINTS	RECOMMENDATIONS TO OVERCOME THESE CONSTRAINTS
<p>C MATERIAL RESOURCES</p> <ul style="list-style-type: none"> ■ Proper rules & regulations for purchase of materials ■ Slow process for approval at high level ■ Inflation and its effect on the prices of material. ■ Lack of facilities in work place. 	<ul style="list-style-type: none"> ■ Improve rules and regulations for purchasing materials ■ Speed up the process of approval ■ Introduce new techniques to overcome this problem ■ Train staff and improve storage facilities ■ Improve work facilities.
<p>D INFORMATION/COMMUNICATION</p> <ul style="list-style-type: none"> ■ Lack of a proper and accurate system ■ Old fashioned system to obtain information ■ Difficulty in recording, collecting and passing of information ■ No proper systems for communication (telephone, transport difficulties, etc.) ■ Lack of communication provokes lack in guidance 	<ul style="list-style-type: none"> ■ Create an information system at MOI ■ Train MOI staff to create new and reliable systems to obtain information. ■ Train staff. ■ MOI should give attention to these problems by maintaining a proper system. ■ To provide human and better communication facilities.
<p>E RULES/PROCEDURES</p> <ul style="list-style-type: none"> ■ MOI officials' centralized authority 	<p>They should delegate authorities with supervision.</p>
<p>G GUIDANCE, MONITORING AND EVALUATION</p>	

Assistant Resident Engineers, Assistant Engineers, etc.

GROUP A:

CONSTRAINTS	RECOMMENDATIONS TO OVERCOME THESE CONSTRAINTS
<p>A. HUMAN RESOURCES</p> <ul style="list-style-type: none"> ■ Shortage of technical staff, lack of training, no job description. 	<ul style="list-style-type: none"> ■ To improve the payment situation of the staff to attract more employees. ■ Establishment of systematic training programs. ■ To identify specific job description.
<p>B FINANCIAL RESOURCES</p> <ul style="list-style-type: none"> ■ Shortage of budget for implementation of projects changes in the market prices. ■ None dynamic of financial laws. ■ Slow in financial decisions. ■ Lack of shortage of the liquid money within the budget. 	<ul style="list-style-type: none"> ■ To find external loans for major projects. ■ Flexibility in laws ■ Speed up the financial decisions ■ Financial people should be very keen by following the changes in the market.
<p>I INTERACTION WITH FARMERS</p> <ul style="list-style-type: none"> ■ Interference of the farmers interrupting the system 	<ul style="list-style-type: none"> ■ Implementing the irrigation laws. ■ Agricultural and engineer interaction with farmers.

Assistant Resident Engineers, Assistant Engineers, etc. (contd...)

GROUP B:

CONSTRAINTS	RECOMMENDATIONS TO OVERCOME THESE CONSTRAINTS
<p>C MATERIAL RESOURCES:</p> <ul style="list-style-type: none"> ■ Lack of draglines ■ Weed machines ■ Lack or irrigation engineers ■ Maintenance of gate operators houses ■ Inflation in material prices which the budget cannot cope with. <p>D INFORMATION/COMMUNICATION</p> <ul style="list-style-type: none"> ■ Lack of cars ■ The shortness of telephone communication ■ Lack of fuel. 	<ul style="list-style-type: none"> ■ Asking for having enough budget to import enough draglines and also for weed machines ■ We need qualified irrigations engineers or subordinates ■ This needs to supply building materials for maintenance.

Assistant Resident Engineers, Assistant Engineers, etc. (contd..)

GROUP C:

CONSTRAINTS		RECOMMENDATIONS TO OVERCOME THESE CONSTRAINTS
E	RULES/PROCEDURES Communications are not so good	provide communication systems to collect accurate data (telephone, cars). To implement indoor training to exchange experience.
F	KNOWLEDGE/SKILLS Lack of transfer of experience	

CONSTRAINTS		RECOMMENDATIONS FOR OVERCOMING THESE CONSTRAINTS
E	RULES/PROCEDURES	<ul style="list-style-type: none"> ■ To make available rules printed in pamphlets for all senior staff ■ To conduct panorama for the general plan of the work. ■ Apply the irrigation law.
■	Lack of information about rules and procedures	
■	Lack of strategies	
■	Irrigation law not applied	<ul style="list-style-type: none"> ■ Conducting training programmes abroad and on the job. ■ Providing modern instruments and equipments and rehabilitate of the existing ones. ■ Salaries and incentives must be increased to fulfill the needs and improve the morale of the staff
F	KNOWLEDGE/SKILLS	
■	Lack of training for all staff (technical staff)	
■	Lack of modern instruments and equipments for work	
■	Lack of incentives and low salaries	

Assistant Resident Engineers, Assistant Engineers, etc. (contd...)

GROUP D:

CONSTRAINTS		RECOMMENDATIONS TO OVERCOME THESE CONSTRAINTS
G	<p>GUIDANCE, MONITORING AND EVALUATION</p> <ul style="list-style-type: none"> ■ Not enough participation ■ Not enough facilities (Communication - transport - finance) ■ Weak information - lack of experience. Objectives not defined. ■ Lack of reports. 	<ul style="list-style-type: none"> ■ Sharing views with others (Team work) to improve the facilities and communication and financing. ■ Modern methods of communication ■ Training - target setting. ■ Training on how to write report.
H	<p>INTERFERENCES BY POLITICIANS</p> <ul style="list-style-type: none"> ■ Interact with technical work ■ Interact with civil service laws. 	

Finance and Administrative Managers

CONSTRAINTS	RECOMMENDATIONS TO OVERCOME THESE CONSTRAINTS
<p>A HUMAN RESOURCES</p> <ul style="list-style-type: none"> ■ Lack of training ■ Ill treatment from senior staff to juniors. ■ Non-cooperation in work 	<ul style="list-style-type: none"> ■ Chance of training locally and abroad ■ Justice in treatment ■ To be cooperative
<p>B FINANCIAL RESOURCES</p> <ul style="list-style-type: none"> ■ Non-satisfied salaries ■ Shortage of budget ■ Gap in financial regulations ■ Financial matters concentration for non-specialist 	<ul style="list-style-type: none"> ■ Adequate budget to pay reasonable salaries and to settle financial regulations. ■ Specialization for efficient staff ■ Reappointment for extra officers.
<p>C MATERIAL RESOURCES</p> <ul style="list-style-type: none"> ■ Type-writers and calculators are too old and out of date ■ Office furniture and other equipment such as, air conditioners, fans, etc. are not available and inadequate ■ Shortage of stationeries ■ Lack of equipment for staff to work properly. 	<ul style="list-style-type: none"> ■ Replacing them by electronic and modern ones. ■ Replace the old ones with new furniture and others. ■ Provide enough stationeries ■ Provide enough equipment. <p>f.</p>

Finance and Administrative Managers (contd..)

CONSTRAINTS	RECOMMENDATIONS TO OVERCOME THESE CONSTRAINTS
<p>D INFORMATION/CMMUNICATION</p> <ul style="list-style-type: none"> ■ Shortage of all kinds of vehicles and petrolium for transport of officers ■ Shortage telephones ■ Wireless is covering all the ministry of irrigation areas ■ Lack of system information ■ Lack of libraries 	<ul style="list-style-type: none"> ■ Buying enough vehicles to facilitate communication at the work place ■ Toprovide new ones ■ Widen the wirless system ■ Getting information system ■ Building and preparing library to provide better information for staff.
<p>E RULES/PROCEDURES</p> <ul style="list-style-type: none"> ■ Conflict generated by the financial policy ■ Lack of understanding in implementing the rules 	<ul style="list-style-type: none"> ■ Explain and discuss with people about the financial rules since the beginning ■ MOI needs consultants to assist staff on this subject.
<p>F KNOWLEDGE/SKILLS</p> <ul style="list-style-type: none"> ■ Lack of training programs ■ Lack of evaluation procedures 	<ul style="list-style-type: none"> ■ Regular training programs to be conducted for the staff ■ Staff's knowledge should be evaluated by others.

Finance and Administrative Managers (contd...)

CONSTRAINTS	RECOMMENDATIONS TO OVERCOME THESE CONSTRAINTS
<p>G GUIDANCE, MONITORING AND EVALUATION</p> <ul style="list-style-type: none"> ■ Office furniture, etc are not suitable for the staff ■ Lack of communication <p>H INTERACTION BY POLITICIANS AND OTHER PEOPLE</p> <ul style="list-style-type: none"> ■ Decisions are made in Khartoum and it is an obstacle for working in other divisions. ■ Discrimination among MOI officials 	<ul style="list-style-type: none"> ■ Allocate funds to improve the offices ■ To promote better mechanism for improving communication system. <ul style="list-style-type: none"> ■ We invite our colleagues to improve human relationship between each other so that to improve their connection between them for the sake of our unit and our country. ■ Differences in facilities between officials which creates bitterness among workers.

Gate Operators - 5th Group

A. HUMAN RESOURCES

- Lack of healthy drinking water
- Lack of medical care (dysentery and schistosomiasis Bellasia)
- Shortage of laborers
- No night guard for telephones
- Low salaries (less than 25% of the life cost estimate)
- Lack of allowances, such as, meal allowance to help them to face the inflation
- Lack of proper education for the children
- Lack of recreation facilities
- Gate operator vacancies are not filled since 1988 as nobody is interested
- Necessary emergency treatment against bites from snakes and scorpion, etc. and provide better shoes and boots to protect
- No first aid training
- Temporary laborers should be made permanent
- Gate operators should be paid pension even after the death of the employees to the wives.
- Recruiting old civil servants and their retirement soon after they join
- Instructions coming from different directions
- Wages are not appropriate for the hardworking
- Living facilities of the gate operators lack schools and medical care.
- Lack of protection against rain and cold.
- Housing is not suitable.

B. MATERIAL RESOURCES

- Lack of maintenance of the gates (greasing and repair)
- Lightening during the working hours by batteries or kerosene
- Lack of telephones
- Lack of clothes, mosquito nets and coats
- Lack of emergency transport
- No communication facilities in emergencies
- Poor living conditions and it cause danger to the children.

MAJOR ORGANIZATIONAL CONSTRAINTS

Gate operators - 6th Group

The following constraints are under Human, Material and Financial Resources Clusters.

- Lack of training and Lightening.
 - Lack of kerosene and houses maintenance.
 - No transport during the work time.
 - No protection (rain & mosquitos and cold)
 - No cloths, shoes (boots).
 - Lack of communication.
-

- Lack of lightening.
 - Lack of communication, transport
-

- Lack of Instruments & equipment.
 - Lack of cycles (transport) & protection.
 - Protection of cold and rain.
 - Lack of shoes and maintenance of the gates.
 - Lack of medical care, High cost of living and low salaries.
 - We need to be in the same scale with the gate operators of Sennar Dam (discrimination).
 - Part-time & incentive.
-

- Lack of maintenance of gates, winches and chains some of the gates are leakage.
 - Lack of Protection (shoes, rain)
 - No maintenance of houses
 - Low salaries
 - Lack of food
 - No cloths for labors
 - No incentives.
-

- Lack of maintenance
- Lack of lightening
- Lack of protection(Mosquitos and cold)
- Lack of transport (cycles)
- Lack of mosquitos nets and clothes (Winter)
- Lack of vaccine of children
- Lack of blankets

Gate operators - 6th Group (contd....)

- Lack of maintenance
 - Low salaries
 - Lack of incentives
-

- Lack of maintenance (gates)
 - Lack of maintenance (houses)
 - Lack of blankets
 - Lack of batteries
 - Lack of incentives
 - No clothes for work
 - No transport (cycles)
 - Lack of food
 - Lack of protection
-

- Lack of lightening
 - Lack of incentives
 - Lack of protection (cold & rain)
 - Lack of houses & maintenance.
 - Lack of first aids
 - Lack of schools for children
 - Lack of drinking water
-

- Lack of training
- Lack of lightening
- Lack of kerosene & houses maintenance
- Lack of transport
- Lack of protection (cold)
- Lack of cloths & shoes (poisonous insects)
- Lack of communication

PART III

TOP MANAGEMENT

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RESEARCHERS

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TOP MANAGEMENT

MAJOR DUTIES (Individual list)

- Preparation and evaluation of bidding documents and signing of contracts.
- Visits to the sites of the work to check performance of resident engineers and progress of the work.
- Report writing for other organizations seeking the help of MOI in some engineering aspects.
- Reading at levels of the rivers daily.
- Comparing with previous years.
- Analyzing the data and drawing curves, then forecasting.
- Responsible for planning, execution and upkeep of new projects.
- Rehabilitation and renewal of existing workshop & equipment, preparation of technical specified of new machines & equipment, preparation of tendering documents & evaluation of bids and manufacture of component which can be done locally.
- Dams: Responsible for operation, maintenance program repair & technical service of machines and equipments of mechanical and electrical nature.
- Training of new graduates who joined MOI recently.
- Receives reports of progress of work according to schedules.
- Feed back to lower levels of deviations in the progress at the work.
- Passing new program for the coming period scheduled according to new conditions.
- Check the water control gauge book to know the discharge entering Gezira from the dam and other downstream areas.
- Contact by telephone the other district (divisional engineers) so as to have the latest information about water distributions problems.
- Feed to the Under Secretary the data collected and raise the urgent problems if any.

Top Management - Major duties (Individual list) (contd....)

- To see that the available resources are used in most useful way.
- All the staff members are doing their duties in proper way.
- To see that the feedback from the field.
- Follow up of daily reports coming from out side stations.
- Work on outstanding new projects.
- Feedback.
- First to see what the status at the dams, operation-level/flows compared with the set programs.
- The day works to be done within HQ and field (follow-up).
- Daily-own work of planning reporting technical or administrative
- Supervision all activities carried by all directorate and General departments.
- Design and plan annual programs.
- Study and monitor all managerial problems and constraints raised and suggest solutions.
- Prepare, discuss and monitor the ministry's budget.
- Manage personnel, clerks, storekeepers to perform their duties.
- Keep records of payments, social security pension and collect their shares and pay after service benefits in collaboration with the Ministry of Finance and security and pensions funds.

TOP MANAGEMENT

ORGANIZATIONAL CONSTRAINTS AND RECOMMENDATIONS

CONSTRAINTS	RECOMMENDATIONS TO OVER COME THESE CONSTRAINTS
A Human Resources	
1. Lack of adequate human resources which in higher positions is difficult to overcome.	1. To reduce the number of technicians in lower scales and ease regulation on new recruits.
2. Lack of qualified engineers	2. More incentives for engineers.
3. Low level of job satisfaction	3. To provide higher salaries, health care schemes, good nutrition and good training programs.
4. Lack of human resources	4. To recruit new graduates and to train them.
5. Organizational constraints due to human resources	5. Regarding the organizational chart, put right persons in right position within the chart and train them when necessary.
6. Number of engineers and skilled laborers are less than needed	6. To make the job attractive by improving payment, incentives, etc.
B. Financial Resources	
1. Lack of financial resources	1. To increase the production.
2. Lack of foreign exchange to purchase equipment and publications.	
2. To increase foreign exchange.	

CONSTRAINTS

Annex J-2

RECOMMENDATIONS TO OVER COME THESE CONSTRAINTS

B. Financial Resources (contd..)

- | | |
|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| 3. Deficiency in financial management | 3. Delegation of power, relaxation of financial regulations. |
| 4. Difficulties in obtaining the required funds for certain jobs even after the approval from the Ministry of Finance | 4. Quick response from the Ministry of Finance and Planning to secure what is required in terms of funds. |
| 5. Lack of funds to carry out the projects | 5. To improve financial returns - Water rates.
To seek sources of funding
To share project work with private sectors. |
| 6. Frustration due to lack of financial responses | 6. To increase national income
Taxation
Look for foreign aid. |
| 7. Lack of financial resources due to many projects implemented at one time | 7. Few projects to be implemented at one time. |
| 8. Lack of financial resources due to lack of priorities | 8. To set priorities to use financial resources effectively. |
| 9. Lack of funds for maintaining structures and houses for laborers in the schemes | 9. To convince decision makers on the importance of budget for this maintenance and ensure that the revenue will be more than the input. |

C. Material Resources

- | | |
|----------------------------------|--------------------------------------------------------------|
| 1. Lack of materials for the job | 1. Ordering and stocking material needed for the job. |
| 2. Lack of material resources | 2. To seek local resources
To purchase imported material. |

C O N S T R A I N T S

RECOMMENDATIONS TO OVER COME THESE CONSTRAINTS

D. Information/Communication

- | | |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| 1. Lack of communication due language problems | 1. Provide training in language. |
| 2. Lack of communication among MOI officials | 2. It can be increased and improved |
| 3. Lack of technical information | 3. To develop bank of information to feed with expected standards, etc. |
| 4. Lack of inter-agencies communication | 4. MOI staff need more direct contacts with other department and agencies. |
| 5. Lack of appropriate information | 5. To build a system of information collecting and storing.
To motivate the division to respond to the needs of MOI. |

E. Rules and Procedures

- | | |
|----------------------------------------|---------------------------------------------------|
| 1. Lack of proper procedures to follow | 1. To define clear procedures to facilitate work. |
|----------------------------------------|---------------------------------------------------|

F. Knowledge and Skills

- | | |
|-----------------------------------------|-----------------------------------------------------------------------------------------|
| 1. Language constraints | 1. To use language which is easy to understand. Hoping the consultants speak Arabic. |
| 2. Lack of publications | 2. Supply of technical books, pamphlets and means of improving skills. |
| 3. Lack of training plan and activities | 3. The training center should promote visits to places specialized in the field needed. |
| 4. Lack of knowledge and skills | 4. To provide training and allowances. |

CONSTRAINTS

RECOMMENDATIONS TO OVER-COME THESE CONSTRAINTS

F. Knowledge and skills (contd...)

- | | |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| 5. Lack of advanced international know-how | 5. To provide study tour, conferences and consultancies. |
| 6. Lack of appropriate skills for the jobs | 6. More on-the-job training to promote staff capabilities and skills. |
| 7. Lack of training staff specially for the young engineers | 7. Organize training in country and abroad. |
| 8. Collection of knowledge for new projects needs time | 8. Priorities will help. Increasing the knowledge requirements of the teams collecting information. |

G. Guidance, Monitoring and Evaluation

Lack of guidelines and evaluation procedures

To assist the system work and evaluate results.

H Interference by Politicians and/or other kind of people

- | | |
|--------------------------------------------------------------------|----------------------------------------------------------|
| 1. The increased number of new projects as directed by politicians | 1. It is necessary to set priorities for implementation. |
| 2. Demotivation among staff | 2. To make distinct rules to govern civil service. |

I Interaction with Farmers

- | | |
|--------------------------------------------|--------------------------------------------------------|
| 1. Lack of interaction with farmers | 1. To solve problems at site. |
| 2. Lack of understanding of farmers' needs | 2. Try to communicate better to understand each other. |

RESEARCHERS
MAJOR DUTIES (Sample list)

- To design research program
- Field work and office work
- To conduct training application of computers
- Identification of research problem
- To write proposals for technical and budget solutions
- To formulate contract
- To guide research team
- To write reports
- To do calibrations
- To conduct survey
- Sedimentation monitoring
- To monitor water level
- To develop computation of data
- To write progress report
- To send data for analysis
- To manage people, office, budget, etc.
- To formulate research proposals
- To do research.

Headquarter Engineers' duties -

- To manage the personnel office
- To manage the accounts office
- To plan transportation ,etc.

RESEARCHERS
MANAGERIAL KNOWLEDGE

1. HOW TO INTERACT

- how to interact with staff and laborers
- How to make decisions
- How to negotiate (contracts, etc.)
- How to communicate effectively
- How to be a good listener

2. HOW TO MANAGE HUMAN RESOURCES

- How to keep confidentiality among team members
- How to instruct staff
- How to manage welfare and staff
- How to treat staff
- How to identify needs of inter-disciplinary team
- How to motivate people

3. PLANNING, MONITORING AND EVALUATION

- How to present alternatives to solve problems
- How to follow up
- How to assess work
- How to maintain equipment
- How to develop guidelines
- How to check instruments, etc. before going to the fields
- How to solve problems

4. HOW TO USE CRITERIA AND SET PRIORITIES

- How to design objectives
- How to choose methodologies
- How to update budgets

RESEARCHERS

ATTITUDES

1. TO STIMULATE COMMUNICATION
 - Flexibility
 - Patience
 - Understanding
 - Humbleness
2. TO BUILD UP CONFIDENCE
 - Team spirit
 - Tolerance
 - Trustworthiness
 - Sincerity
 - Frankness
3. TO MOTIVATE OTHERS
 - Empathy
 - Care/Love
 - Encouragement
 - Supportive
 - Enthusiasm
4. TO IMPROVE ONESELF (OR SELF-IMPROVEMENT)
 - Sensitivity
 - Curiosity
 - Dedication
 - Commitment
5. TO DIRECT AND CONTROL
 - Firmness
 - Assertiveness
 - Sympathy
 - Awareness
 - Integrity

RESEARCHERS

ORGANIZATIONAL CONSTRAINTS

CONSTRAINTS	RECOMMENDATIONS TO OVER COME THESE CONSTRAINTS
<p>A. Human resources</p> <ul style="list-style-type: none"> • Lack of training for technicians in HRS • Lack of technicians at HRS • The wages and salaries are low and these demotivate staff • Lack of interest in graduates to join public sector • Lack of skillful and motivated laborers • Lack of interest in jobs provoked by lack of funds to the jobs. • Low performance by MOI staff • Lack of human resources mainly research staff including technicians. • Shortage of well trained and motivated researchers 	<ul style="list-style-type: none"> • There is a hope that IIMI can solve this problem. • To transfer some of them from MOI. • To increase salaries • To create a better salary scale and incentives to attract them. • To create education of labor and develop skills for this task. • To provide training to laborers. • To overcome the shortage, building team work and develop more interest in the job. • To develop human resources through special programs. • To set priorities to recruit new staff and training them. • To increase salaries, give incentives and provide accommodation.

CONSTRAINTS

RECOMMENDATIONS TO OVER- COME THESE CONSTRAINTS

A. Human resources (contd..)

- Lack of sensitivity among MOI human resources

- To develop association and appreciation for water resources good health and good life.

- To build team work and relax.

B. Financial resources

- Lack of financial resources
- Research budgets are very limited
- Lack funds to purchase books, journals and equipment.

- To develop project that can generate for funds.
- This should be increased for commercial base which promotes good foundation in production.

- To make adequate available funds.

C Material resources

- Lack/non-availability of spare parts for machinery and equipment
- Instruments are not enough for many teams at one time
- Lack of equipment
- Shortage of computers and advanced equipment

- To provide spare parts

- There is a hope MOI will produce (provide) necessary equipment.

- To set priorities to acquire them.

- To increase the allocation of funds for the First Under Secretary, Second Division Budget.

D. Information/communication

- Lack of proper channels for information and communication within MOI

- To communicate the information truly an instrument (mechanism) is needed. This also will help staff to communicate with others easily.

CONSTRAINTS

RECOMMENDATIONS TO OVER- COME THESE CONSTRAINTS

D. Information/communication (contd..)

- Poor library facilities; lack of good journals, etc.
- Lack of international exchange with experts

- To modernize the library with more books and national and international journals.
- This can be overcome by attending regular meetings, seminars so that knowledge can be exchanged.

E. Rules and procedures

- Deficiency in policies for directing staff performance

- MOI Policy-makers should define clear policies and supervise implementation.

F. Knowledge and skills

- Lack of skills for performing technical civil engineers' duties

- To modify these instruments by importing new technology.

G. Guidance, monitoring and evaluation

None

H. Interference by politicians and others

None.

TRAINERS
MANAGERIAL KNOWLEDGE

1. HOW TO INTERACT

- How to communicate effectively
- How to approach people
- How to be an effective leader
- How to obey orders
- How to be an effective speaker
- How to ask questions
- How to set the climate for training
- How to overcome participation in groups

2. HOW TO MANAGE HUMAN RESOURCES

- How to conduct meetings
- How to delegate duties
- How to motivate
- How to reward
- How to create better human relationship
- How to arrange good training environment (facilities, etc.)
- How to assess and analyze training needs
- How to implement training plan
- How to administer staff, facilities, etc.
- How to manage human resources in training center
- How to build and work in teams

3. PLANNING, MONITORING AND EVALUATION

- How to find solutions to problems
- How to plan for training (realistically)
- How to be systematic
- How to follow and evaluate rules and procedures
- How to set objectives for training
- How to be punctual and stick to program schedule
- How to prepare agenda for meetings
- How to make decisions.

Trainers - Managerial Knowledge (contd...)

4. HOW TO USE CRITERIA AND SET PRIORITIES

- How to allocate budget
- How to select trainers
- How to get priorities mainly for training activities
- How to set performance standards
- How to assess training firms and consultants

5. HOW TO MANAGE INFORMATION

- How to collect data information
- How to use visual aids
- How to give effective presentation.

TRAINERS

ATTITUDES

1. HOW TO STIMULATE COMMUNICATION

- Open-mindedness
- Patience
- Good listener
- Willingness to share views

2. TO BUILD UP CONFIDENCE

- Preciseness
- Good manners (kindness)
- Unbiased
- Confidence (in staff and trainees)
- Commitment
- Sensitivity
- Gratitude
- Be smart (physical appearance, elegant)

3. TO MOTIVATE OTHERS

- Friendliness
- To be smart
- Cooperation
- Politeness
- Motivation
- Happiness (with performance)
- Appreciation

4. TO IMPROVE ONE-SELF (OR SELF-IMPROVEMENT)

- Calmness
- Seriousness
- Adaptability
- Acceptance

Trainers - Attitudes (contd...)

5. TO DIRECT AND CONTROL

- Judgement
- Wisdom
- Accuracy
- Perceptiveness
- Strategic
- Punctuality
- Objectivity
- Purpose
- Good-oriented
- Decisiveness

TRAINERS

ORGANIZATIONAL CONSTRAINTS AND RECOMMENDATIONS

CONSTRAINTS

RECOMMENDATIONS TO OVERCOME THESE CONSTRAINTS

A Human resources

In-country training is not encouraging due to low allowances

To increase the allowance to afford living expenses.

B Financial resources

- Short budget
- Budget limitation affects performance
- No funds to buy up-dated information through books, journals, etc.

- To raise the budget of MOI
- To increase budget of foreign component

C. Material resources

- Lack of suitable venue and training facilities
- Lack of transportation

- To complete the training center
- To develop means of transportation

D Information/Communication

- Lack of computerized network and inter-relationship
- Lack of data bank systems

- Subscription to international communication network and satellite system
- To develop data bank system

CONSTRAINTS

RECOMMENDATIONS TO OVERCOME THESE CONSTRAINTS

E Rules and procedures

- Lack of rules for standard format for data presentation
- Administrative inconvenience for complexity of the process
- Lack of methods and procedures for obtaining budget
- Lack of policies for training at MOI.

- To introduce standardized format for data acquisition
- To promote administrative sectors giving them authority (delegation) and simplify procedures.
- MOI staff need direction and advice.
- Government should define policy for training.

F Knowledge and skills

- Lack of expert-trainers
- Lack of methodology

- Government should change policy for the training
- Training of trainers

G Guidance, monitoring and evaluation

- Lack of application
- Lack of evaluation
- Lack of encouragement

- Create systems for systematic guidance, monitoring and evaluation to motivate staff.

H Interference by Politicians and/or other kind of people

- Unfair selection of trainees due to interference of politicians of other influential officials
- Discouraging training of women abroad.

- MOI should define training policies to improve this system
- Design a plan to promote opportunities for women.

PART IV

ANNEX	P	PARTICIPANTS' PERSONAL VIEWS ON TRAINING - WEIGHTED AVERAGE SCORES	204
	Q	STRONG AND WEAK POINTS, AND SUGGESTIONS FOR IMPROVEMENT OF THE TNA WORKSHOP EVALUATION.	209

WEIGHTED AVERAGE SCORES - PARTICIPANTS' PERSONAL VIEW ON TRAINING
(Scale 1 - strongly disagree - 5 - strongly agree)

I. PERFORMANCE AND PRODUCTIVITY IMPROVEMENT

Questions	Categories	Chief Eng.	Asst. Res. Eng.	Fin. & Admin. Mgrs.	Total average
1. Training will improve my understanding of management principles and procedures		4.8	5.0	5.0	4.93
2. I would be more productive if I understood management principles and procedures better.		4.7	5.0	4.9	4.86
3. Advanced training should be made available as my performance improves.		4.6	4.7	4.9	4.73
4. New knowledge will help me improve my performance in my job.		4.5	4.8	5.0	4.76
5. Improved instructions or work assignments will improve my performance in my job.		4.4	4.6	4.6	4.53
6. Training will reveal my shortcomings.		4.6	4.7	4.9	4.88
Total average		4.6	4.8	4.88	4.78

II TOP MANAGEMENT AND SUPERVISORS' VIEW ON TRAINING, ENCOURAGEMENT AND APPLICATION OF INNOVATION

7.	My supervisor approves and encourages training for me.	3.8	3.7	4.0	3.83
8.	I am encouraged to apply new ideas/knowledge developed in training.	4.2	3.1	3.4	3.56
Total average		4.0	3.4	3.7	3.69

III PLANNING, COORDINATION AND ORGANIZATION OF TRAINING PROGRAMS

9.	Training programs are mandated by top management.	3.9	3.05	3.38	3.44
10.	I feel that I am expected to go for training programs if its needed or not.	2.6	1.5	2.7	2.26
11.	Top management understands the training related needs of lower management.	2.8	2.8	3.1	2.9
12.	Training is available on an adequate basis.	2.2	2.2	1.9	2.1
Total average		2.87	2.38	2.77	2.67

IV MANAGERS' ROLE, COACHING AND IDENTIFYING SUBORDINATES' NEEDS FOR TRAINING

13.	As a manager, a critical part of my job is "coaching" subordinates.	4.1	3.5	3.6	3.73
14.	It is my responsibility to meet the training needs of my subordinates	4.2	3.5	4.6	
Total average		4.15	3.5	4.1	3.91

V TIME AND MONEY SPENT ON TRAINING ACTIVITIES

15.	The time and money spent on training could be spent on something else.	1.0	1.5	1.4	1.3
16.	Training activities consume time at work that cannot be made up.	1.6	2.9	1.5	2.0
Total average		1.3	2.2	1.45	1.65

VI INDIVIDUAL LEARNING

	Chief Eng.	Asst. Res. Eng.	Fin. & Admin. Mgrs.	Total average
17. I learn better on my own with manuals and study materials	2.5	3.1	2.2	2.6

VII LEARNING IN SMALL GROUP AND INSTRUCTORS

	Chief Eng.	Asst. Res. Eng.	Fin. & Admin. Mgrs.	Total average
18. I learn better in small group situations with an instructor.	4.1	4.0	5.0	4.36
19. I prefer audio-visual training aids when I participate in training.	4.5	4.6	4.9	4.66
20. I prefer printed training aids when I participate in training	3.2	4.4	4.0	3.86

VIII UNDERSTANDING OF TASKS

	Chief Eng.	Asst. Res. Eng.	Fin. & Admin. Mgrs.	Total average
21. I have adequate understanding of the tasks associated with my job	4.4	4.5	5.0	4.63

IX TRAINED STAFF

	Chief Eng.	Asst. Res. Eng.	Fin. & Admin. Mgrs.	Total average
22. Well trained staff can replace the assistance of experienced experts in the organization	4.6	4.7	4.9	4.7

X SALARY RAISE AND PROMOTIONS

	Chief Eng.	Asst. Res. Eng.	Fin. & Admin. Mgrs.	Total average
23. Increased training will improve my chances of getting a raise or promotion	3.1	4.4	4.3	3.93

XI INTEREST IN TRAINING

	Chief Eng.	Asst. Res. Eng.	Fin. & Admin. Mgrs.	Total average
24. Overall, there is a little interest in training in my work group/division.	2.2	3.1	2.8	2.7

**STRONG AND WEAK POINTS, AND SUGGESTIONS FOR IMPROVEMENT
OF THE TNA WORKSHOP**

Chief Engineers, Resident Engineers, etc.

Strong points

1. PROGRAM CONTENT AND ORGANIZATION

- Orientation and discussions (repeated by 3 participants)
- Refreshing memory (repeated by 2) and learning new things
- Arrangement of sessions
- Working atmosphere (repeated by 2), participation and approach
- For the first time realized the needs for management training
- Well organized and more information in management
- Discussions on constraints and attitudes
- Learning about duties which were not clear before.

2. METHODOLOGY

- Methodology is good
- Working in groups (repeated by 2 participants)
- Team work.

3. PRESENTATION

- Good presentation of the subject
- Very clear explanation and lectures
- Better way of presenting the subject
- The use of audio-visual aids
- Learnt by excellent explanations of irrigation management.

4. PARTICIPANTS' LEVEL OF SATISFACTION

- Interesting program
- Exercises
- Patience and competence of instructors
- MOI staff know how training helps them in their jobs
- Efforts of the organizers
- Everyone has learnt something and the discussions were useful
- The material are very useful
- All points are strong.

Chief Engineers, Resident Engineers, etc. (contd..)

Weak points

1. PHYSICAL ENVIRONMENT
 - Poor physical arrangement and comfort (repeated by 4 participants)
 - Lecture room is not suitable for the event (repeated by 3)
 - Room is very warm (repeated by 2)
2. DURATION AND APPROPRIATENESS
 - Limited time related to the program (repeated by 8 participants)
 - The time for training was not suitable because many engineers could not attend.
3. PROGRAM ORGANIZATION, PLANNING, METHODOLOGY
 - To write more clear objectives
4. PARTICIPANTS' LEVEL OF SATISFACTION
 - I do not think there were any weak points (repeated by 4 participants)

Suggestions for improvement

- Duration should be lengthened (repeated by 8 participants)
- Better physical arrangement and comfort with ventilation, etc.(repeated by 5)
- Increase the duration to permit more exercises and experience and group discussions (repeated by 3)
- Use videos and more visual aids (repeated by 3)
- To continue to conduct similar training programs (repeated by 3)
- To bring examples of similar situations to strengthen the point and make it more clear.
- The next workshop should not be held in the autumn so that engineers from Half, Managil and Blue Nile could participate and share the experience
- Visit to any section of the ministry as a sample (case study).

Assistant Resident Engineers, Assistant Engineers, etc.

Strong points

1. PROGRAM CONTENT AND ORGANIZATION

- The differentiation between technical knowledge and managerial knowledge related to promote work (repeated by 2 participants)
- Job and task analysis (repeated by 3); identification of existing gaps in managerial knowledge and attitudes (repeated by 5)
- Review of the concept of irrigation management (repeated by 2)
- Identification of organizational constraints
- Establishment of priorities of training needs
- Definition of knowledge, attitudes and skills. (repeated by 2)
- Increased knowledge by training needs assessment.

2. METHODOLOGY

- Group atmosphere (repeated by 2)

3. PRESENTATION

- The presentation of the conductors (repeated by 2)
- The sharing of information

4. PARTICIPANTS' LEVEL OF SATISFACTION

- The good impression which has developed about working
- Raised my interest in working
- All points are strong.

Weak points

1. PHYSICAL ENVIRONMENT

- None

2. DURATION AND APPROPRIATENESS

- Short time (repeated by 5 participants)
- Short time for practical work.

Weak points - Assistant Resident Engineers, Assistant Engineers, etc. (contd...)

4. PARTICIPANTS' LEVEL OF SATISFACTION

- Lack of participation of supervisors and bosses to know the constraints of their field men
- No weak points (repeated by 5 participants)
- Not satisfied with the identification of organizational constraints (repeated by 3)
- Not satisfied with job and task analysis
- Concept of irrigation management was not clear

Suggestions for improvement

- I suggest that this type of workshop can promote out job especially for a person like me who has never had any training for the last 24 years.
- I suggest to give at least one week for each group
- To increase the time of the workshop and more training (repeated by 4)
- To stress on how to overcome the organizational constraints
- To put standard definition of important items
- Distribution of the session materials before the sessions' time by one or two days
- To extend the period for at least 7 days
- Increase the time for at least one week and the lectures have to be printed and distributed to improve
- Nothing to improve
- To increase the training workshops to different categories of staff
- I suggest to increase the time for these meetings as all the staff can benefit and the program will also be improved.

Finance and Administrative Managers

Strong points

1. PROGRAM CONTENT AND ORGANIZATION

- Preparation and coordination of the workshop
- We gained excellent insights about management training
- Perfect modern management
- Gained a lot of knowledge about training
- Job and task analysis (repeated by 3 participants)
- Establishment of priorities of the training needs assessment.

2. METHODOLOGY

- Cooperation among participants and trainers
- Methods of communication
- It was carried out in an excellent way
- The group work
- Group atmosphere
- Participation

3. PRESENTATION

- Facilitators' clear explanation making sure that every participant understands the contents
- The lectures were very useful and we gained more information (repeated by 2)

4. PARTICIPANTS' LEVEL OF SATISFACTION

- Group's interest, motivation and productiveness
- All points are strong (repeated by 2)

Weak points

Finance and Administrative Managers (contd...)

1. PHYSICAL ENVIRONMENT

None

2. DURATION AND APPROPRIATENESS

- Time is too short (repeated by 5 participants)

3. PROGRAM ORGANIZATION, PLANNING, METHODOLOGY

- No translation (repeated by 2 participants)

4. PARTICIPANTS' LEVEL OF SATISFACTION

- No weak points to state (repeated by 10 participants)
- Not satisfied with the identification of managerial knowledge, attitudes and skills.

Suggestions for improvement

- Increase seminars like this workshop because it is useful on the whole (repeated by 3 participants)
- Longer training sessions
- To have a chance of attending this workshop again (repeated by 6)
- Lengthening the period (repeated by 3)
- Time is not enough to understand
- I suggest another week for training
- The persons are not enough
- I suggest more need for training
- More workshops every year
- Adding more time for the group because this kind of workshops are rarely held
- To add more tuition and prospectus facilities.

Gate Operators

Strong points

1. PROGRAM CONTENT AND ORGANIZATION
 - To organization and the seriousness of the workshops
 - To analyze constraints
2. METHODOLOGY
 - Team work (repeated by 1 participant)
 - Participation (repeated by 4)
3. PRESENTATION
 - Lectures are good (repeated by 3 participants)
4. PARTICIPANTS' LEVEL OF SATISFACTION
 - Guidance in the right direction (repeated by 2 participants)
 - Excellent (repeated by 2)
 - Very good
 - Usefulness of the workshop (repeated by 2)
 - Good spirit
 - Honest advice

Weak points

1. PHYSICAL ENVIRONMENT

None
2. TIME FOR THE WORKSHOP (DURATION AND APPROPRIATENESS)

Time is too short (repeated by 8)
3. PROGRAM ORGANIZATION, PLANNING AND METHODOLOGY

None.

Weak points - Gate operators (contd...)

4. PARTICIPANTS' LEVEL OF SATISFACTION

No weak points (repeated by 8 participants)

Suggestions for improvement

- Increase the time limit for the workshop (repeated by 9 participants)
- Increase the number of training programs of this sort because of it's excellence (repeated by 4)
- To have more workshops of this kind.
- Lengthen the time of the workshop.
- Field visits would be appropriate.
- Extend the time limit by a weak (repeated by 2)

Top Management

1. PROGRAM CONTENT AND ORGANIZATION

- Review of the concept of knowledge, attitudes and skills (repeated by 2)
- Identification of managerial knowledge, attitudes and skills to perform major duties
- Identification of organizational constraints
- Concentrated material
- Very important event
- Material well arranged and concentrated
- Good organization
- The overall analysis of management
- Job and duties analysis
- Well prepared and intensive
- Concept of institutional development

2. METHODOLOGY

- The methodology of explaining the concept of knowledge, attitudes and skills
- The demonstration of TNA methodology was good.

3. PRESENTATION

- Lectures were very clear
- Good presentation

4. PARTICIPANTS' LEVEL OF SATISFACTION

- All points are strong
- Excellent workshop

Weak points - Gate operators

1. PHYSICAL ENVIRONMENT

None

2. TIME FOR THE WORKSHOP (DURATION AND APPROPRIATENESS):

- Time is very limited, I feel as I am in a hurry all the time
- Short of time (repeated by 3 participants)

3. PROGRAM ORGANIZATIONAL, PLANNING AND METHODOLOGY

None

4. PARTICIPANTS' LEVEL OF SATISFACTION

- There were no weak points (repeated by 9 participants)
- Not satisfied with the identification of organizational constraints.

Suggestions for improvement

- I think it is good enough
- Do more training
- Two-day workshops instead of one day
- More time is required for lectures and discussions
- More time is needed (repeated by 5 participants)
- It requires two days at least and information to be distributed before (repeated by 2)
- Provide more hand-outs, (repeated by 2), more presentations are needed and more workshops of this sort are suggested if possible
- Give more lectures
- Time to be increased if possible in the evenings.

Researchers

Strong points

1. PROGRAM CONTENT AND ORGANIZATION

- Management assessment
- Identification of managerial knowledge, attitudes and skills required to perform tasks
- The job description and job analysis
- Identification of managerial constraints
- The clear distinction between management and leadership
- About human learning, specially the affective domain
- Knowing how to manage and to interact to do better work in future with staff for development.

2. METHODOLOGY

- Team work
- The interactive exercises (repeated by 2 participants)

3. PRESENTATION

None

4. PARTICIPANTS' LEVEL OF SATISFACTION

All points are okay.

Weak points

1. PHYSICAL ENVIRONMENT

None

Weak points - Researchers (contd...)

2. TIME FOR THE WORKSHOP (DURATION AND APPROPRIATENESS)

- Lack of time
- Time is too short to understand all the concepts reviewed in the workshop because these concepts are new to the researchers
- Too intensive

3. PROGRAM ORGANIZATION, PLANNING AND METHODOLOGY

- Lack of content on local component
- While showing the results of priorities of managerial knowledge and attitudes, it was only showed what the participants thought were not correct and not the right ones that are required.

4. PARTICIPANTS' LEVEL OF SATISFACTION

- It should have a session on how to make decisions
- Not satisfied with job and task analysis
- No weak points (repeated by 3 participants)
- Not satisfied with the review of concept of the irrigation management.

Suggestions for improvement

(Was in Arabic and translated into English)

- More of this sort of workshops to be held
- To make use of the local experts' experience to participate
- Increase the time of participation to two to three days
- I think it would be better if some existing example of irrigation scheme in the world were evaluated in terms of managerial knowledge, attitudes and skills
- Ample time should be given for group discussions and interaction; and discussion of the outcome of the exercises with the participants
- To provide training from time to time.

Trainers

Strong points

1. PROGRAM CONTENT AND ORGANIZATION
 - Managerial knowledge, attitudes and constraints theme
 - Management training and role of trainers
 - Drafting job description for trainers
 - Identifying major duties and tasks performed by trainers
2. METHODOLOGY
 - Group work and timing
 - Group atmosphere
 - Participation (repeated by 2 participants)
3. PRESENTATION
 - The rich discussions by Madam Franca and Dr Rao
 - IIMI's trainers' knowledge in their work and the excellent way they did it and the trainees were gratified.
4. PARTICIPANTS' LEVEL OF SATISFACTION
 - Participants' interest to function as trainers at MOI
 - All points are strong and well explained
 - The workshop achieved all its objectives.

Weak points

1. PHYSICAL ENVIRONMENT

None
2. TIME FOR THE WORKSHOP (DURATION AND APPROPRIATENESS)

Time is not enough (repeated by 2 participants)

Weak points - Trainers (contd....)

3. PROGRAM ORGANIZATION, PLANNING AND METHODOLOGY

Long brainstorming session where irrelevant points were raised because I have participated in it before

4. PARTICIPANTS' LEVEL OF SATISFACTION

- No weak points (repeated by 6 participants)
- I do not think that there are many weak points
- Not satisfied with the discussion on the need for conducting management training at MOI.

Suggestions for improvement

- To have more training programs to improve our job performance and to work well than before, and to have a good relationships among staff.
- We are longing for such training workshops in the near future.
- I suggest to increase the number of workshops of this sort with seriousness and successful to give our trainers and trainees more information
- I suggest that the MOI encourages training and have more workshops of this kind
- To extend the period for more that a day and the trainers should be given chances to get some training courses abroad
- I think the time for this workshop is very short therefore I suggest more time to be given
- Widen the participation and extend it with other groups in the field as well.
- No suggestions (repeated by 4 participants)

PART V

Instruments used for the exercise during the Training Needs and Organizational Constraints Assessment in Sudan

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INSTRUMENTS USED DURING THE TNA WORKSHOPS

INTERACTIVE EXERCISE

GETTING TO KNOW EACH OTHER

(Small group activity: interviews and introductions)

Time: 10 minutes (pair interaction)
20 minutes (plenary introduction)

DIRECTIONS

- 1. Pair up with someone you want to know better in this group
- 2. Find out professional and personal information about your partner

Suggestions for the interaction:

Please share with your partner your-

- (a) name/pet name,
- (b) work information (professional area, position and post location),
- (c) ¹feelings by completing the following statement, and

When I am in my work environment, I like myself

.....

however

- (d) expectations on this workshop (please list two on the attached sheet which will be collected by the facilitators).

- 3. Each of you should be prepared to:
 - * present your partner to the group sharing the information you have got during the interaction with him/her.

¹ Each participant received different statement to develop interest and attention.

**MAJOR DUTIES AND TASKS PERFORMED BY
IRRIGATION MANAGERS**

(Take three for better brainstorming : a modified technique)

DIRECTIONS

A. INDIVIDUAL PREPARATION

Time: 10 minutes

1. Think about different duties and tasks performed by managers.
2. Identify and write down two major duties with the respective tasks which enable you to accomplish your goals.

B. WORKING IN TEAMS (Small groups)

Time: 30 minutes

3. Form a team with three participants to discuss the individuals lists and write a long list of duties using your own ideas
4. The team quickly identifies a rapporteur to write down carefully the group's contributions. Keep in mind that the rapporteur should include his/her own contributions too.
5. Identify with your group the three major duties and write them on the flipchart to report to the whole group.

C. REPORT TO THE WHOLE GROUP YOUR THREE MAJOR CHOICES.

Time: 10 minutes

**D. PLEASE DELIVER THE EXERCISE SHEET No. 2 (TEAM WORK EXERCISE)
TO THE FACILITATORS.**

EXERCISE SHEET NO. 1

MAJOR DUTIES AND TASKS PERFORMED BY IRRIGATION MANAGERS
 (Take three for better brainstorming: a modified technique)

STAFF CATEGORY:

A INDIVIDUAL EXERCISE

DUTIES	TASKS
(a)	1.
	2.
	3.
	4.
	5.
(b)	1.
	2.
	3.
	4.
	5.

Exercise Sheet no. 2 (contd...)

STAFF CATEGORY

- (b) Identify with your group 3 duties which are considered the major ones to report to the whole group.

THREE MAJOR DUTIES

- 1.
- 2.
- 3.

FORMAT FOR SELF-ANALYSIS OF IRRIGATION MANAGEMENT JOBS

1. How is your performance assessed?
 - (a) Technical activities:

 - (b) Managerial activities:

2. Are there opportunities for improvement?
 - (a) Technical skills

 - (b) Managerial skills

3. What are the constraints in performing?
 - (a) Technical activities

 - (b) Managerial activities

PRIORITIES**GAPS IN MANAGERIAL KNOWLEDGE TO BE CONSIDERED IN DESIGNING
A TRAINING PROGRAM**

RANK	KNOWLEDGE
1st	
2nd	
3rd	
4th	
5th	
6th	
7th	
8th	
9th	
10th	

PRIORITIES**GAPS IN MANAGERIAL ATTITUDES TO BE CONSIDERED IN DESIGNING
A TRAINING PROGRAM**

RANK	ATTITUDES
1st	
2nd	
3rd	
4th	
5th	
6th	
7th	
8th	
9th	
10th	

EXERCISE

ORGANIZATIONAL CONSTRAINTS

Group Process Technique
(Modified trip around the table)

Directions

1. Form four groups of participants.

A *B* *C* *D*

2. Each group will elect a rappporteur.
3. Each group will discuss and brainstorm the constraints within the concerned area assigned below.
4. The groups will have 10 minutes to discuss and list the constraints.
5. The rappporteur will be responsible for writing the list. (Should be a list of about 10 constraints).
6. In the next step, the rappporteur will begin the "trip-around the table". He/She will have 5 minutes to visit each table.
7. He/She will present his/her group area of constraints and the list from the group to the new table and will collect contributions from the participants to improve his/her list.
8. After visiting the other three tables, he/she goes back to his/her own group to share the contributions collected during the "trip" and make group decision on five major constraints in 10 minutes.
9. The rappporteur will write these constraints on the flipchart and present to the whole audience (5 minutes).
10. At the end, the participants will be invited to return the long and short lists of constraints to the facilitators.

ORGANIZATIONAL CONSTRAINTS

CONSTRAINTS	RECOMMENDATIONS FOR OVERCOMING THESE CONSTRAINTS
A. Human resources	
B. Financial resources	

ORGANIZATIONAL CONSTRAINTS (Contd...)

CONSTRAINTS	RECOMMENDATIONS FOR OVERCOMING THESE CONSTRAINTS
C. Material resources	
D. Information/Communication	

ORGANIZATIONAL CONSTRAINTS (Contd..)

CONSTRAINTS	RECOMMENDATIONS FOR OVERCOMING THESE CONSTRAINTS
E. Rules/Procedures	
F. Knowledge/Skills	

ORGANIZATIONAL CONSTRAINTS (Contd...)

CONSTRAINTS	RECOMMENDATIONS FOR OVERCOMING THESE CONSTRAINTS
G. Guidance, monitoring and evaluation	
H. Interference by politicians	

ORGANIZATIONAL CONSTRAINTS (Contd..)

CONSTRAINTS	RECOMMENDATIONS FOR OVERCOMING THESE CONSTRAINTS
I. Interaction with farmers	

ORGANIZATIONAL CONSTRAINTS

MODIFIED NOMINAL GROUP TECHNIQUE

- 1st Phase Each participant will write down three major organizational constraints along with suggestions to overcome or minimize them. (This list will be written individually in the attached form.
- 2nd Phase Each one will be invited to say the constraints from his/her own list, one by one, repeating this exercise until we have everyone's list on the flip chart.
- 3rd Phase Randomly, the facilitator will invite a few authors to present their contributions to the group to provoke brief discussion.
- 4th Phase Each participant will individually choose and rank 05 items which he/she considers to be the most critical ones which greatly affect his/her job performance.

**ORGANIZATIONAL CONSTRAINTS
MODIFIED NOMINAL GROUP TECHNIQUE**

CONSTRAINTS	RECOMMENDATIONS FOR OVERCOMING THESE CONSTRAINTS
1.	
2.	
3.	

PERSONAL VIEW ON TRAINING PROGRAMS

1. Job category: _____ 2. Age: _____
3. How many years of experience at MOI? _____
4. Level of education:
 Graduate -----; Undergraduate: -----; Secondary -----; Elementary -----.

The following statements are related to how you feel about training. There are no right or wrong answers. Please give only one answer for each statement.

If you feel that a statement is true, circle 5 for "strongly agree".

If you feel that a statement is more true than false, then circle 4 for "agree".

If you are undecided about the statement, then circle 3 for "undecided".

If you feel that the statement is more false than true, then circle 2 for "disagree".

If you feel that a statement is definitely false, then circle 1 for "strongly disagree".

	<u>Strongly agree</u>				<u>Strongly disagree</u>
1. Training will improve my understanding of management principles and procedures.	5	4	3	2	1
2. I would be more productive if I understand management principles and procedures better.	5	4	3	2	1
3. Advanced training should be made available as my performance improves.	5	4	3	2	1

Personal View on Training (contd...)

4.	New knowledge will help me improve my performance at my job.	5	4	3	2	1
5.	Improved instructions or work assignments will improve my performance at my job.	5	4	3	2	1
6.	Training will reveal my shortcomings.	5	4	3	2	1
7.	My supervisor approves and encourages training for me.	5	4	3	2	1
8.	I am encouraged to apply new ideas/knowledge developed in training.	5	4	3	2	1
9.	Training programs are mandated by top management.	5	4	3	2	1
10.	I feel that I am expected to go to training programs whether I need it or not.	5	4	3	2	1
11.	Top management understands the training related needs of lower management.	5	4	3	2	1
12.	Training is available on an adequate basis.	5	4	3	2	1
13.	As manager, a critical part of my job is "coaching" subordinates.	5	4	3	2	1
14.	It is my responsibility to meet the training needs of my subordinates.	5	4	3	2	1

Personal View on Training (Contd...)

Annex 9c

15.	The time and money spent on training could be spent on something else.	5	4	3	2	1
16.	Training activities consume time at work that cannot be made up.	5	4	3	2	1
17.	I learn better on my own with manuals and study materials.	5	4	3	2	1
18.	I learn better in small group situations with an instructor.	5	4	3	2	1
19.	I prefer audio visual training aids when I participate in training.					
20.	I prefer printed training aids when I participate in training.	5	4	3	2	1
21.	I have an adequate understanding of the tasks associated with my job.	5	4	3	2	1
22.	Well trained staff can replace the assistance of experienced experts to the organization.	5	4	3	2	1
23.	Increased training will improve my chances of getting a raise or a promotion.	5	4	3	2	1
24.	Overall, there is little interest in training in my work group/division.	5	4	3	2	1

TNA WORKSHOP EVALUATION

(You need not sign your name)

A. Goals

The objectives of this workshop are listed below. Please mark the number that most closely indicates how you feel each objective has been achieved. The scale is from 1 (low, objective not achieved) to 5 (high, objective achieved very well).

1. Review of the concept of institutional development, irrigation management and roles of managers and leaders.

1 2 3 4 5

2. Job and duties analysis: technical and managerial components.

1 2 3 4 5

3. Review of the concept of knowledge, attitudes and skills.

1 2 3 4 5

4. Identification of managerial knowledge, attitudes and skills required to perform major duties.

1 2 3 4 5

5. Identification of organizational constraints.

1 2 3 4 5

6. Establishment of priorities of the training needs assessed.

1 2 3 4 5

TNA Workshop Evaluation (contd...)B. Opinions and feedback

What is your overall rating of the TNA workshop for each of the following items? Please circle the appropriate number.

	Very <u>low</u>	Low -----	Average -----	High -----	Very <u>high</u>
1. Orientation	1	2	3	4	5
2. Group atmosphere	1	2	3	4	5
3. Interest and motivation	1	2	3	4	5
4. Participation	1	2	3	4	5
5. Productiveness	1	2	3	4	5
6. Physical arrangement and comfort	1	2	3	4	5

Please answer the following questions:

1. How would you rate this meeting? (check)

Not good Mediocre All right Good Excellent

2. What were the strong points?

3. What were the weak points?

4. What improvements would you suggest?

ANNEXURES

PART VI

TRANSLATED INTO ARABIC FOR THE GATE OPERATORS' GROUPS

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WELCOME LETTER

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

الأخ / المشارك الكريم .

السلام عليكم ورحمة الله .

الموصوف : ورثة محل لتقدير احتياجات

التدريب وفعالياته

ترحب بكم بصفة المعهد العالمي للأدوية والادوية

التدريب بوزارة الري . لهم عظيم الشرف بما كنتم القيمة

وننتفى ان ننالوا القائده المرجوه من هذه العهده

وان يتواصل التعاون بيننا حتى يبتنى للوزارة القيام

بالمهام المطلوبه .

وشكراً

وزارة الري - ادارة التدريب



المعهد العالمي للأدوية والادوية

Lenete P. Franca

أهداف ورشة العمل

- 1- مراجعة مفهوم إدارة الري والتفويض بين الإدارة والمهام الفنية .
- 2- تحليل الوظيفة والمهام .
- 3- المعرفة الاولية ، السلوك والممارسات المطلوبة لإدارة المهام .
- 4- معرفة التفرعات الموجودة في المعرفة الاولية ، السلوك والممارسات .
- 5- معرفة المعوقات الاولية .
- 6- ايجاد الاولوية للاحتياجات التدريبية .

برنامج اليوم

١٤ أغسطس ١٩٩٢

- | | |
|--------------------------------------------|-------------|
| الاقتناح
واجب بالكتابة. | - ٨ - ٩½ |
| القطر. | - ٩½ - ١٠ |
| وظائف الإدارة. | - ١٠ - ١٠½ |
| الواجبات والمهام الرئيسية. | - ١٠½ - ١١½ |
| تمهيد ووصف وظيفي | - ١١½ - ١٢ |
| الكاتب (ن نيمان). | - ١٢ - ١٢½ |
| شروع | - ١٢½ - ١٣ |
| كتابة المعرفة الادارية ، السدوك والمهارات. | - ١٣ - ١٣½ |
| كتابة المعوقات. | - ١٣½ - ١٤ |
| التقييم و النتائج. | - ١٤ - ١٤½ |

اشتاء ضبط الماء وتوزيعه ليقدم مراقب المياه
بالمجان لطلاب مثال :-

- ١- اتمام القرار
- ٢- إتمام الواجب
- ٣- الاتصاف مع القناطر الأخرى
- ٤- العمل كجمعية
- ٥- كتابة التقارير وتحميل المعاملات
- ٦- التعاون مع هيئة الري
- ٧- بناء القنطرة
- ٨- الجامعة الواجب

٥٤٢ الاداري

- ١١ اتخاذ القرار بناءً على المعلومات
- ١٢ التعامل مع الجمهور
- ١٣ الإيصال
- ٤- التشجيع والتقدير
- ٥- توجيه التعليمات
- ٦- مراقبة العمل والإشراف عليه
- ٧- رفع التقارير
- ٨- حضور الاجتماعات
- ٩- العمل كجسميات
- ١٠- القيادة
- ١١- إطاعة الأوامر

لكل وزارة أو مؤسسة يجب توفر
الآتي :-

- ١- أخصائى الانساضى
- ٢- المعرفة
- ٣- توفر المعلومات
- ٤- اتباع القوانين
- ٥- التمويل

تليل شخصي للهام

١- ماهو تقديرك لادائك

٢- كيف تكن من ادائك

٣- ماهي المعوقات التي تواجهك

الانتظام

يتعلم الانسان بثلاث طرق

١- المعرفة

٢- التأثير

٣- الممارسة

صياغة المعرفة

المعرفة

كيف نقل الأشياء

تأتي المعرفة من:

* الكتب

* المكتبة

* الانترنت

* المنشورات

* الجامعة - الكلية

التأثير:

المشاعر والأحاسيس



السلوك



التصرفات

تتمية السلوك :-

* الأسره

* الدين

* المجتمع الصغير (الطائفة)

* المجتمع

كل هذه العوامل تقيد على
التأثر

المعرفة :-
هو حفظ المعلومات

والحفاظتها والعلاقات

مثال لذلك :-

يجب عليك فتح المياه

للزراعة في الوقت المناسب

وانت تملك معرفة فتح الأبواب

وهذا نفع من المعرفة

تاهل ساء

الله بهل شائا شلقو و سلقو
بيد انلا هليما بامه كا لخرة بند

* لله لقا سلقو تاا بيبي *

هليما رثبة اامه رثبا ساه
اوه بالست كا شه

تاهل ساء

* لله لقا سلقو تاا بيبي *

بيد انلا لله انامه بينهوا

* ابيبه تاا تاا بيبي *

المهارات هي المقترحة على-

* عمل الأشياء

* تطبيق المعرفة والمشار

و الإحاسيس في العمل .

مثال لذلك :-
اعطى المزارع كفايته من الماء

في الوقت المحدد .. ويجب إظهار

المسئولية والصدق في ذلك

وهذه تثير كفاءه في العمل.

أرجو وضع دائره حول ما نراه صميًا.

١- هل حققت الـهدف في مراجعة مفهوم إدارة الري والتمييز بين الإدارة والمهام الفنية؟

٥ ٤ ٢ ١

٢- هل حققت الـهدف في تمييز الوظيفة والمهام؟

٥ ٤ ٢ ١

٣- هل حققت الـهدف في المعرفة الإدارية، السلوك والمهارات المطلوبة للأداء المهام؟

٥ ٤ ٢ ١

٤- هل حققت الـهدف في معرفة الثغرات المعقدة في المعرفة الإدارية، السلوك والمهارات؟

٥ ٤ ٢ ١

٥- هل حققت الـهدف في معرفة المصطلحات الإدارية؟

٥ ٤ ٢ ١

٦- هل حققت الـهدف لاجتاد الاداره لاحتياجات التدريب؟

٥ ٤ ٢ ١

ب. الإدارة والتقييم (النتائج)

١- جد وضع دائره حول الرشم الذي سراه صحياً .

ماهو تقييمك لهذه الورشه من الاشياء الايجابيه .

ضعيفاً جداً	ضعيفاً	متوسط	على	على جداً	
١	٢	٣	٤	٥	١- التوجيه
١	٢	٣	٤	٥	٢- مع الجماعة (الجد الجماعي)
١	٢	٣	٤	٥	٣- الفائدة والادفع
١	٢	٣	٤	٥	٤- المتاه
١	٢	٣	٤	٥	٥- ممتعه
١	٢	٣	٤	٥	٦- امداد طبيه ومترع

ارجو الاجابه على هذه الاسئله :

١- ماهو تقييمك لهذا الاجتماع

ممتاز جيد صان وضع ليس جيداً

٢- ماهي نقاط البؤسه في ورشه العمل ؟

٣- ماهي نقاط الضعف في هذه الورشه ؟

٤- ماهي الاصلاحات التي تقترعها ؟