

# CHAPTER 1

## Effective Farm Management Decision-Making in the Gezira Scheme

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### 1.1 INTRODUCTION

The Gezira Scheme is the largest farm in the heart of Africa. It extends a few miles south of Khartoum to about 25 miles north of Sennar. It comprises more than 2.1 million feddans and accounts for 50 % of the total irrigated area in the country. The soil of the Gezira Scheme is described as black cotton soil, rich in clay content, which when getting dry results in deep cracks. This property of the soil helps to maintain the soil structure and allows the free movement of irrigation water and air.

The Gezira Scheme slopes gradually from south to north, thus rendering gravity irrigation possible. The irrigation system intersects the scheme like a mesh, consisting of tens of thousands of kilometers of canals, escapes and surface drains and hundreds of thousands of kilometers of subsidiary field channels (Abu Ishreens and Abu Sitas).

The Gezira Scheme consists of the Gezira main and the Managil extension. Each of these Regions is divided into Seven Groups and subdivided into 53 Blocks. In the Gezira, there are 107 thousand tenants, 2805 employees, 10085 workers on a permanent basis and some 700,000 seasonal, temporary and casual workers. The scheme provides livelihood for more than two million citizens living within its boundaries.

The Gezira Scheme is often described as a socioeconomic example of democratic regional development. It is a blend of private and Government enterprises. It is a joint venture between the Government, the management and the tenants. Each party has specific duties and costs in the production process. The Gezira Scheme is specialized in the production of extra long and medium staple cotton, wheat, sorghum, groundnut and vegetables. Lately, livestock has been introduced at a limited scale in the Scheme. (Livestock is now introduced in the rotation of 13 Blocks, which includes Barakat and Dirweesh...)

The Gezira Scheme is managed by a board of directors called Sudan Gezira Board (SGB). It consists of 23 members and a Chairman. The Chairman of SGB is the Minister of Agriculture and Natural Resources. In the 1950s, after nationalization, the Board consisted of seven members only.

The present representation of the SGB is meant to be large to give all parties concerned a chance for participation. The members of SGB represent the executive management, the Tenant Union of the scheme, the scheme's employees, agriculturists and workers, top executives and professionals from the relevant ministries, corporations and institutions (recently, 50 % of the representation on the Board has gone to the farmers / tenants).

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In addition to the SGB, there is an executive administration with a Managing Director (under the new liberalization policy, the designation is changed to General Manager) on the top, assisted by a deputy and four main administrations. Other specialized units are attached to the office of the Managing Director. The four administrations (different administrations and commercial companies are being formulated under the new policy of the Government) are the Finance Administration, the Agricultural Administration, the Engineering Administration and the Administrative Affairs Administration. The specialized units are the legal unit, the internal auditing unit, the socioeconomic research unit, and the information and public relations unit. Parallel to these is the irrigation operations directorates, which are administered by a totally different body, the Ministry of Irrigation (MOI).

The SGB sets out the general policy of the scheme. It approves the work plans and programs prepared by the executive administration. It supervises implementation which is conducted by the executive administration. The administration works in a totally integrated manner with the general directorates for irrigation operations. These directorates (part of the MOI) provide irrigation water at the level of the minor canals and from that point onward, water distribution becomes the responsibility of the agricultural administration.

The Sudan Gezira Board and top administration body is assisted in running the scheme by different committees:

*1. Administration Committee:* It is composed of the Managing Director and his Deputy and the managers of four administrations. The committee looks into the different subjects submitted to the Managing Director. The Managing Director then decides on those subjects which need consultation of the committee.

*2. Joint Committee:* Its includes the concerned officials and Tenants Union representatives. It looks into the matters concerning agricultural policy and preparation for the different seasons. It also decides on reasonable compromises on different issues related to agricultural routine work.

*3. Engineering Inputs Committee:* Its concern is to make available all inputs needed by the different engineering departments so as to safeguard the production process.

*4. Contracts Committee:* This committee is to look into the different contracts needed by different works within the scheme. It evaluates all contracts and bids offered on the basis of the Scheme advertisement tenders.

## **1.2 THE OBJECTIVES OF THE GEZIRA SCHEME**

The Gezira Scheme Ordinance of 1984 sets out the objectives of the scheme as follows:

- (i) *The utilization, development and promotion of existing natural and agricultural resources, on commercial bases using the best available production methods to achieve maximum socioeconomic benefits.*

- (ii) *The promotion of the social development and services in the scheme area for the benefit of the tenants and other persons living within it.*

The objectives are achieved through an exhaustive list of tasks and measures, and a multitude of key management performance actors all over the scheme.

The first of these key management actors is the Sudan Gezira Board. The main farm management decision taken by the SGB is to formulate the general policy of the scheme, approves its work plans and programs, and supervises their implementation. The formulation of these policies is made in line with the general country's socioeconomic strategy. The SGB translates these strategies into action.

The latest of these policies (1991/1992) meant to transfer the Sudan Gezira Scheme into a granary to achieve self food security, especially after the last two consecutive drought years, and refusal of international bodies to keep food out of the political game. The current agricultural policy reduced the cash crops and increased the food crops. The area of cotton for the season 1991/92 was reduced by more than 45% and that of cereals was increased by 100% of the average over the last ten years (1980 - 1989/90)<sup>2</sup>

Once this decision was taken about the area of different crops, the executive administration acts accordingly. Each of the four administrations takes the respective management decision to make these policies a reality. The decisions taken by the various administrations are interrelated with each other in terms of information and work to be accomplished.

### **1.3 ROLES OF THE THREE PARTNERS**

To understand how the Gezira Scheme operates and the farm management decisions are taken, it is necessary to understand the role of each of the three partners (the government, the management and the tenants) in the production process and the associated cost that each party incurs as a result.

#### **1.3.1 The Government**

*The Government is responsible for digging and maintaining the irrigation and drainage system and all irrigation operations in the scheme until the minor canals.* In return, the Government receives proceeds collected from the water and land charges levied on the areas of the different crops grown in the Scheme.

This job accounts for the one-half of MOI's activities, as the area of the scheme is about 50 % of the irrigated sector in the Sudan. The irrigation operations in the Gezira Scheme are conducted via two irrigation operations directorates - - one for the Gezira and the other for the Managil Regions. There are seven divisions, twenty three subdivisions and seventy eight sections in each directorate under the MOI.

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<sup>2</sup>Average cotton area = 435,448 feddans and average cereal area = 647,852 feddans.

The maximum area that can be irrigated during any one season is one-half of the Scheme. This means that the Scheme may irrigate a total of 1.5 million feddans each year (during the summer and winter seasons).

In addition to the above stated direct tasks and responsibilities, the Government is nationally responsible for the importation of all chemicals including fertilizers, insecticides, sacks, marketing of the cotton, and determining the cotton and wheat farm-gate prices to the tenants.

### **1.3.2 The Sudan Gezira Board**

The Sudan Gezira Board represents the management of the Gezira Scheme. It performs two types of tasks: (i) on behalf of the tenants; and (ii) obligations towards the scheme. The first category includes tasks about cotton and wheat crops, the costs of which are debited to the tenant accounts. The other type of tasks are its own responsibilities towards the Scheme. The costs of the tasks under the second category are covered by the Board using its proceeds from the scheme.

The tasks performed on behalf of the tenants include the following:

- (a) Cleaning, levelling and preparing the land for cultivation, mainly using the scheme machinery.*
- (b) Digging and maintaining the subsidiary field channels (Abu xx and Abu vi).*
- (c) Distributing tenancies and charging tenants water and land charges as decided by the Ministries of Agriculture and Finance, Advisory Unit for Agricultural Corporations (AUAC), Ministry of Irrigation and the Gezira Tenants Union.*
- (d) Providing agricultural inputs to the tenants in time and place at cost.*
- (e) Supervising the tenants in their work and supplying them with the necessary guiding instructions to manage these inputs.*
- (f) Supervising other production operations including ginning, grading and transportation.*
- (g) Preparing and maintaining the Gezira Scheme fixed and movable assets.*
- (h) Conducting the socioeconomic research and studies which help promote the performance and welfare of the Scheme, its labor force and residents.*

The Sudan Gezira Board represented by its Finance Administration keeps all financial records of the Scheme and individual tenants accounts. At the end of each cropping season, it prepares individual profit and loss accounts of the tenants and the Scheme income statement.

The costs incurred by the SGB in accomplishing the tasks conducted on behalf of the tenants are debited to the tenants individual accounts. These expenses are deducted from each tenants proceeds as soon as the earnings are credited to the tenants' accounts. Moreover, the Board extends cash

advances to the tenants for certain operations and these advances are treated in the same manner. In addition to the above costs, the Board will also deduct from each tenant's account the water and land charges due for the cultivation of the grown crops, plus a service charge which includes interest to the Bank of Sudan.

Starting with the season 1991/1992, the financing of the Gezira Scheme is done by a consortium of financial institutions instead of the Bank of Sudan. The Sudan Gezira Board acts as the coordinating body between the tenants and the consortium. It represents the tenants in the negotiations for the financing to the Scheme and repays these finances to the consortium after the cotton and other crops are sold.

Other duties performed by the SGB as specified in the 1984 Ordinance include the following:

- (a) *Recruitment of employees and workers, revision of their terms of employment, in addition to training and other manpower development activities.*
- (b) *Contracting with persons or agencies inside or outside the country on the basis of approved budgets and prevailing financial rules and procedures to import production inputs, machinery, implements or conduct services required by the Scheme.*
- (c) *Disposition of any property not of use or fully salvaged and/or being redundant in accordance to the existing financial rules and procedures.*
- (d) *The SGB has the right to form committees to help in executing its duties.*

It also has the right to invest any capital not in use, as well as to lend it to the central government. In return for the above duties, the SGB may receive a share in the water and land charges.

### **1.3.3 The Tenants**

The tenants are a pivot in the production process. *They are the party who plant the seeds, irrigate the land and finally harvest the crops, using in this process all the inputs provided to them by the SGB or the Government.* There are many duties that the tenants perform and pay costs from their own or other resources.

In return, the tenants receive all the income above the costs made on their behalf. Any excess is put as a credit to their individual accounts and is paid to them before 30 June, or if in case of deficits, their individual accounts are debited and these debts will be deducted from the following years surpluses, if any.

## **1.4 FARM MANAGEMENT INFORMATION**

Accurate and efficient management for decision-making requires extensive information concerning past costs, returns, inputs used and production, present financial and physical conditions, and future costs and returns. This information is acquired from the scheme records, which are compiled at the headquarters by the four administrations at the *Block* levels, and the socioeconomic research unit.

The Gezira Scheme represented by the different administrations uses these records to make production decisions, financial decisions, services decisions, and reorganization decisions. These records provide the basis for preparing reports for legal bodies, such as the General Auditor, the Council of Ministers, the Minister of Agriculture, etc. The data available are voluminous, but adequate for most of the decisions taken regarding crop production and financing. The management considers the scheme as one management unit, although many suggestions were raised for dividing it into several management zones, but this is not feasible at present for several economic and technical reasons.

### **1.4.1 Available Farm Management Information**

Since 1911, the Gezira Scheme has accumulated production data on a time series basis according to the types of crops grown. This data include the physical inputs provided for each land unit cultivated with a crop and their costs. Data on cotton and wheat are more complete than on sorghum and groundnut.

The information needed to achieve the scheme objectives is numerous and varied in nature. It includes the following areas: (a) production; (b) finance; (c) policies; (d) economics; (e) social; (f) meteorological; (g) natural resources (irrigation); (h) international factors; and (i) manpower. The information from all these sources are compiled on a continuous time series basis and meshed together before it is used for farm management decisions.

The outcome of these data may include the following: (i) annual income statements (profit / loss); (ii) balance sheet statement; (iii) crops costs by agricultural operations; (iv) the physical input requirements and the crop sale proceeds; (v) an inventory of the Scheme assets; and (vi) a list of depreciation or replacement costs.

Availability of this information is important for the preparation of work plans and programs each year, which include current and development budgets of each Administration, department or unit in the Scheme. It is also important for writing annual reports on the performance of each unit, department or administration; annual report about the scheme; and reports for the General Auditor and Council of Ministers.

### **1.4.2 Socioeconomic Research Unit (SERU)**

One of the specialized units in the scheme, which is responsible for the collection, compiling and disseminating the information and statistics of the scheme, is the socioeconomic research unit. It has been collecting and producing annual reports, such as the economic analysis for field crops, annual economic review, and Gezira current statistics for more than a decade.

The sources of these data and reports are the *Administrative Affairs Administration*, the *Agricultural Administration*, the *Finance Administration* and the *Engineering Administration*, the *Archives center* and the *Socioeconomic Research Unit's own staff* located in the field. The kinds of information already being collected by the Socioeconomic Research Unit include the following at the level of Agricultural Block, Groups and Regions:

1. Areas, yields and production of the main crops.
2. Quantities of inputs used for the cotton and wheat crops and their prices and costs (seeds, fertilizers, insecticides, herbicides and sacks).
3. Amount of labor used in the Gezira Scheme classified into family, local labor, imported labor, floating labor and an estimate of the total scheme requirements compared with the total available.
4. Costs of spraying herbicides and insecticides and number of sprays in case of cotton insecticide spraying.
5. All the agricultural operations performed on each crop and their costs. These include land preparation operations, agricultural operations, harvest and post harvest operations, service, water / land charges collected from each crop, and transport.
6. Prices of the different crops and for cotton these prices by grades and variety.
7. Quantities of other inputs used such as petroleum products, quantities received and quantities consumed, and also data on irrigation water requirements and deliveries in million cubic meters by months.
8. Also, in order to take the correct farm management decision, the Socioeconomic Research Unit sometimes conducts studies and/or surveys concerning certain problems.

In addition to this, the unit also conducts research on the effects of the social changes resulting from the economic development and social services provided to the people living in the scheme. The turn around time between the information collection and its conveyance after analysis is not long because of the computer facilities available at the Unit, which also may be used as a word processor.

It is worth noting that the constraints on the use of this information for management are not significant so far. An example of the usefulness of the data collected by the SERU, in taking the correct management decision, is that concerning the allocation of 230,000 feddans of cotton on the Gezira tenants during the year 1991/1992. The average area of cotton cultivated during the last ten years (1980 - 1989-90) was about 435,000. Therefore, the cultivation of 230,000 means a reduction of more than 45%. The question is whether the proposed area is to be proportionately allocated on all the tenants, or whether it is to be allocated to those tenants who historically are distinguished for their high cotton productivity.

In order to address the questions raised, management of the scheme asked the SERU to furnish it with the cotton productivity data of all Blocks for the last 16 years and also the profit and loss statements. On basis of these two sets of data, the management decided to allocate the 230,000 feddans on the productive Blocks and to exclude the non-productive Blocks. This decision would not have been feasible if the requested data were not available.

### 1.4.3 Information Difficulties

The Gezira Scheme has been in continuous operation for more than 75 years. During this period, many changes have taken place, especially to the soil, the canalization system, the agricultural environment, and the tenant himself as a factor of production. Studies on these issues need to be conducted to investigate the extent of change on the productivity and the social aspects of the farming community.

Agricultural productivity in the Gezira Scheme varies between and within the Agricultural Groups. It also varies between the Blocks and within the same Block, and even within the same number (land unit of 90 feddans). Factors affecting these variabilities are not yet completely investigated. It is with pleasure one notes that there are certain on-going programs on soil test analysis, deep plowing, canal desilting, etc. Yet, the results of these programs are not available in the form that can be used in making farm management decisions. How effective are these programs in increasing the productivity is still under investigation. It is highly recommended that the Gezira Scheme by now should have soil analysis maps, and productivity maps, superimposed on the soil maps with correlations between the soil nutrients and productivity, especially for the micronutrients.

An example of the waste that may take place from year to year as a result of a lack of information may be noted from an example given as under:

*The provisions of insecticides for next season requires knowledge of the kinds of pests that may be dominant in that season. These types of pests are affected by the weather conditions that will prevail in the next season. Information on next year's climate is not available and is difficult to predict. Therefore, when deciding to import next season's insecticides, the management allows for both groups of pests (dry and wet). In this case, some of the imported insecticides may not be economically used.*

But the question is why the Gezira Scheme management does so. The answer is easy. It takes a long time to obtain approval for foreign exchange to open letters of credit and import the insecticides. If the Gezira Scheme management is assured of getting the foreign exchange needed to import the different inputs on time, then this waste would not have taken place. Nevertheless, it is cheaper to waste a few thousand dollars on some insecticides than to lose the whole crop. The problem of foreign exchange availability to the Gezira Scheme will remain one of the main deterrents to the progress of the Scheme.



#### **1.4.4 Management Decisions Based on Rapid Information Collection**

The management decisions which require the fastest collection of information are those which cannot be postponed and which need immediate action. In the Gezira Scheme, there are a few such management decisions which may be enumerated below:

1. *Crop protection operations that depend on the state of winds and irrigation of the crops.*
2. *Herbicide application which is closely tied to sowing and irrigation dates.*
3. *Sudden investigation of pests and crop diseases.*
4. *Water indents, water shortages, canals spilling over or breaking, especially during high demand.*
5. *Political decisions, the implementation of which needs much preparation in a very short time.*
6. *Inputs that need to be transported to and from the scheme stores on time, especially during the rainy season.*
7. *Labor shortages during the critical growing and harvesting periods.*
8. *Farm mechanical land preparations and desilting programs when interrupted for any reason.*
9. *Social information due to adoption of certain packages of technology.*

#### **1.5 KEY MANAGEMENT PERFORMANCE CONCERNS**

The key management performance concerns of the different actors in the Scheme may be divided into six main parts:

1. *The formulation of the general policy of the scheme and the main objectives.*
2. *Setting up of the work plans and programs that will achieve the main objectives and targets.*
3. *Approval of the work plans and programs by the Sudan Gezira Board.*
4. *Implementation of the work plans and programs after being approved by the SGB.*
5. *Supervision of the implementation of the work plans and programs.*
6. *Assessment of the results at the end of the business year.*

The cornerstone to the whole decision-making process is what the Sudan Gezira Board decides as general policy and objectives. This decision, once taken, is passed down to the executive administration to be translated into work plans, programs and targets. In doing this, all of the scheme administrations and their departments and units will be involved in setting up these plans and programs.

Each administration has a defined role to play in achieving the set objectives. The agricultural administration, for example, in order to grow the areas specified in the general policy of the scheme, need certain requirements to be met. The magnitude of these stipulations will be set by the specialized departments, Agricultural Groups and Agricultural Blocks. These include areas to be plowed, quantities of different inputs, seeds, herbicides insecticides, irrigation water, manpower and other services. These requirements, after being compiled and discussed at the Administrations and Joint Committee levels, will be passed on to the Finance Administration for translating the figures into physical quantities and cash.

The Finance Administration will furnish the needed inputs in the quantities demanded and at the time needed. The Engineering Administration will also get its agricultural machinery on time, well-maintained, and start preparing the land for the different crops and finish this job in good time before the beginning of the following operation. The Administrative Affairs Administration will make sure that each Block, or Group has its needs for manpower met. However, in performing all these activities, and in taking the appropriate decisions, one very important element is always kept in mind, that is the time factor. These management decisions should be taken at the proper time so that each administration concerned can react to what is required.

The approved plans and programs will be implemented by the units concerned, which know what to do. The work plans and programs are tightly scheduled and any delay at any stage of implementation will interrupt the smoothness of the overall implementation and may require some further management decisions.

Parallel to the operations performed by the Gezira administration, other complementary work is also performed by the irrigation operations directorates which belong to the Ministry of Irrigation. The role of the irrigation operations directorate is equally important. Irrigation water, being the limiting input in the Gezira Scheme, has to be provided in the quantities and times desired. To do this, a similar decision-making process is made. At the field level, water indents are ordered by the Field Inspector and passed to the Block Inspector, who consult with the canal ghaffir (gate operators) to make sure that the water indents correspond with the needs in time and place. Water indents may be changed daily during the rainy season and weekly at other times. Water indents are accepted mid-week. The irrigation operations directorate will provide the water as required up to the minor canal. From there, the Field Inspectors and tenants take over and distribute it into Abu xx and to the fields.

In addition to the units of the Gezira Scheme and Ministry of Irrigation, there are other important bodies involved in the decision-making process concerning the Gezira Scheme. These bodies include the Agricultural Research Corporation, the Ministry of Agriculture, the Gezira Scheme Tenants Union and their units such as the cotton variety committee, the field coordinating teams and the Joint Committee.

The Joint Committee is second to the Sudan Gezira Board as a farm management decision-making body and includes the Agricultural Manager, the executive office of the Gezira Tenants Union and representatives from Finance Administration, employees and workers unions. The task of the Joint Committee is to review the agricultural plans and programs before they are presented to the SGB, approve the rates of the agricultural operations, the rates and dates of the agricultural financial advances, and the policies of the labor recruitment in addition to all of the other issues concerning the tenants. The

task of the Ministry of Agriculture and the Agricultural Research Corporation is mainly concerned with how much to produce and how to produce, including new production input packages, sowing dates and other operations recommendations.

Another important body, in the decision-making process, is the group production councils, which include the Group Inspector, representative of the Gezira Scheme Tenants Union, and representatives from the Blocks production councils. It helps the Group Inspector in the general supervision of the production operations and assists in solving any complaints raised by the individual tenants. The next is the Block production councils. They represent members from the village councils and the Gezira Scheme Tenants Union.

The last is the village production council, which represents the broad base of tenants participation in the decision-making process. They cooperate with the field inspectors in all aspects concerning the tenants. They are elected by free ballot.

The decision-making process in the Gezira Scheme is not simple and involves a large number of different degree of responsibilities. Starting with the highest position, there are:

1. Council of Ministers.
2. Minister of Agriculture and Minister of Finance.
3. The Sudan Gezira Board.
4. Three SGB specialized committees, Financial, Agricultural and Administrative Committees.
5. The Managing Director, they Deputy Managing Director and the Managers of the four Administrations.
6. The three Deputy Agricultural Managers, one at the Headquarters and two at the Agricultural regions (Gezira and Managil).
7. The managers of the departments of the engineering administration, the maintenance and workshops, the civil engineering, the mechanical engineering, the electrical engineering, the agricultural engineering and the telecommunication departments.
8. The managers of the ginneries and the Gezira railways.
9. The financial controller, the head of accounts and the managers of the supplies and stores, departments and their deputies.
10. The manger of the Socioeconomic Research Unit and his deputy and staff.
11. The managers of the specialized departments of the Agricultural Administration : crop protection, field affairs, animal production, extension and tenants affairs, seed propagation, horticulture, along with the services and the budget departments.

12. The Social Service Officer.
13. The Group Inspectors.
14. The Block Inspectors.
15. Members of the Joint Committee, the group production councils, the Block production councils and the village councils.
16. The Agricultural Research Corporation professional staff.
17. The organs of the Ministry of Agriculture.
18. The Irrigation Operation general directorate.

## **1.6 SUPPORTIVE ORGANIZATION INCENTIVES**

The Gezira Scheme is a public corporation. As such, it is affected by the general terms of employment and government policies issued by the Ministry of Finance and Bureau of the Civil Service. It operates according to an approved annual budget. In this budget, the scheme annually submits proposals for overtime and bonus payments. The employees' terms of service and conditions (1986) furnish good intentions towards its employees. Item 3 of section 87 of the statute states the nature of these incentives.

The principle of incentives paid to the manpower with the intention to promote production is controversial. One view is that each person should be given a financial incentive at a certain rate for a particular job without any additional productive contribution being made. The proponents of this view want to avoid possible resentment in case of any fall in the incentives provided.

Another view is that incentives are like catalysts, and when adopted, result in more production. In this regard, numerous incentive schemes exist ranging from simple bonuses to profit sharing. One of these incentive schemes relates to planting operations. This may be applicable to certain operations, like land preparation, harvesting, hauling of crops and transportation, etc.

The quality of work is important and so is the care of the instruments used. Yet, this scheme produces fluctuations in monthly incomes and involves careful record keeping and supervision for quality control. In the Gezira Scheme, there are not yet any supportive incentives for the staff who participate in the achieving management objectives on a large group basis except on a very limited extent and only for those who participate in wheat production.

In fact, the Minister of Finance and National Planning has lately banned any incentive payments. In the past, these payments were given to workers in certain service units, like the ginneries and the Gezira railways. These incentives were meant to encourage these workers to finish their work before the rains.

But, as these incentives are not provided to other employees, such as field inspectors who supervise the production process, they do not feel that their efforts are appreciated, either by the administration

or by the tenants. On the contrary, some tenants think that the post of field inspector is redundant. This is due to ignorance about the role of the field inspector in increasing productivity.

The present Managing Director (1991) is of an opinion that conditional incentives may work satisfactorily in the Gezira Scheme. If all inspectors are assured of getting a progressive share of incentives in increasing the productivity of cotton or wheat over a certain historical average, they will make extra efforts to achieve higher yields. Anyway, this proposal deserves to be studied and discussed at all decision-making levels.

## **1.7 HOW RAPID APPRAISAL COULD EFFECTIVELY BE CONVEYED TO MANAGEMENT AND INCORPORATED INTO THE MANAGEMENT DECISION-MAKING PROCESS**

The management decision-making process in the Gezira Scheme is quite extensive and passes through a chain of the scheme, institutions and several stages of actions. Some of these decisions need to be taken before the beginning of the cropping season, others during the cropping season, with the remaining at the harvest and even post-harvest of seasons the different crops. The type of information needed for each decision-making is quite different. Some decisions need time series data, while other need current data. Some farm management decisions may wait for some time, but others have to be taken immediately.

It is, therefore, difficult to prescribe what each unit should do. On the contrary, each unit should demonstrate its capabilities regarding the kinds of goods it can deliver. Just to help them to do so, the following is suggested:

- 1. There is need for several organized workshops to train decision-makers on how to use the Rapid Rural Appraisal (RRA) in management decisions.*
- 2. Each administration should list the kinds of decisions it usually takes, classify them chronologically according to the type of information needed, and the turnaround time between the need for the information and the time for taking the decision.*
- 3. Some decisions need inputs provided by external bodies (e.g. Ministry of Agriculture, Finance, Irrigation, Bank of Sudan, Cotton Sales Corporation, etc.) In this case it should be clearly specified what sort of inputs are needed and what is the shortest time required for such inputs.*
- 4. The scheme should have a data bank with a central computer services and terminals located where such data are mostly used in the decision-making processes. A list of the information needed at regular time periods for the people concerned.*
- 5. Rapid Rural Appraisal staff should be trained on how to use the system effectively.*

Means of supplying Rapid Rural Appraisal Information should be specified. Currently, the scheme has the best communication system. A few additions may be to provide helicopter services to the

Chairman of the Sudan Gezira Board and the Managing Director because the scheme is vast and during the rainy season is not easily accessible in addition to the fact that certain problems need to be solved at the site. The accessibility of the Managing Director to all parts of the Gezira Scheme at any time will make the staff at the field level continuously alert, especially if the incentive systems are being finally adopted.