THE UNIVERSITY OF HULL

THE ROLE OF ACCOUNTING IN PROJECT APPRAISAL AND CONTROL IN A DEVELOPING NATION - THE EXAMPLE OF THE IRAQI AGRICULTURAL SECTOR

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by

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TO MY SON AND DAUGHTERS

AHMED, DOWSER & NAMIRK

FOR THEM WAS MY STRUGGLE

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ABSTRACT

The primary objective of this thesis is to assess the role of accounting in the economic development process of Iraq. The study highlights the crucial role of accounting information and techniques in the planning, decision-making, and control of economic activities at both micro and macro levels.

A secondary objective is to affirm the importance of accounting and economic data in project appraisal and control. An attempt is made to reappraise two public agricultural projects which have already been evaluated by Iraqi planners and executed by two different foreign companies. The study also examines the projects' implementation and operating stages in an attempt to identify any failures in performance.

The thesis can be divided into three parts. The first discusses the role of accounting in the economic development process.

The second part gives a broad outline of accounting practice in Iraq and its impact on planning, control, and decision-making at both the micro and macro levels with particular reference to methods of project selection, appraisal, implementation, and control. The agricultural sector has been chosen for this purpose.

The third part of the study is an empirical

investigation of the appraisal, implementation, and control processes of two agricultural projects, aiming to show that accounting information and techniques have a vital role to play in project appraisal and control, and in linking the objectives of an investment project to those of national economic development.

ABBREVIATIONS

A.E.C.	Arabian Economic Community
A.S.C.	Accounting Standards Committee
A.S.S.C.	Accounting Standards Steering Committee
C.A.P.M.	Capital Asset Pricing Model
C.B.A.	Cost-benefit Analysis
C.F.	Conversion Factor
C.I.F.	Cost, Insurance and Freight
D.	Donum (2500 Square Meters)
D.B.	Development Board
E.D.	Exposure Draft
E.E.C.	European Economic Community
E.P.B.	Economic Planning Board
G.A.L.	Government Accountancy Law
G.A.S.	Government Accounting System
G.D.P.	Gross Domestic Product
G.E.A.A.	General Establishment of Agricultural Administrations
H.M.S.O.	Her Majesty's Stationery Office
I.C.A.E.W.	Institute of Chartered Accountants in England and Wales
I.D.	Iraqi Dinar
I.R.R.	Internal Rate of Return
N.D.P.	National Development Plan
N.I.A.	National Income Accounting

N.N.I.	Noise and Number Index
N.P.V.	Net Present Value
P.B.	Planning Board
P.E.S.C.	Public Expenditure Survey Committee
P.P.B.S.	Planning Programming Budgeting System
R.C.C.	Revolutionary Command Council
R.R.R.	Required Rate of Return
S.A.S.	State Accounting System
S.C.	Steering Committee
S.C.O.	Central Statistical Office
S.E.R.	Shadow Exchange Rate
S.T.O.	State Trade Organisation
S.O.T.	State Organisation of Textiles
S.S.A.P.	Statement of Standard Accounting Practice
S.W.R.	Shadow Wage Rate
T.D.R.	Test Discount Rate
U.A.S.	Uniform Accounting System
U.N.	United Nations

CONTENTS

LIST OF TEXT TABLES

LIST OF APPENDICES TABLES

LIST OF FIGURE

CHAPTER ONE

INTRODUCTION

The acceleration of economic development involves many factors at both the macro and the micro level. At the macro level, sound planning and efficient management of the economy play a major role in enhancing the economic growth of a nation (1). Planning implies that a government has organised its decision-making processes so as to take account of all the economic effects of each of its acts, the total programme of actions being a coherent one designed to achieve as rapid a rate of economic growth as is consistent with other social goals. It is, therefore, believed that vigorous and efficient planning and implementation of economic development programmes are the keys to economic growth and thus to narrowing the gap between the developing and developed countries.

However, most developing countries suffer from lack of capital for investment, and/or failure to use the country's resources to the best advantage. This may derive from lack of control and monitoring in the country's investment programmes, and recent years have seen a realisation of the importance of accounting techniques as an economic device for facilitating

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(1) In defining economic development, Enthoven, A.J. (1973, PP. 137-44) argued that it comprises economic growth plus structural social and economic change. For countries to attain development, the need is not restricted to day-to-day operations, but extends to planning and control for future purposes.

planning and control in both macro and micro level activities. This insight has brought the disciplines of economics and accounting closer together, with the aim of accelerating economic development.

Enthoven, A.J. (1977,P.7) has clarified the essential role of accountancy at all levels of economic activity, pointing out that it can be conceived as a system for provision of information to facilitate managerial decision-making and economic planning and control. The data provided must show the costs and benefits generated by economic activities and resources and their impact on society. He argued that:

> "Accountancy as a measurement and reporting information system covers both micro and macro economic activities; it is composed of various subsystems which relate to the planning and control of economic events and conditions. Therefore, accountancy concerns itself not only with the enterprise, but also with government administration and national (economic) accounts; these three systems or branches of accountancy are closely related and to some extent interdependent. Accountancy then can be conceived and practised as the identification, selection and analysis, measurement, prediction, processing, evaluation and communication of information in the form of costs and benefits, both of a direct and indirect nature, to facilitate economically justified decisions regarding activities and resources."

In the light of the above argument, it can be said that accounting plays a leading role in supporting decision-makers, at all levels, in their endeavour to accelerate the economic development process. It has also

been argued that the role of accounting would be enhanced with the adoption of a uniform approach in order to assist the planning process at both levels and thus the economy as a whole, and help towards more efficient control through comparison between economic activities (see Alhashim, D. 1977, PP. 127-41 and Abdeen, A. 1975, P. 143). Therefore, it is advisable for a developing country to adopt an integrated and comprehensive accounting system to standardise the structure and specifications of its information system for decision-making, planning and control at both macro and micro levels. However, it should aim at a system appropriate to its own needs,in so far as social, political, economic, and cultural characteristics differ from one country to another (Briston, R.J. 1978,P.120).

Nevertheless, it would be wrong to assume that the need to adopt a uniform accounting system is the only major challenge facing developing countries. Inadequate accounting education of the primary users of the information generated, inadequacy of financial and management staff in business enterprises and government agencies, weak or non-existent monitoring and control processes, etc. may perhaps be considered equally important.

Therefore, it can be argued that accounting and economic development in developing nations are interdependent. Accounting information must be

economically meaningful and useful for cost-benefit analysis in order to assist the economic development of a nation. This may be attainable through the adoption of a uniform accounting system which can support the integration between microeconomics and macroeconomics and enhance their contribution to the economic development process.

Projects may be considered as the building blocks of any country's investment programme, and project appraisal may be seen as a cornerstone in the formulation of coherent economic programmes that comprise the framework for the country's economic development activities. Extensive data, past, present, and future, have to be used in appraising the feasibility of projects and their components. These data, required for the project's cost-benefit calculations (2), must be economically realistic, with a comprehensive standardised content, and should lead to better cost valuation, classifications, performance

(2) Enthoven, A. J. (1973,PP.177-8) argued that the use of standardised accounting data in project appraisal would tend to facilitate the evaluation of: 1. Labour inputs per production process. 2.Raw material requirements per ton of production. 3.Power, fuel, water, gas, etc. needs per scale of output. 4. Professional requirements in man-hour per unit of production. 5.Working capital needs per process. 6.Installation costs of equipment. 7.Transport requirements. 8.Capital investments (fixed assets) for a production process, taking into account alternative capital-labour combinations.

measurement, and comparison between projects (Enthoven, A.J. 1973,P.177).

Cost-benefit analysis (CBA) can, therefore, be seen not only as a technique for a project selection decision, but also for providing comprehensive and systematic evidence of the soundness of the project and its consistency with the economic development plan of the nation. CBA thus plays a vital role in the evaluation of plans and programmes at both micro and macro levels. At the micro level, it helps to identify the critical parameters of a project through the measurement and analysis of all the expected inputs and outputs of a proposed project in terms of costs and benefits to society. Its main purpose is to provide a framework within which all aspects of a project can be evaluated in a coordinated and systematic manner, showing whether or not society as a whole will be better off by undertaking it.

At the macro level,the aim of cost-benefit analysis is to guide resources into those projects which will yield the greatest net benefit to society. Nash,C., Pearce,D. and Stanley,J. (1975, PP.132-33) concluded that:

> "One of the difficulties the cost-benefit analysts have had to face in recent years is an apparent incompatibility of their work with growing demands for public participation in planning. Often, their work has been used to justify to the public decisions which already

have been taken, rather than to inform them on the consequences of alternative courses of action. If results are presented in the manner suggested here (3), however, there is hope that cost-benefit analysis may become a way of promoting informed public debate on the issues involved, rather than an entirely separate technical exercise of doubtful usefulness".

Accounting information and techniques provide essential keys not only for the planning of national resources, but also for control of their use. Erroneous information may lead to unwise project investment decisions.

Furthermore, budgeting, as an accounting control device, attempts to deduce and examine the costs and benefits of particular economic activities, programmes, and projects; and tries to assess how limited resources can be allocated among many competing claims (Enthoven, A.J. 1973 P.29). Accordingly, links can be established between planning, budgeting and cost-benefit analysis, incorporating them into a planning-programming-budgeting system (PPBS).

However, this study deals with the role of accounting in economic development as it applies to Iraq. Although one of the developing countries, Iraq can be distinguished from others in its potential for

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(3) They rightly believe that the application of cost-benefit analysis will be more useful if the results of the calculation are presented in a disaggregated format. Methods of valuation and their effects on society should be clearly stated in order to inform the decision-maker as to the desirability of the scheme.

growth, due to the availability of many natural resources which provide substantial revenue. Iraq has nationalised most business enterprises in its endeavour for a high degree of government intervention. Accordingly the country's economy has shifted in favour of the public sector, and economic planning is directed towards the rapid growth of this sector, and of agriculture in particular.

To achieve this goal, Iraq has adopted a uniform accounting system for business enterprises in order to provide the required data for successful planning and control of economic activities at both the micro and macro levels. This may be considered a positive step towards solving the problem of deficient and disorganised economic and financial data generated by the accounting systems adopted previously. These systems were based initially on the traditional U.S.A/U.K. accounting systems which do not satisfy the needs of a socialist economy such as Iraq.

Iraq's modern economic era dates from 1968,when the government attempted to adopt comprehensive planning to strengthen the national economy. They promoted the agricultural sector and tried to develop other sectors in order to achieve economic and social advancement. The agricultural sector is of special importance to the Iraqi economy, for it supplies the greatest proportion of exports (excluding oil) as well as raw materials for

domestic industry. The last decade has witnessed important developments in the agricultural sector. The government has introduced modern science and technology into agriculture, with a considerable impact on production. By instituting a system of state farms, they have aimed to change from a system of production based on exploitation to one which involves socialist relationships. This ideology has required changes in the system of project appraisal in this sector to accord with national objectives, which tend to give priority to social benefits, rather than to profitability.

Description of the Problem

Although Iraq has adopted a uniform accounting system to meet the needs of the socialist system, there are discrepancies between the objectives and the actual results in most investment programmes. This suggests that the role of control and monitoring in linking a project's objectives with those of the national economic development plan, are not well implemented.

In this research the general role of accounting in economic development will be discussed in the context of the agricultural sector. The present government recently affirmed its belief that "agriculture is everlasting oil" and that it may provide the foundation for the development of the other sectors in the Iraqi economy.

The state farms, as pioneer projects in this sector, will be selected as a case study for this purpose. Their feasibility studies, implementation, and control will be examined in accordance with the criteria of project management suitable for socialist economies such as Iraq. These criteria may be relevant not only to the projects discussed, but to any similar agricultural projects.

It can, however, be argued that not only are planning techniques closely related to the economic development process but monitoring and control of economic activities are equally important. Accordingly, diagnosis of the deficiencies of the projects under discussion may help in identifying the remedies which might enable the agricultural economy to surmount the obstacles in the way of its development. The research problem, therefore, is to assess the role of accounting in the decision-making, monitoring, and control processes in the agricultural sector and in the economic development of Iraq.

The Significance of the Research

It is a common misapprehension in developing countries, such as Iraq, that accounting is an entirely passive field devoted to the recording and disclosing of monetary transactions. This impression has originated

from the shortage of qualified accountants of sufficient expertise to use existing accounting knowledge, information, and techniques for the purpose of economic development. The significance of this research, therefore, is to highlight the crucial role of accounting information and techniques in the planning, decision-making, and control of economic activities at both micro and macro levels.

The Research Objectives

A main objective of this study is to highlight the role of accounting in the economic development process in Iraq.

A second objective of the research is to affirm the influence of accounting and economic data in project appraisal and evaluation in the Iraqi agricultural sector. It examines critically the methods used to appraise the economic feasibility of two state farms which were established in response to the Supreme authority's drive towards developing and supporting the agricultural sector as "everlasting oil".

The project performance for three agricultural seasons of the first Greenhouses Farm Project (the Bulgarian project), which realised considerable losses, is critically examined, identifying a number of deficiencies which affected its contribution to the

targets of the agricultural sector. Comparison between the planned objectives of the project and its actual results is found to be necessary to the diagnosis of these deficiencies and the identification of the appropriate remedies to save the project from collapse.

The second Greenhouses Farm Project (the Italian project) which covers an even greater area than the first one, was taken as a second case study. A detailed examination is made of its feasibility study, which considered the costs and benefits which would be derived from the project in the event of its establishment either as an independent project, or as an extension to the main (Bulgarian) project.

The performance of the project for two season is critically examined in order to discover the reasons for its losses. Comparison between the planned objectives and the actual results is provided in order to highlight the deficiencies and to suggest how they can be tackled in order to bring the project into line with the economic development targets of the nation.

Limitation of the Research

To achieve the research objectives, information was gathered from British libraries regarding the role of accounting in economic development in both developed and developing countries. A great deal of literature on the British accounting system and international accounting

systems is available, but literature on the Iraqi accounting system is less copious. Most of the information about the Iraqi accounting system, auditing, planning, control, and business environment has been collected by interviews with top management and experts in the planning organisations, the Board of Supreme Audit, Central Bureau of Statistics and financial and agricultural offices. A considerable amount of unpublished Arabic material was also obtained from these offices, concerning the effects of the recent changes in the structure of the economy and accounting in Iraq.

A comprehensive field study was made of the state farm projects through two personal visits. Data as to their appraisals, implementation, and control practices have been collected from actual records as well as from interviews with the project's officials. These data have been summarised, translated, tabulated, examined, and analysed in order to propose a strategy for improving the projects, thus assisting economic development.

Scope of the Research

The research is presented in ten chapters. Chapter one deals with the general framework of the study, its objectives and purposes. Chapter two deals with the evolution of traditional accounting with reference to enterprise accounting, management accounting, government

accounting, and social accounting with a focus on the role of accounting techniques and practices in the U.K. This chapter emphasises the necessity of integration between these four branches of accounting and affirms the importance of integration between micro and macro accounting for planning, control, and decision-making.

In chapter three, discussion centres on the significance of accounting information for planning, control and decision-making. Some light is thrown on the accounting-economics relationship and investment appraisal in both private and public sectors is discussed. The appraisal of the "Third London Airport" is taken as a case study in this chapter.

Chapter four draws heavily on the importance of cost-benefit analysis to economic development. It also emphasises the role of accounting in economic analysis and the vital need for integration between these two disciplines. It also focuses attention on the advantages of a uniform accounting system for accelerating economic development.

Chapter five deals with the evolution and development of accounting, auditing, and planning systems in Iraq. The nature of the Iraqi uniform accounting and auditing systems with their contribution to planning and control of economic development activities is also examined.

Chapter six describes the planning and control processes in the agricultural sector in Iraq. The evolution of this sector and its contribution to economic development are discussed with special reference to the control processes for implementation of development plans in this sector. The aim of this chapter is to shed some light on planning and control devices in the agricultural sector and to highlight deficiencies at the micro level.

Chapters seven and eight deal with the appraisal of two state farm projects. The first one was established and partly managed by a Bulgarian company, the other by an Italian company. Their feasibility studies, implementation, and operating performance are examined and critically appraised in the light of various criteria of agricultural project appraisal. These two chapters offer some suggestions concerning project appraisal for the Iraqi public sector, and suggest some criteria for appraising projects which are not explicit in the feasibility studies themselves. Drawing upon these case studies, accounting -economic data and techniques are found to be of central importance in the diagnosis and remedy of the projects' deficiencies.

The analysis and conclusions drawn from the case studies are presented in the ninth chapter, which focuses on both macro and micro level activities in Iraq with

special emphasis on the Greenhouses Farm Projects which were chosen as case studies for this research. Chapter ten gives the general outline of the thesis and conclusions, stressing its originality, the investigation and research stages, pointing out the deficiencies which hamper the acceleration of economic development of the agricultural sector, and suggesting possible remedies for these defects.

CHAPTER TWO

EVOLUTION OF TRADITIONAL ACCOUNTING WITH SPECIAL REFERENCE TO THE U.K. ACCOUNTING SYSTEM

2.1 Introduction

Accounting thought has developed over a period of time so that in recent years it has come to cover every area of economic activity. Enterprise accounting (which encompasses financial accounting, management accounting, and auditing), government accounting, and social accounting are closely related and to some extent interdependent. The first two are referred to as micro accounting,while the third is referred to as macro accounting. Although micro and macro accounting work with the same raw economic materials, they remain as two distinct areas because most traditional accountants at the micro level have no concern with macro accounting and have little awareness of its requirements.

However, this chapter deals with the evolution and the current practice of financial accounting, management accounting, government accounting, and social accounting with special reference to the U.K. accounting system. The need for integration between these branches of accounting is of considerable significance to the process of the economic development, a situation which highlights the necessity of uniformity in accounting. This will be the subject of discussion in the concluding section of this chapter.

2.2 Financial Accounting:

2.2.1 Evolution of Accounting Thought

Traditional accounting thought developed slowly over a period of centuries. Evidence has been found of financial transactions and accounting thought dating back to 3500 B.C. in Assyria (the land between two rivers - now Iraq) and the Babylonian empire of Hammurabi, four thousand years ago (2123-2081 B.C.), used a rudimentary form of book-keeping in cuneiform writing on clay tablets. A further development in accounting thought took place in Imperial Rome (700 B.C. - 400 A.D.). A monetary system and stewardship function were developed during this period, and some accounting historians even believe that the Romans used the double-entry system in its bilateral form, though unfortunately there is no conclusive evidence to support this.

However, there is firm evidence that the development and integration of the double-entry system took place during the fourteenth century in Italy. The merchants of Venice (e.g. Donald Soranzo and Brothers) used the double-entry system in their trading accounts during the first quarter of the fifteenth century. Moreover, there are those,like Most, K.S. (1982 p.34), who believe that the first professional organisation of accountants was established in Venice in 1581. Thereafter, the method spread throughout the world,

and in particular, to Britain.

Prior to the Industrial Revolution, accounting development made slow headway in Britain. The prevailing practice emphasised the accountability of stewards and agents. This was commonly known as the "charge and discharge system", and was concerned with balancing of the sums received and spent by the steward (Freear, J. 1977 p.3). The accounting records were kept for the purpose of controlling the monetary stream rather than to indicate changes in net wealth. There was no distinction in recording the accounts between capital and revenue expenditures. This meant, as Freear put it "the cost of the horse being recorded in much the same way as the cost of the hay it consumed". The accounts, however, were subject to audit by the owner of the business himself or his representative.

A further development in accounting functions at that period may have come about as a result of the joining together of stewards into business partnerships, a situation which necessitated the recording of any transaction affecting the relationship between partners in a way which was satisfactory to all of them. For the purpose of control and accuracy checks, the use of the double-entry book-keeping system could meet the requirements of business, management, and partners. Some writers hold the view that this system was essential to the flowering of the spirit of capitalism,

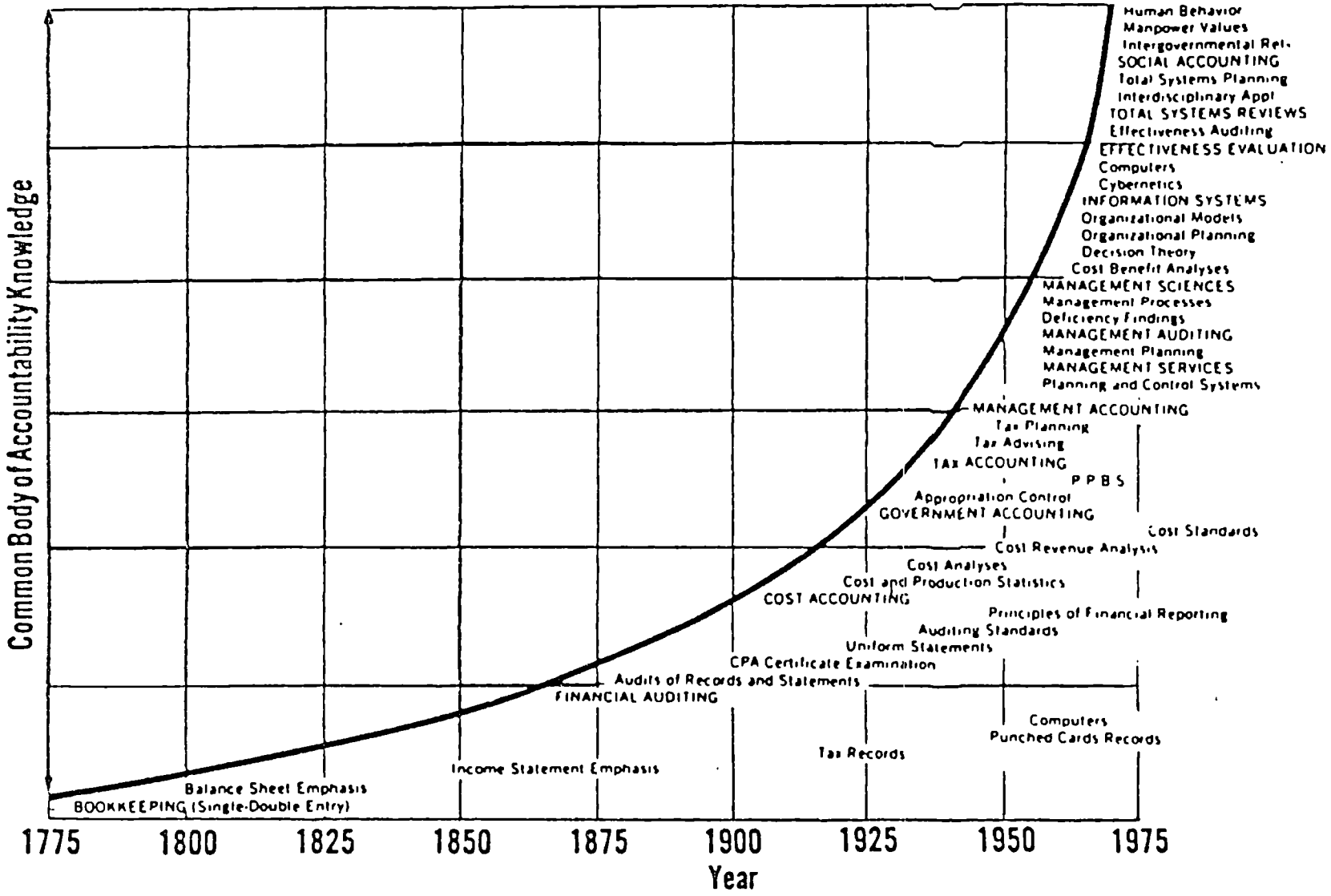
while others, Yamey,B. S. in particular (1964, pp. 117-36) have refuted this argument.

However, the Industrial Revolution had a great influence on accounting development in the U.K. The extensive growth of firms, their capital requirements and mass production techniques necessitated the development of the accounting function to provide reliable information to users.

Accordingly, it can be said that this progress in accounting knowledge and techniques made possible a rapid growth of business enterprises, forming the back-bone of their development and thus, the economic development of the nation. Accounting functions have increased gradually during the past two hundred years, and in recent years have addressed themselves towards more social needs. Figure 2.1 shows the development in accounting knowledge during the period 1775-1975, depicting how far accounting has moved from simple book-keeping to the more advanced social accounting of recent years. Within this period, the number of businesses in Britain increased from a few hundreds to hundreds of thousands and, therefore, the need for meaningful accounts to be rendered by the promoters and managers to the shareholders and other users greatly increased the need for companies' legislation.

Figure 2.1

Growth of Accountability Knowledge 1775-1975



Source: Most, K.S. 1982, P.5

2.2.2 Evolution of Companies Acts

The biggest single users of corporate capital during the nineteenth century were Joint Stock companies, which, by an Act of 1844, were required to prepare full and fair balance sheets which had to be presented to each ordinary meeting of shareholders. These balance sheets were to be audited by one or more shareholders who had wide powers of inspection and inquiry and who could employ "accountants" as assistants (Freear, J. 1977, p.12). The main reason for auditing the balance sheet was to check the solvency of the company and the honesty of its managers. Its contents were not specified and there was no mention of a profit and loss account.

There followed the 1844 Joint Stock Banking Act which provided for the publication for shareholders of banks of an annual balance sheet, profit and loss account and for an annual audit,and required the keeping of full and true accounts.

The Joint Stock Companies Act in 1855 introduced general registration with limited liability. The Act of 1856, which replaced the 1844 and 1855 Acts, stressed the standard form of balance sheet, analysing the capital, liabilities and assets.

The 1862 Act provided for compulsory financial statements on an annual basis, while the 1867 Railways Companies Act required the auditing of all railway

companies and the 1879 Companies Act required auditing for all banking companies with limited liability. These Acts were followed by the 1900 Act which imposed the annual compulsory audit, while the 1907 Act required all companies to file an audited balance sheet with the Companies' Registrar. The 1908 Act brought no important changes, but it specified the form and contents of the balance sheet.

For the first time, the 1929 Companies Act required all public companies to present a profit and loss account though it did not specify its form or contents.

As a result of the great demand for accounting information from outsiders, the 1948 Companies Act required every company to produce an audited profit and loss account and balance sheet. It also required companies to distinguish between "reserves" and "provisions" and the term "true and fair view" was also introduced.

The 1967 Act required the inclusion of turn-over in the profit and loss account, while the 1976 Act required the disclosure of directors' interests and tightened the requirements for maintenance of accounting records. The 1980 Companies Act required more disclosure, especially in the case of substantial contracts with managers and loans.

The 1981 Act made a number of important changes to

presentation and disclosure in accounts as well as in the accounting principles underlying them. It required uniform layouts of balance sheets and profit and loss accounts, extended the contents of the director's report, and imposed valuation rules. Later on, the 1985 Act was enacted to consolidate the Companies Acts without any considerable changes in the content of the legislation.

Generally speaking, it can be said that the Companies Acts imposed a legal requirement for information to be included as part of the accounts and hence subject to audit. Many arguments arise from the way in which these Acts are constructed:

First: Companies are required to present accounts which give a "true and fair view". The Acts neither define these terms nor make reference to any statement of standard accounting practice or generally accepted accounting principles (Nobes, C. W. and Parker, R. H. 1981, p.44). Although the Institute of Chartered Accountants in England and Wales stated in one of its recommendations in 1958 that "a true and fair view" implies the consistent application of generally accepted principles (Underdown, B. and Taylor, P. J. 1985, p.29), it is of considerable importance to define what is a true statement, and to whom it should be fair.

Second: The Acts require disclosure of companies' accounting events but they omitted the differences in accounting methods used between companies, a situation which leads to differences in the result of their financial reports. It was perhaps intended that this problem be tackled by the accounting profession, but unfortunately this has not yet been satisfactorily achieved.

Third: The most important area which has been overlooked by the Companies Acts is legislation concerning the link between micro and macro accounting.

2.2.3 Professional Accounting Bodies in the U.K.

The accountancy profession is greatly influenced by professional accounting bodies which have dominated this field in the U.K. There are six major professional accounting bodies which have played a great role in accounting practice. The first one was founded in 1854 in Scotland under the name of the Society of Accountants in Edinburgh. In 1855, the Institute of Accountants and Actuaries was founded in Glasgow (a similar organisation was established in Aberdeen in 1867). The members of these organisations were the first to call themselves "Chartered Accountants" (Zeff, A. S., 1972, p1.).

In 1880, the largest professional accounting body was established as the Institute of Chartered Accountants in England and Wales (ICAEW). Fifteen years later, in 1895, the Chartered Institute of Public Finance and Accountancy was founded. In 1919 the Institute of Cost and Works Accountants was founded to deal with the cost accounting domain.

Concerning the issue of accounting principles, the ICAEW established in 1942 the Taxation and Financial Relations Committee (whose name changed in 1949 to Taxation and Research Committee) in order to prepare draft pronouncements on accounting principles. In the same year, 1942, it issued its first two recommendations on accounting principles. These recommendations concerned Tax Reserve certificates and War Damage contributions. During the period from 1942 to 1969, the ICAEW issued 29 recommendations on accounting principles (Zeff, A.S., 1972, p.2).

In 1970 the ICAEW formed the Accounting Standards Steering Committee (ASSC) which comprised eleven members originally from the ICAEW, the Scottish Institute, the Irish Institute, the Association of Certified Accountants, and the Institute of Cost and Management Accountants. The name of the ASSC. was changed in 1976 to the Accounting Standards Committee (ASC) which was composed of 23 members. Their tasks are to approve Statements of Standard Accounting Practice (SSAP) and to

issue Exposure Drafts (ED). The whole theme of ED's and SSAP's is the establishment of standards for external financial reporting only. They have not been related to the economic and social needs of the U.K. and, therefore, they ignore data needs for decision-making in macro economic policy. As a consequence, the role of the accountants seems very narrow, associated with the business world as servants of the capitalistic enterprise. The general orientation of accountants in the U.K. was towards external financial reporting and auditing only. Boland, (1982, p.124) rightly depicted the present-day accountant in the U.K. as being engulfed by the external auditor.

2.2.3.1. Auditing Function in the U.K.

It has been mentioned that the auditing function in the U.K. is supported by the Companies Acts. The first legal form of the auditing function was set out by the companies Act of 1844 which require a "full and fair" balance sheet to be prepared and presented to each ordinary meeting of shareholders. Auditors were to be appointed and to report on the balance sheet. The Act did not require that these auditors be professional accountants. The 1879 Companies Act introduced compulsory annual audits for all banking companies registered thereafter with limited liability. Auditors were required to report whether the balance sheet was

"full and fair" (Nobes, C. W. and Parker, R. H. 1981). The introduction of compulsory external audit for all registered companies was brought about by the Companies Act of 1900. The 1948 Companies Act, which introduced many new disclosure requirements, required auditors to report whether accounts were "true and fair" rather than "true and correct" and also required auditors to have a professional qualification. The 1985 Companies Act was enacted to consolidate the preceding Companies Acts without making any serious change in existing law.

As far as auditing is concerned, it is worth mentioning that Companies Acts require that the external auditor be appointed, and his fees subsequently determined, by the directors of the company on whose performance he is giving judgement, a situation which threatens the independence of the auditor. It is also doubtful whether the benefits to the shareholders and management have been commensurate with the costs incurred, which were estimated to be around 500 million pounds in 1978 (Briston, R. J., 1978, p.107; Fanning, D., 1978, p.48). These very high rewards have enhanced the position of the professional bodies and allowed them to influence legislation, a situation which has led to the prevention of outside intervention to reform accounting practices.

An example of inadequate performance by external

auditors in the U.K. is the Court Line collapse. The auditors showed in their report for the year ending 30th September 1973 (published on 12th March, 1974) that the accounts and the profits of the Court Line were true and fair, while in fact there were many abuses in the company accounts. Briston, R. J. (26th, August, 1980) summarised the deficiencies in the overall audit process of the Court Line case as follows:

> "First, the system of self-regulation on the basis of the Court Line and other recent cases is quite inadequate . Secondly, most of the audit failures of recent years have been due to the misleading presentation of information in the accounts rather than to the failure of auditors to unearth information. The failure of auditors to insist on a true and fair view in the full accepted meaning of the phrase is probably due to their lack of independence from top management and is likely to persist until auditors are appointed and paid by shareholders without the involvement of management. Finally, because the chairman's statement can so easily present an untrue and an unfair view the auditors' responsibility should be extended to ensure that the statement is fair and reasonable in the light of the information available at the time the statement is made".

It can be argued therefore, that the main fault of the auditors was their failure to question whether or not the profit figure was true. This figure, which was shown in the company accounts as 4.7 million pounds before tax, included a 1.2 million pounds receipt for the cancellation of a shipbuilding order and many other extraordinary items which should have be excluded from

normal profits. The auditors stated in their report at the end of the year that both the profit and loss account and balance sheet presented a true and fair view (Hilton,A.22nd,March,1974). The report of the Department of Trade Inspectors, which investigated the Company's collapse, was highly critical of the annual financial statements of the company, concluding that they did not present a true and fair view. The inspectors did not blame the external auditors, holding that the crux of the problem was the lack of definition of "true and fair view" (Lee, T., 1982, p.126).

It is reasonable to argue that the existence of the professional bodies in the U.K. may be considered as a burden on the society as a whole, in that it bears their high cost, and suffers from time to time from distortion, abuses, and delay in performance. When the internal auditing and control system of a company is accurate and satisfactory, then there is no need to duplicate the auditing process by appointing an external auditor who may provide less accounting information with greater delay. Reliable and satisfactory internal control could provide accurate and dependable accounting data and more truthful and fair accounting information to the company's management and outside users.

Alvarez, A. P. (1973, p.17) argued that:

> "Internal auditing is an independent appraisal activity within an organization for

> the review of accounting, financial and other operations as a basis for service to management. It is managerial control which functions by measuring and evaluating the effectiveness of other controls. The overall objective of internal auditing is to assist all members of management in the effective discharge of their responsibilities by furnishing them with objective analyses, appraisals, recommendations and pertinent comments concerning the activities reviewed. The internal auditor, therefore, should be concerned with any phase of business activity wherein he can be of service to management".

It might be concluded, then, that internal auditing can adapt itself to appraise management activities through the auditing and observation of the financial situation of a company. The internal auditor can easily point out deviations in both financial and managerial policies. He is able to test and report on the suitability of the periodic management and cost accounting provided to management and to analyse the variances which may occur between the budgeted costs and profits (or benefits) and actual performance.

The function of internal audit in an enterprise has developed from the routine checking of accounting entries to an audit of methods and organisation in all departments. To enable the internal auditor to act independently, the internal audit manager should be regarded as an offshoot of top management whose responsibilities are not influenced by the enterprise's management (Taylor, A. and Shearing, H. 1979, p.308). In fact in the UK system he should be accountable to the

board of directors, while in the Continental European System he would be accountable to the supervisory board.

In conclusion, it would be very wrong to say that the U.K./U.S.A. accounting system should necessarily be applied in developing countries. There may well be a conflict of interests between the professional accounting bodies and the information requirements for assessing company efficiency, and over-concentration on financial reporting and external auditing may not serve micro and macro level needs. It could be argued that the system pays insufficient attention to economic development and integration between the micro and macro levels. Hence, it would be unsuitable for developing countries, especially those applying a socialist economy, to adopt this system. Briston, R. J. (1986, p. 30) pointed out that the U.K./U.S.A. accounting system does not fit the needs of developing countries. He argued that:

> "However, that system suffers from two major defects. In the first place, it takes a very narrow view of accounting, emphasising as it does, financial reporting and external auditing to the virtual exclusion of public sector accounting, national accounting, internal auditing, and accounting for decision-making. In the second place, it evolved in the environment of a free market, capitalist society in which the stock exchange was seen as a major allocator of capital resources.This environment has barely persisted in the U.K.and certainly bears little relevance to that found in developing countries, where there tends to be more

government ownership and for less reliance upon a stock exchange".

In the light of the above argument, one can conclude that some of the developing countries which have adopted the U.K./U.S.A. accounting system face a real dilemma because it has not proved to be adaptable to their own society and economy. This situation has been realised by some of these countries in recent years, so their orientation has been toward more emphasis on projectional and analytical accounting data which reflects socio-economic relationships and attends the purposes of planning, control, and decision-making in both the micro and macro levels. These data may be provided when a uniform accounting system is applied.

2.3 Management Accounting:

2.3.1. Evolution of Management Accounting

At the outset of this section, it may be useful to highlight the interrelation between cost accounting and management accounting. The former seeks to define/quantify what has to be the absolute sacrifice of an output in order to achieve the ultimate goal and/or for making a host of decisions. Management accounting may be seen as a coherent set of concepts and techniques which are used by managers for planning, control and decision-making. A distinction between these two areas

was made by Horngren, C. T. (1975, pp.9-10) when he argued that:

> "In an exaggerated sense, the cost accountants main mission might have been depicted as the pursuit of absolute truth, where truth was defined in terms of getting as accurate or precise costs as possible .... (while in management accounting) the theme of 'different costs for different purposes' was stressed - a preoccupation with finding conditional truth".

The management accounting field is, therefore, considered as a branch of accounting which is designed to assist management rather than outsiders. It is the application of appropriate concepts and techniques to assist management in formulating a plan for economic objectives and in making rational decisions with a view to achieving these objectives. It involves consideration of ways in which cost data are accumulated. The vital ingredient of management accounting is, therefore, cost and the terms now tend to be used synonymously in most literature.

However, the naive thought of cost accounting may be traced to the twelfth century. The use of accounting data for management purposes, perhaps as a tool of management control, has been noted in some factories in Florence - Italy. Cost accounting developed with industrialisation and the factory system. The calculation of costs of products was found in England

during the fifteenth and sixteenth centuries, when a number of woollen manufacturers moved from the cities to country villages and established industrial communities outside the established guilds (Garner, S. P., 1948, p.385). The manufacturers realised that cost records could be of assistance in competition among themselves and with the guilds. A further development of cost accounting during the sixteenth century has been mentioned by Solomons, D. (1952, pp.53-71) who argued that an excellent example of the early development of a perpetual inventory system was used in Antwerp by a printer and publisher. A separate record was kept of job accounts for each book printed and stock accounts in value and quantity for each kind of paper used, and a plant ledger was used. However, from that time there was little development of cost accounting in Britain until the Industrial Revolution.

At the beginning of the Industrial Revolution in the eighteenth century there was an increasing awareness of the need for cost information to be appropriate to the needs of managers in order to cope with competition and to carry out the firm's objectives. The problems facing the business manager at that period were derived from the increase in the absolute size of the firms and from the necessity of influencing and controlling the diverse activities of employees, customers, investors, and others who constituted the organisation and its

environment. This situation led the evolution of new accounting concepts and techniques to deal with the new complex managerial problems, and as a consequence, these concepts and techniques brought about the development of the management accounting field.

Indeed the real impetus and development of management accounting came during the twentieth century. The integration of cost records into financial accounts made it possible to improve methods of calculating income, inventory valuation, overhead costs, and the development of depreciation concepts (Hendriksen, E. S. 1970, p.36). The Institute of Cost and Works Accountants was formed in 1919, its name changed to the Institute of Cost and Management Accountants in 1972 and its journal changed from Cost Accounting to Management Accounting in 1965 (Scapens, R. W. 1985, p.9).

It is necessary to shed some light on the current situation of management accounting practice in the U.k. and the next chapter will investigate the importance of management accounting concepts, methods, and techniques for planning, control, and decision-making in both the private and public sectors.

2.3.2 Current Practice

Recent writers (Scapens,1981 & Shillinglaw, 1980) have referred to the great amount of literature and

textbooks published in the 1950's and 1960's to demonstrate various aspects and techniques of management accounting. The emphasis was on the necessity for the application of cost-volume-profit analysis, standard costing, uncertainty, variance analysis, and mathematical and statistical models. From the early 1970's onwards, accounting researchers began to emphasise linear programming techniques, statistical decision theory, cost variance investigation models, cost-benefit analysis, social accounting and accounting in not-for-profit organisations, human aspects of budgets and standards, agency theory, and transfer pricing.

From the above recital, it may appear that management accounting theory has developed considerably within the past three decades. On the other hand, one may be disappointed to observe the actual practice in this field. Many studies have suggested that there is an alarming gulf between the theory of management accounting and actual practice in the U.K. This belief has been reinforced by many surveys of various organisations. Coates, Smith & Stacey (1983, pp. 265-82) investigated in their preliminary survey the disparity between management accounting theory and the management accountancy practices of many companies in nine sectors of industry. As a result of the survey, they concluded that there was no evidence of the application of more

"advanced" techniques of capital budgeting and appraisal, and in some instances it was apparent that there was no awareness of them. In addition, it was discovered that management did not even believe that transfer pricing had any material effect on the relevance of management reports and decision-making. It was clear that in some cases, many sound methods (such as Discounted Cash Flow, Formal Risk Analysis and Linear Programming) were specifically rejected. In addition it was found that 50% of the companies did not distinguish between controllable and non-controllable variances. As a consequence, they argued that there appeared to be a substantial discrepancy between the theory and practice of management accounting, which could be described as "traditional" , and there was no evidence that any progress had been made in wresting companies away from approaches which had been the subject of academic criticism for many years.

Another survey depicted the alarming gulf between theory and practice in the management accounting field. Scapens, Gamiel, and Cooper (1983, pp. 283-306) questioned 99 firms in the Manchester area concerning accounting information for pricing decisions in accordance with the studies of Hague (1971) and Sizer (1966). They concluded that traditional accounting data was normally provided for pricing decisions.

Conventional methods were used for inventory valuation; very few (5%) of the firms used marginal cost, whereas the majority allocated overhead cost among their products; and the depreciation method used for the fixed assets of most firms was based on historical cost. These results gave the surveyors the impression that management accounting practices in most U.K. firms suffered from a time-lag in employing the advanced techniques suggested by theorists. Argenti, J. (1976, pp.78-9) concurred with the above argument when he pointed out in his article "Whatever Happened To Management Techniques?" that "British Managers are lazy layabouts, they cannot understand anything that requires 'O' level English". He blamed firms' managers for omission of advanced management accounting techniques. Meanwhile, he criticised the theorist for being so far ahead as to be out of sight.

Finally, it can argued that it is right and proper for academics and theorists to be well ahead of the practicing manager in this field. The blame and criticism should be directed to the professional accounting bodies who are dominating accounting practice in all sectors. They need to pay more attention to the needs of managers for sound planning, control and decision-making purposes, rather than to continue applying nineteenth century concepts and techniques.

2.4 Government Accounting:

2.4.1 Evolution of Government Accounting

The development of the Royal Treasury, or Exchequer, in the U.K. can be traced back to the reign of Henry II in the twelfth century. The yearly charges against the sheriffs and other accounting officers of the Exchequer were entered, and the result of the final audit of their accounts was recorded. The Exchequer had two divisions, the Upper Exchequer and the Lower Exchequer. The former was a court of account in which the royal revenue was managed and the accounts of its collection and disposal audited. The Lower Exchequer was concerned only with the actual receipt and issue of money (Woolf, A. H. 1912, p.61). During the thirteenth century, in the reign of Edward I, the accounting records of the Royal Treasury were kept with more attention and care. In the fifteenth century, certain improvements in book-keeping accounts were manifest,such as the introduction of the "charge and discharge system"in recording financial transaction, a situation which led to the development of accounting function during that period.

With the dawn of the sixteenth century the "charge and discharge system" spread to Scotland, and the City of Edinburgh in particular. The City Treasurer's charges included rent and duties and he discharged authorised

disbursements for civic improvements and expenses. The treasurers' accounts were kept in Roman numerals until 1673 when Arabic numerals superseded them. Each page of these accounts was totalled and the sum recorded at the bottom of the page. It was not until 1720 that the page totals were carried forward and recorded on the next page (Green , W.L.1986, p.49). However, the rise of professional accountants in the private sector during the nineteenth century had a great influence on the development of government accounting in the U.K.

Today, a high degree of accountability exists in the field of Central Government, Local Authorities, and Nationalised Industries in order to plan and control government expenditure and revenue.

2.4.2 Accountancy in Central Government

The Central Government includes Parliament, government departments, and extra-departmental funds financed from government funds, by far the largest of which is the National Health Service (Barrett, D. 1981, p.25) and it has a legislative power for macro-economic control over local government's revenue and expenditure. The basic form of central government accounting is the straightforward cash appropriation account used under Treasury directions by all Government departments. Public expenditure control is one of the principal

elements of the Government's economic strategy.

In 1961, the Public Expenditure Survey Committee (PESC) was appointed to estimate traditional expenditure by means of five-year projections of the cost of existing policies (Wildavsky, A., 1964, p. 217). The planning exercise of the Central Government departments is co-ordinated by PESC, which is an interd departmental committee of officials and finance officers chaired by the Treasury. The procedures adopted for preparing the annual public expenditure estimates in the U.K. have been summarised by Jackson, P. (1981, p.19) as follows:

1. The Treasury issues instructions to each department, giving the basis and working assumptions on which the forecasts will be made.
2. On the basis of these instructions, the departments send their estimates of expenditure for the next five years.
3. The Treasury discusses the estimates with each department. During these discussions they agree the policies and statistical assumptions on which the estimates should be based. The figures in the estimates are then agreed, with the Treasury attempting to eliminate "padding" from the estimates. These discussions ensure that all departments are working to a similar set of

assumptions so that the overall plan fits together.

4. A draft report, on the basis of the departmental estimates,is drawn up by the Treasury and agreed by the PESC. This report usually contains a medium-term assessment of the estimates available for private consumption, investment, export and imports, along with which public expenditure competes.

5. This report is then submitted to Ministers who debate the public expenditure plans and then take decisions on the aggregate of public expenditure and its allocation to the various programmes. It is at this stage that Cabinet Ministers will be asked by the Financial Secretary to offer cuts in their department's spending programme so that the total of public expenditure conforms to the overall macro-economic strategy.

6. When the PESC report has been debated in Cabinet, the White Paper on Public Expenditure is published. Publication date used to be around November but in recent years it has been delayed until January or February. It is now published in March along with the Budget statement.

It has, however, been argued that the PESC has a grave weakness in that it has no real voice in policy

and resource allocation. Wildavsky, A. (1975 p.378) argued that the Treasury itself has mixed feelings about the value of PESC for its everyday work of expenditure control. Tomkins, C. (1980, p.10) confirmed this fact when he argued that:

> "Another weakness of PESC is its tendency to emphasise the continuation of future spending rather than act a brake on it when economic growth shows down.This has been a problem which has only arisen in recent years. Moreover,PESC,until 1976,involved no mechanism for financial control - that is comparing outturn with the budget with reasoned explanations. Nor did it control the amount of cash spent as distinct from a given volume of services. Nor,in earlier years, did it include any assessment of future resources".

The government's ability to control public spending depends, therefore, on the extent to which it can plan and control the available resources. The main problem is how to match prospective revenue and expenditure. This leads to a discussion of the budgetary process in the U.K.

2.4.2.1 Budgetary Process

The original "Budget" in England, as pointed out by Thomas, L. and Heath, K. B. (1927, p.39), was simply the speech of the Chancellor of the Exchequer in the House of Commons after the close of the financial year on March 31st. The estimates of income and expenditure for the year just beginning and any proposals, or changes in financial administration, which the Government

recommended for the approval of Parliament, would be discussed.

In recent years, the government budgets with their income and expenditure accounts have come to dominate the operations of the national economy, and it has become important to relate the government's income and expenditure to the total national income and expenditure. Government expenditure constitutes a significant part of total expenditure in the U.K. economy, e.g. 145,219 million Pounds in 1984 amounting to 52% of Gross Domestic Product (HMSO, the SCO Blue Book, 1985). Accordingly, the planning and control of government expenditure is a major necessity. Enthoven,A. J.(1973, p. 53) has distinguished three degrees of control in government accounting and budgeting. He argued that:

> "In government accounting and budgeting three degrees of control are often distinguished: economic control; efficiency control; and accountability control. The emphasis of each type of control is on a different phase of the budget. Economic control, aiming to see that total spending in the economy on both present and future needs does not exceed the resources available for those two purposes respectively, is concentrated mostly in the phase of budget preparation. Efficiency control, the aim of which is to ensure that funds are used in the most effective way in the implementation of policies already agreed upon, can be applied in both preparation and execution phases of the budget. Accountability control, in order that

> money set aside for a particular purpose is not spent for some other purpose and that there is no duplication by those responsible for the outlay, only begins with the virtual spending".

The above ideal argument may attract attention to the significance of the implementation of the Planning-Programming-Budgeting System (PPBS) in the government programmes, whereby planning and control represent complementary activities. PPBS can assess whether a nation as a whole will gain or lose in each major area of government activity. It measures the costs of programmes for many years to come and analyses their outputs in comparison to alternative activities. PPBS, therefore, incorporates cost-benefit analysis forms the important part. Costs and benefits are to be specified and measured, alternatives are to be compared, and the decision which promises the greatest net benefits to society would be taken. PPBS is thus an economic planning and control method for government activities, assisting managerial decision-making for economic development. It integrates planning, programming, and budgeting into a unified planning system and provides an interrelationship between income and expenditure through specified measurable objectives, including a definition and measurement of all the social costs and benefits of governmental activities. It may be said, therefore, that PPBS attempts to convert the

regular annual budgetary routine to an evaluation and formulation of government activities in the light of the economic objectives and policies pursued. It is applicable not only to the central government sector, but also in all other sectors, including the enterprise sector. In such a case, a great deal of uniform accounting information may be required to assist planning, control, and decision-making.

2.4.3 Accountancy in Local Authorities

According to the Local Government Act of 1933 (1), Local Authorities were defined as those local bodies which had the power to raise funds by certain forms of local taxation and were obligated to make annual expenditure. The Central Government has legislative power to control the Local Authorities' returns of income and expenditure (HMSO, 1968, p.306). The Department of the Environment publishes an annual report on these returns made by the Local Authorities. The local authority accounts are presented in similar categories for all authorities, which may be considered an important and valuable feature which assists monitoring and control of the local authorities accounts by facilitating comparisons between them.

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(1) In the Scotland the relevant Act is the Local Government Act of 1947, and in Northern Ireland the Local Government Order No.1898 (HMSO,1968,p.306).

Local authority accounts are divided into five sections (HMSO, the SCO Blue Book, 1985, P.62):

First, Current Receipts Accounts : These include grants from central government, rates, gross trading surplus, rent, dividends and interest, and imputed charges for consumption of non-trading capital.

Second, Current Expenditure Accounts: These contain financial consumption, subsidies, current grants to personal sector, and debt interest.

Third, Capital Receipts Accounts: These include current surplus, capital grant from central government, and miscellaneous receipts.

Fourth, Capital Expenditure Accounts: These include gross domestic fixed capital formation and capital grants to other sectors.

Fifth, Financial Accounts: These include transactions in financial assets and liabilities.

As far as the control of the local authority expenditure is concerned, many Acts have been published to strengthen central controls over local government. The 1980 Act, for example, requires each authority to produce an annual report of its activities and, in particular, to publish comparative costs of its main services (Rogers, M., 1984, p.32). In 1981 the Block Grant System was introduced to make expenditure targets

specific to individual authorities, with grant penalties imposed on individual authorities if they spent more than their target (Hepworth , N. 1984, PP.42- 3). This system also requires that at each financial year end a review should be undertaken of actual spending compared with budgeted spending, showing as far as possible how efficiently resources are being used. The Local Government Finance Act of 1982 further strengthened central control over local government when it raised questions about the efficiency and effectiveness of local government.

Nevertheless, more attention needs to be paid to the integration of accounting systems and accounting information needed by managers in the public authorities which comprise the two sectors, Central Government and local authorities. Unlike business enterprises, the decision-making process in public authorities may be influenced by social and economic constraints, a situation which would necessitate more sophisticated budgeting procedures, for both short and long term planning, such as those incorporated into the PPBS system. This is based upon cost-benefit analysis and requires an analysis of expenditure by objectives, which would then be rearranged in such a way as to be compatible with the planning objectives formulated by public authorities.

2.4.4 Accounting in Nationalised Industries

Nationalised industries occupy the largest field of public corporations in the U.K. and are responsible for about 40% of all fixed investment by industrial and commercial enterprises and employing one person in fourteen of country's labour force (Likierman, A. 1979, p.33). Nationalised Industries can be defined as public trading bodies which have a substantial degree of financial independence from the government. Thus they constitute a category somewhere between direct government trading undertakings and private enterprises and form a group of enterprises publicly owned and managed in the public interest, conducted on ordinary business lines (HMSO, 1968, p.237). They were established largely during the period of Labour Government, 1945-51. The Acts which govern them specify that the board of each industry will be responsible to the minister in the appropriate government department, which is called the sponsor department. These departments and their affiliated nationalised industries are shown as follows as at 1983 (Sherer, M. and Southworth, A. 1984, p.177).

Department of Energy:

British Gas.

British National Oil Corporation.

Electricity Industry.

National Coal Board.

Department of the Environment:

British Waterways.

British Telecom.

Department of Trade and Industry:

British Airways Board.

British Airports and Authority.

British Shipbuilders.

British Steel.

British Aerospace.

Civil Aviation Authority.

Rolls Royce.

National Girobank.

Trustee Savings Bank.

Post Office.

Department of Transport:

British Railways Board.

National Bus Company.

Scottish Office:

North of Scotland Hydro-Electricity Board.

Scottish Transport Group.

South of Scotland Electricity Board.

Under the present Conservative Government there has been a trend towards privatisation and some of the above industries such as British Gas, British Telecom, British

Airways, Rolls Royce, Trustee Savings Bank, and the National Bus Company have been sold to private investors. Furthermore, at the time of writing, other industries such as British Waterways, Airports, and Railways are possible candidates for future privatisation. The Government privatisation policy implies changes of the objectives of these industries which may not be the same as those of public enterprises, and may lead to the departure of these industries from those objectives for which they were originally nationalised. The situation in developing countries is somewhat different. In such countries, state enterprises are of particular importance in supporting social advancement and the acceleration of economic and social development. In this context, the planning, control, and decision-making processes of these enterprises would be of benefit to society as a whole rather than to shareholders.

Returning to the question of nationalised industries in Britain, the minister of each relevant department has specific powers to control and manage an industry. He appoints members of the board of management and approves their decisions. It is to him that the annual report and accounts should be addressed and he in turn will present them to Parliament. Furthermore, he has the right to appoint the external auditors who audit the industry's accounts while the

Comptroller and Auditor General has only partial access to their accounts and financial records. The sponsoring minister can also issue general directives which the board must follow. Nevertheless, the industries have a considerable degree of autonomy in financial appropriation, the planning of their budget, and the raising of funds (Remanadham, V. 1959, p.18). For the purposes of monitoring and control to fulfil the wider macro-economic objectives of the government, the nationalised industries have been asked to select a number of key performance indicators and to publish them prominently in their annual reports, supported by an explanation of their choice and an interpretation of significant trends (The 1978 White Paper). In other words, the government is anxious to ensure that the nationalised industries operate as efficiently as possible, a situation which has caused the nationalised industries to place more emphasis on socio-accounting information in order to assess managerial performance. Indeed, most nationalised industries are required by their statutes to operate in the public interest, so that both economic and accounting objectives have to be considered where managerial decision-making is concerned.

In practice, the annual reports which have been published by the nationalised industries show that, in

most cases, there are major omissions in compliance with the requirements of the White Paper. Glendinning, R. and Perks, R. (1981, p.23) drew attention to lack of compliance in a number of important respects. They argued that four industries (British Aerospace, British Shipbuilders, British Transport Docks Board and British National Oil Corporation) published no performance indicators at all in 1979. Very few provided an explanation of their choice of indicators while the majority ignored the recommendations of the White Paper. They also mentioned that seven industries complied with the requirement for a historic performance series by supplying figures for ten years or more while four included details for only two years.

The above discussion may indicate that there is a deficiency in the monitoring and control of these industries. Briston, R. J. (1986, p.16) suggested that state audit can play an effective role in bridging the gap between objectives and procedures, by auditing the efficiency of the nationalised industries. A change in their accounting system may be equally important to provide standardised accounting information which will facilitate monitoring and control. He argued that:

> "It is therefore argued that, whichever approach to efficiency is adopted, the method of evaluation should be a regular audit rather than an ad hoc study. It is also our contention that this should be the responsibility of the state auditor,

> in order to provide consistency and continuity in both objectives and procedures. If he is to perform these responsibilities satisfactorily he must be allowed to broaden his staff to include a range of skills, such as engineering, surveying, economics, etc., as well as accounting, and he will need to pay salaries which are competitive with those offered in the private sector. It will also be necessary to change the accounting system in order to provide data on a regular basis which is appropriate for efficiency auditing".

However, it is useful to stress that the nationalised industries have continued to apply the same accounting systems as before nationalisation. The sponsor department has the sole authority to determine the minimal contents of the published accounts and the accounting methods to be used. In these circumstances it may be unreasonable to expect the published accounts of nationalised industries to be truly comparable given their differing operating characteristics. However, uniformity in their accounting systems, and the intervention of state auditing may be important in assessing the performance indicators and, thus, the efficiency of the nationalised industries.

2.5 Social Accounting:

2.5.1 Evolution of Social Accounting

To avoid confusion it is worth mentioning that social accounting is also known as macro accounting,

socio-economic accounting, or national income accounting (NIA). It is concerned with the application of accounting methodology to macro economic analysis. It therefore deals with the aggregate formulation of capital accounts, production accounts, government accounts, household accounts, and rest of the world accounts. In the widest sense, it has been defined as the branch of accounting which is concerned with a measurement of the money value of goods and services becoming available to the nation from economic activities (HMSO, 1968, p.1). NIA can be regarded in three aspects: as a sum of income derived from economic activities, as a sum of the products of the various industries of the nation, or as a sum of expenditure (whether for consumption or investment).

In the U.K. the first official attempt to estimate the domestic product for the NIA was undertaken in 1907 by a number of economists who realised that the various estimates could be combined and related within an accounting framework (Stone and Stone, 1961, p.153).

At the beginning of the 1940's, the official estimates of the national income appeared in the Blue Book as a guide to the government agencies and Parliament to facilitate the formulation of economic policy. Double-entry book-keeping was the pillar in the preparation of the Blue Book accounts, a situation which

caused Hicks, J. R. (1960, p.185) to argue that the figures contained in the Blue Book cannot be fully understood until they are looked at from an accounting point of view. NIA is, indeed, very similar to enterprise accounting. The former shows the economic activities for the nation as a whole, while the latter shows the economic activities of the enterprise. The use of the double-entry method, therefore, helps to show the from-whom-to-whom basis and gives a clear and balanced picture at both micro and macro levels.

2.5.2 Current Practice

Many national income systems classify the economy into different sectors such as households, government, companies, and the rest of the world. Each of them contains many classes of accounts as follows (Briston, R. J. 1981, p.496):

1. Production Account: this is concerned with the payments and receipts associated with production activities.
2. Appropriation Account: this shows all current receipts and payments which do not arise out of production activities.
3. Capital Account: this shows transactions of a capital nature that affect the balance sheet of the transactor.

The NIA in the U.k. contains the following main accounts:

1. Households account: this concentrates on the transactions of all individual incomes, expenditures, and savings. The incomes includes wages and distributed profits, transfer payment from government and abroad. The other side of this account shows private consumption, taxes on income and saving by households. Table 2.1 shows the households account according to the Blue Book at the end of 1984.
2. Gross national product account: This shows the value of what the productive sector produces or the value of the national product. Final sales of goods and services are classified into consumers' expenditure, government current expenditure, gross domestic investment and exports, and property income from abroad. To estimate gross national expenditure, imports must be deducted from the sum of these items. Gross national income is classified into income from employment, taxes on expenditure net of subsidies, gross trading profits, rent, and net property income from abroad. An example of the use of this account is shown in Table 2.2 .
3. Government account: this is similar to the households account. It shows the current receipts

and expenditure of the governmental sector. The receipts side in Table 2.3 includes income taxes collected by the government, grants and interest received from abroad. The other side represents the current expenditure on goods and services, current grants to persons, and the debt interest to persons, while government saving is obtained from the differences between the current receipts and expenditure of the government account.

4. Capital account: this shows the aggregate saving in all sectors, such as, corporate saving, personal saving, and governmental saving. The debit side represents the gross domestic investment minus the net investment abroad as shown in Table 2.4.

5. The rest of the world account: this shows transactions with the other economies of the world. It includes the export income from abroad, less imports income paid abroad. The credit side of the account shows the net investment abroad. Table 2.5 gives an example of this account as it was shown in the Blue Book.

Table 2.1

Personal Income and Expenditure
(Households)

Income from Employment	180,342	Consumers' Expenditure	194,673
Income from self-employment	26,885	Deduction from Income	59,032
		Saving	25,851
Rent , Dividends & Interest	27,752		
Current transfers from government & others	44,577		
	279,556		279,556

Source: HMSO , the CSO Blue Book, 1985, p.5 .

Table 2.2

Gross National Product

Consumers' Expenditure	194,673	Income for Employment	180,342
Government Current Expenditure	96,148	Net property income from abroad	16,385
Gross domestic investment	55,319	Taxes on Expenditure	52,578
Exports	91,736	Gross Trading Profits	68,967
Less: Imports	(91,852)	Rent	27,752
	346,024		346,024

Source: Ibid. p.5 .

Table 2.3

Combined Public Authorities

(Government)

Taxes on income	46,635	Final consumption	69,655
Taxes on expenditure	52,578	Subsidies	7,797
National insurance	22,484	National insurance	21,184
Gross trading profits	(,250)	Current grants paid abroad	2,090
Rent, dividends & interest	10,383	Other current grants	21,184
Miscellaneous transfers	223	Debt interest	15,659
Imputed charge for consumption of non-trading capital	2,190	Saving	(3,661)
	134,243		134,243

Source: Ibid. p.11

Table 2.4

Combined Capital Account

(Capital)

Companies saving	7,874	Gross domestic investment	55,319
Personal saving	10,984		
Governmental saving	(12,293)	Net Investment abroad	(935)
Public corporations	(294)	Increase of book value of stocks	4,986
		Less:Depreciation	(37,936)
		Variances of stocks appreciation	(15,163)
	6,271		6,271

Source: Ibid. p. 15.

Table 2.5
International Transactions
(Rest of the World)

Net Investment Abroad	(935)	Exports of goods and services	91,736
		Less: Imports of goods and services	(91,852)
		Current transfers from abroad	(819)
	(935)		(935)

Source: Ibid. p. 105.

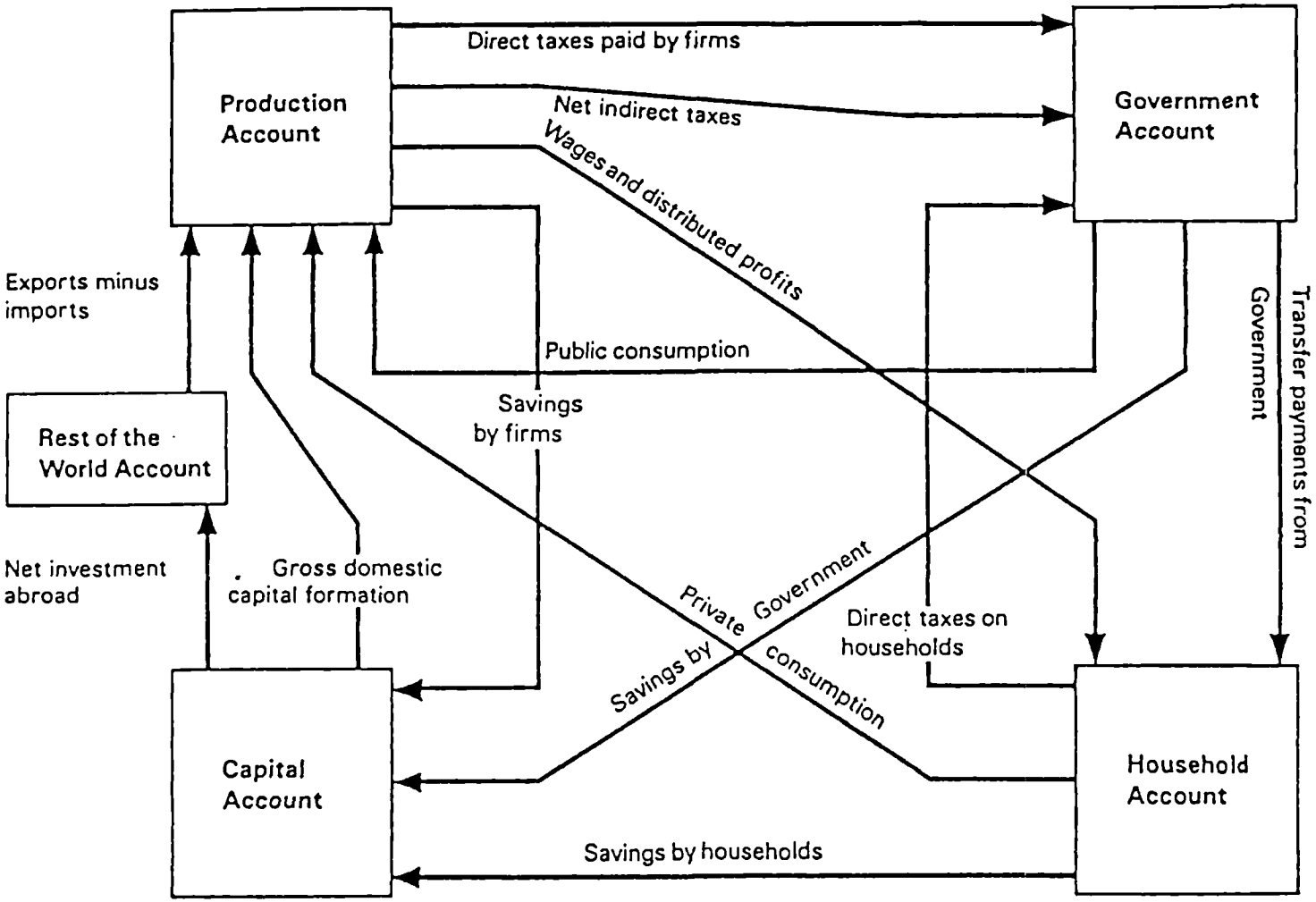
In general, three kinds of accounts are included within the framework of the NIA in the U.K. :-

1. Production account, which records the transaction involved in the production and supply of goods and services.
2. Consumption account for recording current income and expenditure.
3. Capital account for recording the use of savings.

It is apparent, therefore,that this branch of accounting is much preoccupied with the measurement of social or national income, the overall product of economic activity wherever it is performed within a society. The interrelationships between production account, governmental account, household account, capital account, and rest of the world account, as they appear in Figure (2.2), reveal the necessity for integration between enterprise accounting, government accounting, and social accounting, for planning, control, and decision-making purposes at both micro and macro levels.

Figure 2.2

Complete Flow Diagram of Accounting Framework



Source: Breakerman, W. 1968, P.109.

2.6 The Need of Integration Within the Framework of Accounting

It has been mentioned previously that enterprise accounting encompasses financial and management accounting. These two branches of accounting, together with government accounting are referred to as micro accounting, while socio accounting is referred to macro accounting. Micro and macro accounting tend to be closely interwoven and are intimately related due to the fact that micro accounting constitutes an important part of the data base for the macro accounting system of the nation. Mirghani, A. M. (1982, pp. 66-7) pointed out that micro accounting provides an effective data base for macro accounting if there is firstly, harmony between them regarding the basis of the accounting definitions and measurement bases of the input data necessary for obtaining information regarding certain economic constructs that would be needed for evaluating the country's economic performance or for monitoring the progress of a development plan. Secondly, if there is agreement between them regarding the classifications, qualitative characteristics, and degree of detail in micro accounting information for macro accounting purposes. Thirdly, if there is compatibility in planning and control by managements of micro units with the needs of the macro accounting system. Fourthly, if there is awareness by accountants at the micro level

that the accounting measurements they use could have a significant impact upon policy-making at the macro level.

The above conditions, in other words, emphasise the necessity of uniformity in accounting systems. Such uniformity is necessary, not only for monitoring and control of a nation's development plan, but also for national economic planning purposes. Berry, M.H. (1982, p.193) argued that the practices of the traditional accounting system and heavy reliance on economic models developed by economic experts have led to accounting becoming divorced from economic planning and have brought about relative lack of opportunities for creativity in accounting work. Many other observers have criticised the insufficiency of the information provided by the traditional accounting system to satisfy both micro and macro needs. The more serious criticisms have been directed to the lack of integration between micro and macro accounting information. Mattessich, R. (1964, p.17) not only expressed the desirability of such integration, but also stressed its necessity for planning, control, and decision-making at both micro and macro level and thus for the economic development of a nation.

As far as traditional accounting is concerned, it could be argued that it would be a grave mistake for any of the developing countries blindly to adopt the

accounting system of a particular developed country, such as the U.K./U.S.A. system. The accounting system adopted should be compatible with its own economic and social structure and tailored in such a way as to convey accounting-economic information for planning, control, and decision-making,thus providing a sound basis for accelerating economic development. Briston, R. J. (1978, p.109) warned that accounting in the U.K./U.S.A. pattern is inappropriate to the needs of developing countries in many important respects. In particular he highlighted the following weaknesses.

> "1. An accounting profession which is biased towards British attitudes. This implies examinations which concentrate upon legal and professional subjects, often in a British rather than in a native form, the use of the articles system, a dominant emphasis upon auditing, and an abhorrence of subprofessional grades of accountants.
> 2. Financial control of the private sector based upon accounting concepts laid down by the U.K. Companies Acts, which may have been relevant to a British capitalist system one hundred years ago, but are hardly calculated to provide the information necessary for government regulation of industry in a newly independent developing country.
> 3. A complete lack of interest on the part of most accountants in the problems of providing information within the spheres of government administration and economic planning. This deficiency is especially crucial when the major part of the industrial sector has been nationalised or the government has a controlling interest therein"

Therefore, from the above argument, it can be said,

that major criticisms are attributable to the divergences and lack of integration between micro and macro accounting systems. Accounting information systems should be dedicated to serving both micro and macro needs and should be integrated on a national basis within a consolidated harmonised framework.

CHAPTER THREE

ACCOUNTING FOR PLANNING, CONTROL, AND DECISION-MAKING

3.1 Introduction

The complex problems of economics in both developed and developing countries, have made increasingly apparent the need for accounting information and techniques to bring about their solution. This has necessitated co-ordination between the accounting and economic disciplines and has led to the emergence of the socio-economic accounting field to deal with social issues at both micro and macro economic levels.

It is well-known that rational planning in any economy depends to a large extent on the integrated appraisal of its basic components, namely investment projects in both the private and public sectors. This brings into focus the importance of cost-benefit analysis as an economic-accounting technique for planning, control, and decision-making at both micro and macro levels.

This chapter comprises four main sections. The first is a discussion of accounting and economic measurements. The second deals with the role of accounting information and techniques for planning, control, and decision-making in the private sector. Accounting for the public sector is discussed at some length in section three. Section four describes briefly the siting of the Third London Airport which illustrates some of the practical problems which arise.

3.2 Accounting and Economic Measurement

Accounting and economics have much in common, using similar tools and techniques to assist the analysis and interpretation of data for the benefit of economic development. This relationship has been realised by many eminent academics in both the accounting and the economic fields. Enthoven, A.J. (1965, p. 216) has argued that :

> "Accountants will have to become more aware of the economic meaning and use of accountancy than before, and should be equipped to assist in economic analysis and programming. The role of accountancy in the future might well extend itself to the whole economic sphere, and proper accounting information might even create something of a revolution in our economic thinking and policies. One thing at any rate is sure: a greater exposure of accountants to economic realities, and conversely a better insight by economists into the nature of accountancy, are among the urgent needs of world economic development."

This view is in line with that of Morgenstern, O. (1963, p.70) who stated that business accounts may be considered the single most important source of information reflecting the economic activity of a nation. Nevertheless, the relationship between accounting and economics needs to become still closer because the two disciplines study the same material and contribute a great deal to economic development. The inadequacy of the link between economic theory and accounting theory and practice was noted by Morgenstern (pp. 70-71) as follows:

> "Unfortunately, the contacts between economic theory and accounting theory and practice are far thinner than one would like and have reason to expect. As a result, both have suffered."

It would perhaps be true to say that the dominance of the professional accounting bodies and their influence on accounting practice has largely contributed to the separation between these two disciplines. On the other hand, it may also be argued that economists are sometimes too concerned with economic theory and fail to recognise the contribution of accounting information to the economic development of a nation. Recognising this distance between the two disciplines, and its effects on economic development, there has been a move among eminent authorities in both fields to bridge this gap through socio-economic accounting. Whittington, G. (1984, p. 201) argued that:

> "Accountants are, as a result of the changing economic, social and political environment, becoming involved in normative questions. Practicing accountants become involved in cost-benefit studies, and there is increasing pressure for companies to extend their reports to deal with their "social performance" which covers a wide range of matters outside the scope of the traditional field of reporting economic performance to the proprietors of a profit-maximising business... Also, the increasing scale and interdependence of business , enterprise is broadening the accountants horizon to include an interest in macro economic matters."

In recent years, accounting and economics have moved closer to each other in many respects. They are

both interested in forecasting the future consequences of decisions and gathering information accordingly, to aid decision-making at both micro and macro levels. Opportunity cost, for example, is an economic concept which is used in accounting for decision-making purposes. It concerns the benefit foregone by using a scarce resource for one purpose instead of for its next best alternative use. It is thus based upon accounting data associated with the future. The economic income concept is another example of the use of accounting yardsticks in economic measurements. It evaluates capital on the basis of discounted future cash receipts. It is defined as the dividend during a period plus the amount by which the present value of expected future receipts at the end of the period exceeds the present value of expected future receipts at the start of the period (Gordon, M. 1960, p. 607). The information set approach is derived basically from the expected accounting figures of the future. The present value and internal rate of return methods originated in accounting theory (See Parker, R. H. Chap. 3. 1969). Therefore, it can reasonably be argued that accounting has contributed to economics by providing data and knowledge relating to the economic operations and increased co-operation between the disciplines is needed to further economic development.

3.3 Private Sector

Accounting in the private sector has an important role to play in gathering, organising and measuring the efficiency of the utilisation of economic resources in order to maximise profits and wealth. Accounting also provides the information needed by managers for decision-making and efficient operation. The use of financial management techniques, such as the discounted cash flow model, may facilitate comparisons between alternative investment opportunities. In addition, reliable accounting information may be needed for controlling the activities of an enterprise by comparison between the actual outcome and that budgeted.

This section explores the significance of accounting techniques as tools for planning, control, and decision-making in the private sector.

3.3.1 Planning and Control in the Private Sector

Planning the future goals and sub-goals of an organisation is considered to be the most important function of financial management. Firstly, managers have to formulate the organisation's objectives and decide upon the broad plans and policies by which these objectives will be obtained. This is termed "strategic planning" which is defined by Anthony, R. and Herzlinger, R. (1980, p.19) as "the process of deciding

on the goals of the organisation and on the broad strategies that are to be used in attaining these goals". The formulation of objectives and the choice of broad strategies are inter-related. In this regard, Briston (1981, p. 524) argued that :

> "These two activities are interlinked, as firstly, the formulation of realistic organisational objectives cannot take place without some consideration of how they are to be attained and secondly, selection of plans and policies obviously depends upon the objectives they are intended to achieve".

Organisational strategic planning is the function of the most senior management and directors in an organisation. The planned objectives cannot be achieved unless there is an elaborate monitoring and control system which should involve a formal budgetary control system. Thus, attention should be given to the comparison of actual results and those budgeted as a prima facie indication of good or poor performance, depending on whether it is favourable or unfavourable. In total a management planning and control system has five essential elements, summarised by Mulins, L. (1983, pp. 22-3) as follows:

> "1. Planning desires- it is important that people understand the nature of the goals to be achieved, which entails clarification of the goal by some measurable attribute. 2. Establishing a standard of performance against which the level of success can be determined. 3. The need for a means of monitoring actual performance. This aspect of control requires

> feedback and therefore, a system of reporting information. This system should be precise and relevant, and in a form that enables management to highlight deviations from the planned standard of performance. 4. The fourth aspect of control is to compare actual performance against planned targets. Evaluating information is required at this stage, in order to give details of progress, reveal deviations, and identify probable causes. 5. The taking of corrective action is the final element of a management control system. This action is to correct the situation by highlighting what can be done to improve performance and achieve the targets".

The above five elements may be brought together to fulfil the dual functions of budgets as plans and as controls of economic activities. The budget targets become goals for the enterprise, and sub-goals for segments of the business for the planning period. However, budgets are fairly tentative plans expressed in financial terms, and covering a specified period of time (Anthony, R. N. 1965, p.316). As with any other plan, a budget is subject to revision if comparison with actual performance reveals any inadequacy in the estimations first made. As regards control, budgets provide a major vehicle for this by establishing standards and measuring management performance, so that relevant decisions may be taken in order to bridge the gap between target and performance. Therefore, the budget can be seen as an integrated system for planning and controlling economic resources. It is not feasible to consider either of these activities in isolation,

both are interwoven and have a great influence on costs, profits and thus on the net worth of the firm as a whole.

3.3.2 Investment Appraisal

Without doubt, among the most significant and paradoxical developments in investment appraisal in recent years have been the challenges posed to the value of fundamental security analysis as a reliable means of reaching profitable investment decisions. These challenges may represent analytical techniques in which probabilities of occurrence are determined for all critical investment elements. The cash flow approach (including discounted cash flow models), risk and uncertainty analysis (including portfolio theory), and cost of capital are indispensable, rational and useful approaches to reaching safe and sound investment decisions.

3.3.2.1. The Cash Flow Approach

The cash flow approach is based on the idea that an investment of money is made primarily to generate further money to spend or invest elsewhere (Taylor, A. and Shearing, H. 1979, p.194). Therefore it could be used as a method of determining an optimal investment when two or more alternatives are available. Admittedly, the selection and financing of capital investment are two of the most important and critical

business decisions. They are both fraught with difficulty in practical terms because they involve a projection of cash flows over the life span of the project. Consideration must be given to inflows and outflows of cash when evaluating a proposed investment, with special attention placed upon the magnitude and timing of cash flows, which are not identical with profits or income.

The two techniques relating to DCF are the net present value (NPV) and internal rate of return (IRR). Although both techniques are solely based on cash flows, they can also be applied to all economic flows, as long as these can be expressed in quantitative terms (Enthoven, A. J. 1973, p.184). Under the NPV technique a proposed investment with a zero or a positive net value would be accepted, while the IRR measures the yield, namely the rate which equates the discounted cash inflows to the discounted outflows. These two techniques are based on the assumption that there is no risk involved in the investment decision. The amount and timing of the cash inflows and outflows are known with certainty, and the investment undertaken is unaffected by any other investment decision, as it is assumed that investment opportunities are entirely independent (Lumby, S.P. 1984, PP.20-1).

However, a project that would be accepted in the absence of inflation may be rejected in an inflationary

environment. On the other hand, if a project has earnings coming in after a short time, its NPV will not be seriously affected by a fluctuation of the discount rate, but a project whose earnings come late will be severely penalised by high discount rates. Similarly, for the sake of argument, if full allowances for capital expenditure are not taken as soon as possible, the NPV of the cash flow after tax will be reduced (Koutsoylannis, A., 1982, p.26).

The importance of introducing all relevant elements is argued by Mills, R. (1983, p.36).

> "In conclusion it has been demonstrated that it is essential to ensure that all relevant elements are introduced to the NPV calculation. Failure to do so can have a significant effect upon the result and the conclusion drawn about a project. We have seen that making adjustments for taxation, inflation and non-annual discounting in this particular case had such a significant effect upon the NPV that the original decision was completely reversed. This need not necessarily always be the case but awareness of such a possibility by the users of such techniques must be seen to be extremely important".

From the above argument it can be seen that ,in DCF calculations, taxation and the expected inflationary environment should be taken into consideration, while the problem of risk and uncertainty may be equally important and have a profound effect on the decision.

3.3.2.2 Risk and Uncertainty

Risk exists when the value of variables, such as costs and profits, are not known in advance with absolute certainty, but their probability distributions are known. Uncertainty pertains to a situation in which the probability distribution is not known at all.

However, most investment decisions involve some degree of risk, which is related to the expected net present value of return generated by the investment. The degree of risk may be expressed as the coefficient of the variation between the planned and actual returns. The greater the divergence between them, the greater is the degree of risk. The attitude of decision-makers toward risk is perhaps the most important factor in project selection , for their choice of project will be governed by whether or not they are risk averse. However, both logic and observation suggest that decision-makers and/or managers are predominately risk averters, and hence the investment decision depends not only on the NPV or IRR techniques, but also on the expected risks involved in the project under consideration. These risks are classified by Paish, F. W. and Briston, R. J. (1982, pp.6-10) under four main headings:

1. Physical risks, which are those that arise from unforeseen accidents such as flood or fire, which

may destroy goods created by the work financed.

2. Technical risks, which are those derived from the variations or differences between the objectives pursued and the actual results. These may occur because of the lack of skill of the producer, or there may be unforeseen technical risks due to the fact that the process itself is only newly developed. Lack of experience frequently affects the results of projects during the first few years from their establishment.

3. The third category of risk is economic. Paish and Briston pointed out that two kinds of risk may be associated with the resources assumed to be available for investment. The first is the risk of inefficient supply of the resources needed for production. This type of risk is perhaps more likely to occur in a planned economy than in a free-market economy. In a planned economy it may be that a missing item which cannot be obtained at the officially fixed price, cannot be obtained at all, whereas in a free-market economy it could be obtained at a competitive price. The second kind of economic risk is that associated with an inadequate demand for production. This is considered to be greater in a free-market economy than a planned economy. The unforeseen rise in costs of production in the former economy due to

scarcity is frequently offset by a rise in demand for the finished product, while a change in the demand for the finished product is less frequently offset by a change in costs of production.

4. Finally, there are the political risks which may occur as a result of unforeseen intervention by governments. This kind of risk may particularly affect those firms which deal with foreign countries. Political risks also affect domestic firms when the government attempts to control production prices and/or wage levels.

Because the circumstances surrounding each project are unique, each has its own particular risks. Therefore, the project-selection decision depends to some extent on the NPV of its expected returns, properly adjusted for the risk. This requires unbiased estimates of cash flows throughout the lifetime of the project in the form of a probability distribution rather than a single profit-figure. Hawkins, C. J. and Pearce, D. W. (1971, p.85) argued that:

> "Risk is another area in which no simple clear-cut panaceas can be provided. A number of theoretical solutions have been devised for the problem, though many question the possibility of these being capable of general application. Nonetheless, significant improvement to methods conventionally used in much of industry can be made. These improvements do not require complex techniques and merely involve the presentation of data in the form of probability distributions rather than as a single estimate of the project's profitability".

However, a number of methods may be used to give the decision-maker a better understanding of the risk and uncertainty associated with a proposed project. sensitivity analysis, for example, may be used to examine the impact of possible changes in the individual components of a project. It is important to find how the NPV of a project would respond to changes in the appraisal of the main items of costs and benefits. the impact of possible errors of estimation can be pictured in advance, so that appropriate steps to reduce it could be taken beforehand. Sizer, J. (1981, P.95) summarised this approach as follows:

> "Sensitivity analysis can be used to determine the impact of fluctuation in the basic data on a project's outcome. There may be three or four critical variables and "what if" type questions can be asked to test the sensitivity of the project to variations in these key variables. High risk projects are likely to have more key variables, and more sensitive key variables, than low risk projects. Sensitivity analysis does not help to assess the likelihood of such changes occurring and there may also be a limitation to the number of variables that can be handled simultaneously".

It can be said, therefore, that the main purpose of sensitivity analysis is to test the results of differences between estimates made at the planning stage, and actual practice. It is a means of dealing with uncertainty about future events and values. This analysis may be made, for example, in an agricultural project to test the effect of delay in implementation or

changes in yield on the net worth of the project. The probabilities of occurrence are determined for all critical project elements and then precise measurements of the project's worth are made.

Although this type of analysis has certain advantages, it does not provide any indication as to what the decision-maker's reaction should be to the data presented in a sensitivity table. It provides no rules to guide the decision-maker as to whether the initial appraisal advice should or should not be amended according to these data. Indeed, no authoritative decision rules have yet been formulated to allow the decision-maker to deal fully with risk and uncertainty in investment appraisal. However, many useful models and techniques have been provided to aid him in dealing with this phenomenon (Bromwich, M. 1976, P. 233). This argument may draw attention to the importance of the portfolio theory which produces a precise measurement of the risk and uncertainty associated with an investment appraisal.

3.3.2.2.1 Portfolio Theory

The basic idea of Portfolio Theory is that it takes into consideration the possibility of interaction between individual projects. It assumes that risk diversification can be facilitated by treating the total investment as a portfolio. The first illustration of

this point was by Markowitz in 1952 (1). The theory considered two approaches within its framework. Firstly, the evaluation of any proposed investment should focus upon its effect on the firm as a whole. Secondly, the evaluation of an investment should emphasise the impact of its risk upon the shareholder's portfolio of assets (Koutsoylannis, A. 1982, p.145). Therefore, investment selection depends not only on the results obtained by the traditional methods of investment appraisal, but also on the investors' attitudes towards investment risk and the level of return required to compensate them for any additional risk. Accordingly, risk could be defined as the expected deviation of actual returns from the average return, and it requires information regarding the expected average return and standard deviation therefrom, for each stock being considered, the correlation of returns between each of the stocks and any portfolio constraints such as a minimum number of shares or a maximum investment in each single stock (Briston, R. J. 1981, p.430). In other words, the theory concludes that the variance of the possible returns on the portfolio can act as a measure of risk, and if the correlation between two investments is

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(1) Important extensions have been made to the theory by Markowitz in 1959 ; James Tobin 1958; Treynor, J. 1961; Sharp,W. 1964; Linter, J.1965;Mossion, J.1966;and Fama,E.1971(Levy,H. and Sarnat,M.1982, P.79).

negative, then the risk of the portfolio will be reduced. Therefore, combining individual securities in a portfolio can reduce the risk, depending upon the degree of correlation among the returns, and the number of securities included within the portfolio.

One can conclude, therefore, that this theory may be considered as an aid to decision-making if one presupposes that the firm has defined its views on risk and investment payoff. The selection of the most desirable investment portfolio will depend upon the preferences of management with respect to NPV, on the one hand, and variance as a measure of risk, on the other. In short, it is a matter of trade-off between risk and return and the selection of an acquisition is dependent upon whether it is included in a portfolio of investments that meets the firm's requirements for both risk and return.

3.3.2.2.2 The Cost of Capital

The determination of the cost of capital is an essential aspect of financial management. It can be defined as follows: (Briston, R. J., 1981, p.367).

> "The cost of capital is the rate of return which leaves the market price of the company's share unchanged. It is an opportunity cost, a return required to justify the use of the capital, a cut-off rate for the allocation of capital to projects. The rate will depend on a number of factors including the risk as perceived by the providers of capital, the

type of security offered, the general level of interest rates, and the effects of the taxation system".

Given the above definition, it can be said that the cost of capital represents the weighted average of the estimated cost of the funds to be invested in the company. These funds will be a mixture of debt and equity. The cost of debt is its interest cost reduced by the savings in income taxes, while the cost of equity represents its dividend over time. The cost of equity capital has been defined by Van Horne, J. (1980, p. 221) as the minimum rate of return that a company must earn on the equity - financed portion of its investment, in order to leave unchanged the market price of its stock. The cost of equity capital under the certainty model may be criticised as being unrealistic. Therefore, a new approach incorporating the additional return necessary to compensate the equity holders for the financial risk premium is necessary, to cover the risk entailed in the capital structure. The most important method which has been developed to handle the risk factor is the Capital Asset Pricing Model (CAPM), which was developed by Sharp, Lintner, and Mossin (Brief, R. P.and Owen, J. 1975, p. 53). The CAPM is based upon the work of financial economists, combining the portfolio theories of Markowitz and Sharp. It is based upon the assumption that investors seek to hold portfolios of securities

which give maximum returns for particular levels of risk by comparing the risk-free interest rate and a premium for risk. Horngren, C. T. (1977, p. 445) pointed out that:

> "An outgrowth of portfolio theory, the capital asset pricing model, provides an alternative means for measuring the cost of equity capital ..... The basis of the model is that the required rate of return on any asset is related to the expected rate of return on all assets in the entire economy. The key idea is that investors cannot diversify away the entire risk. Consequently, the greater the undiversifiable portion of the risk, the greater the required return. This required return is the cost of equity capital of the firm in a market context".

Whilst the CAPM is concerned with the expected returns to securities, it must consider the return on a risk-free security and a premium for the undiversifiable risk of the particular asset. This risk is measured by the security's systematic movements with the overall market and it cannot be eliminated by portfolio diversification.

Generally speaking, although the main objective of this research is to examine the evaluation techniques employed in the public sector, with special application on to project appraisal in Iraq, it seems appropriate to consider the aforementioned aspects of investment appraisal in the private sector in order to shed light on some elements of project appraisal in the public sector.

3.4 Public Sector

3.4.1 Planning and Controlling Economic Activities

The planning process and its related control, are necessary to marshal the economic resources of a nation in a way which contributes to a social welfare function. Harmony between micro and macro planning can be achieved through consistency in their objectives. To bring this about, a great deal of accounting information about existing and proposed projects is needed, since they form a major part of the framework of the country's economic development activities. Moreover, accounting information and techniques are necessary to keep track of the changing information needs of the development planning process and to indicate the possible variances between the macro and micro objectives. Such a procedure may contribute to the integration of aggregate planning and project appraisal, the lack of which has given rise to much criticism.

Accordingly, it can be argued the project appraisal is an important element in the formulation of coherent economic development programmes for a nation. In simple terms, project appraisal involves defining the objectives with which the project is to be established, identifying the capital projects that will achieve these objectives, evaluating the costs and benefits of the projects and deciding whether or not they are to be accepted. A careful evaluation of the costs and

benefits is of considerable importance in assessing whether a project will be successful in achieving the specified objectives.

The recognition that programmes and projects should be assessed in terms of their cost-benefit relationships and thus of their economic efficiency , may be seen as a feature of performance budgeting. This budget emerged for formulating economic policy and for checking the efficiency with which programmes are carried out. It requires a careful and comprehensive classification of the costs and benefits of each proposed programme, which is of great relevance for measurement purposes and provides the basis for performance appraisal. The United Nations Manual (1965, pp.2-4) pointed out the essential elements of the performance budgeting system as follows:

> "First: establishing a sound programme structure, whereby the budget classifications should be closely related to projects included in a development plan. Second: integrating the accounting system with the budget in terms of that programme structure. Third: identifying physical programme and work measures that are meaningful for decision-making purposes and administrative control, and are dependent on the availability and development of relevant financial-economic data".

In this context, the most recent and ambitious system which has attracted attention to the integration of economic planning, programming and budgeting is the

Planning-Programming-Budgeting-System (PPBS), which represents a major advance in the application of economic analysis to public sector decision-making. It calls for a careful specification and analysis of basic programme objectives in each major area of economic activity. It is described by Proxmir, S. W. (1975, p.165) as the most basic and logical planning tool which exists to provide for the quantitative evaluation of the economic costs and benefits of programme alternatives, both now and in the future, in relation to analysis of similar programmes. The essence of PPBS is the development and presentation of relevant information as to the full implication of cost-benefit analysis which is concerned with the determination of the net benefit of programmes, and with assessment of their relative importance to society.

3.4.2 Cost-Benefit Analysis

Most countries, especially the developing nations, have some form of economic development plan that identifies sector(s) to be given priority and areas where investment is needed. For this to be done, a careful review and appraisal of the proposed projects should be made in such a way as to present cost-benefit analysis (CBA) results that offer high benefits to society within the framework of the economic development plan. The usual first step in project analysis is to

undertake a feasibility study that will provide sufficient information for deciding among alternative ways of achieving the desired objectives and enable the project appraiser to exclude undesirable alternatives. This study provides the opportunity to shape the project to fit its physical and social environment and to investigate whether it is likely to be high-yielding. The leading role of the accounting function in appraising and selecting a project pertains to the collection and measurement of preliminary costs and benefits items, which helps in the application of the decision model and facilitates the identification of the project likely to be beneficial and feasible for the nation's economy.

Although most literature on CBA traces its origins to welfare economics in the nineteenth century, when Jules Dupuit discussed the subject in his paper "On the Measurement of the Utility of Public Works" in 1844 in France (Little and Mirrlees, 1982, p.28), Pingle, G. (1978, p.63) has established that the earliest CBA dates to 1768 by Ferista, M. K. in London, and that the most sophisticated studies were carried out by British civil servants in India during the mid-nineteenth century. Nevertheless, it was not realised until the beginning of the 1930's that CBA might influence government economic policy.

The first application of CBA to a government programme was to flood control and irrigation schemes in the U.S.A. The Flood Control Act of 1936 established the principle of comparing benefits to estimated costs in an attempt to appraise the social costs and benefits generated by the public investment decision (Pearce, D. 1971, p.14). Therefore, it may be argued that the aim of CBA is to guide the decision-maker in assessing the advantages and disadvantages of government economic policy, and towards channelling resources into projects which will yield the greatest net benefit to society. CBA is depicted by Dasgupta, A. and Pearce, D. (1978, p.21) as an aspiration of a decision-maker for the attainment of the optimal decision. They argued that:

> "It is difficult to avoid the impression that CBA is frequently treated as the decision-maker's dream - a golden rule which actually substitutes a simple figure for the judgement he might otherwise have to express. CBA meets a desire for certitude and simplicity, but to treat it this way is to venture on to dangerous ground. It is a guide, an aid to decision-making. It gives an approximation of what 'society' prefers".

However, from the first application of CBA in the U.S.A. its use spread to encompass most areas of government decision-making, such as the programme budgeting systems of the Tennessee Valley Authority and the Department of Agriculture. In the early 1950's, the Budget Bureau adopted its own set of criteria for

the appraisal of development programmes, which included a yardstick for weighing the costs and benefits of expanding different programmes and for setting priorities. This tendency developed a few years later into PPBS which has CBA as a main pillar.

In the U.K. , the first application of CBA in a government programme concerned the M1 motorway, the study being carried out by the Road Research Laboratory in 1960. Since then, it has been applied to several projects such as studies of a new underground railway line in London, the proposed Third London Airport, many river bridges, and so on. In 1967 a British Government White Paper gave formal recognition to the adoption of CBA in the Nationalised Industries.

Moreover, Little and Mirrlees (1982, p.28) pointed out that the Eastern European communist countries and the U.S.S.R itself have began to move in the same direction for project appraisal. The use of CBA in the selection of public investments in some developing countries, such as Egypt, Sudan, Kenya, Nigeria, India and others, has also received considerable attention in recent years, in their endeavour to hasten economic growth and further a range of social objectives. The crucial problem facing these countries is that of allocating limited resources among different activities in such a way as to derive maximum benefit to society. Therefore, the need arises for a tool by which a choice

can be made, among alternative policies, of the one that brings about the highest level of utility. CBA is the tool for achieving the choice among these alternatives, and in particular, among the investment projects with which this research is primarily concerned.

CBA is desirable in developing countries for two main reasons. First: the economics of most of these nations are centrally planned, not necessarily due to their political ideology but often because governments have been left in control of their national economies due to the weakness of the private sector, a situation which has led in many instances to national resources being exploited without sufficient analysis and consideration for social and cultural consequences. The emergence and domination of the national economy by the government in so many developing countries, such as Iraq, has brought about large scale investment projects whose ramifications influence every aspect of social life. These circumstances have made CBA desirable for project appraisal and it is increasingly in the interest of government and public institutions to use it as an aid for planning, control and decision-making.

Second: during the last few decades the world has witnessed the independence of many nations which are economically underdeveloped. These have, in the endeavour to match developed nations, attempted to establish national development plans to reflect their

basic economic and social aspirations. To ensure that these objectives are appropriate to the economic development of the nation and the projects selected to fulfil these objectives are feasible, the best selection can be determined only by a proper system of CBA.

However, it is well-known that the quality of project analysis depends to a large extent on the quality of the data used and of the forecasts of costs and benefits made. Accounting information and techniques play a leading role in project evaluation and selection by providing the relevant data and measurements to cover all the projected costs and benefits incorporated in the decision-making and planning processes. Measurement of social prices, for example, can be a formidable task, involving considerable investigative and analytical talent. Social costs should be measured by reference to the welfare that society must sacrifice when factors such as production, land, labour, capital, foreign exchange, and so on, are moved from their best alternative use into the project being analysed. The prices of these factors are referred to as "shadow" or "accounting" prices, which have been defined as "values of marginal productivity of factors when a selection of techniques has been made which produce the maximum possible volume of output, given the availability of resources, the

pattern of final demand, and technological possibilities of production" (Enthoven, A. J., 1973, p.164). Jones, R. and Pendlebury, M. (1984, p.107) also referred to shadow prices as the surrogate prices that are derived to reflect more accurately the true social opportunity costs of using resources in a particular project. The function of accounting in this regard, however, is to provide specific measurements of the relevant costs and benefits and to determine what shadow prices are to be applied in order to reflect the true opportunity costs borne by the society.

Apart from the problem of shadow prices, there is also the need to determine the appropriate discount rate to be used in analysing a project to reflect society's preference for present benefits over future benefits.

There are those who believe, like Seen, A. K. (1961, p. 486) that the social rate of discount used for evaluating public investment should be determined by means of the government economic policy which dictates whether society ought to sacrifice present consumption for future benefits. Another proposition suggests that the social discount rate for use in public sector projects should reflect the rate of return on alternative private sector projects , so that the rate of discount is the rate of return on marginal projects in the private sector, and that it would be naive to

believe that the social discount rate could be determined by the deliberations of a government committee. Kearne, S. (1979, p.18) argued that:

> "The view is held by a number of economists that to avoid misallocation of resources it is essential, in the evaluation of public sector investment, to take account of the rates of return available in the private sector. The establishment of a Test Discount Rate (TDR) (2) 10 per cent in 1969 for U.K. nationalised industries was explicitly based on opportunity costs prevailing in the private sector. In 1978, in the White Paper The Nationalised Industries a new concept was introduced, that of a "required rate of return" (RRR) (3), to replace the TDR and set at 5 per cent, a decision again explicitly based on considerations of the rates of return available in the private sector".

However, if either of the above arguments is accepted, it would be wrong to think that the chosen rate accordingly represents the true social return unless the external effects generated by the project are considered. Externalities can take the form of benefits or so-called "external economies", or the form of costs or "external diseconomies", such as air pollution. The evaluation of the gain or loss which society incurs from externalities, depends upon the extent to which the

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(2) TDR has been defined as an ex-ante minimum discount cash flow required rate of return which was designed to be used to appraise any individual investment undertaken in any of the nationalised industries.

(3) The White Paper defines the RRR as the cost of capital of the nation which the public sector must seek to earn from its total programme of investment, including both revenue and non-revenue projects.

relevant eco-financial information can be obtained.

The question of which effects are to be taken into account and which not, will depend, in the last resort, upon a consensus in the particular society (Mishan, E. J. 1971, p.115). Therefore, a special survey by accountants at several levels is both useful and necessary for the assessment and measurement of the social costs and benefits of these externalities, due to the fact that economists and engineers have less experience and expertise in the measurement of these factors than have accountants. Estes, R. W. (1972, P.288) argued that:

> "The most complex, and controversial, link in the assessment process is the determination of the social cost-monetizing the external diseconomies. Accountants are likely to resist involvement in such efforts because of the uncertainty involved, but such a resistance is not justified. Cost determination is more the forte of accountants that of engineers and economists, yet these two professions have shown much greater interest and have undertaken considerably more research into social cost measurement than have accountants".

However, the essential point is that the evaluators of a public investment project should take into account the external effects of their actions in so far as they can alter the results of project appraisal, and thus direct decision-making towards specific areas. Another problem associated with the appraisal of projects in the public sector is the existence of risk and uncertainty which should be given special attention in the CBA

calculation.

3.4.2.1 Risk and Uncertainty

What has been said about the effects of risk and uncertainty on investment decisions in the private sector applies also, to some extent, to the public sector, since the first indication of the economic justification of a project can be obtained by calculating its financial profitability. However, as was stated in the previous section, financial profitability alone is an inadequate criterion for the evaluation of a public project, particularly in developing countries, since its aim is the maximum net benefit to society, rather than simple financial profitability. This is not to say that the question of risk and uncertainty should be disregarded.

However, the implications of risk and uncertainty for public investment decisions remain controversial, and the opinions on this issue have fallen into three categories (4).

The first suggestion is that risk in public investment should be treated in the same way as it is for private investment. It is argued that to treat risk differently in the public sector would result in an

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(4) These suggestions have been discussed by Little and Mirrless (1982), Arrow, K. J. and Lind, R. C. (1970), Pearce, D. W. (1971), Desgupta, A. K. and Pearce, D. W. (1978), and Jones, R. and Pendlebury, M. (1984).

over-investment in this sector at the expense of private investments yielding higher returns. This argument gives rise to questions on a number of the problems discussed earlier regarding externalities, shadow prices, social costs and benefits and so on, which are ignored entirely in private investment decisions. Furthermore, many problems concerning risk and uncertainty arise in private investment related to market hazards, which are not always present in public projects.

A second suggestion is that risk in public sector projects should be ignored because governments can cope with risk and uncertainty more easily than can private investors. The argument rests upon the ability of a government to spread project risk across a wide area of society so that it is reduced almost to zero. This argument may give the impression that risk in the public sector is usually trivial and insignificant, a situation which may lead to the use of a discount rate in this sector lower than that in private investment. This seems an implausible and unrealistic view because a government may be expected to act against serious risk which would influence economic growth. Accordingly, caution is needed to avoid the problems of risk and uncertainty in public sector projects.

A third suggestion says that a government is responsible through its national economic policy for the

determination of risk and time preference, hence the rate of discount and attitude toward risk would be specified by the appropriate authorities and the procedures for evaluation would incorporate these risk and time preferences. This alternative may lead to the same results which are obtained by the discussion of TDR within the area of social rate of discount.

However, there are many valid reasons why the subject of risk and uncertainty is important within the CBA of a public project, partly because the analysis includes a financial aspect which takes the same form as in the area of private investment, and partly because it is subject to many external constraints which are themselves uncertain. Dasgupta, A. K. and Pearce, D. W. (1978, p. 174) pointed out three reasons for giving special consideration to risk and uncertainty in CBA. They argued that:

> "Firstly, data for estimating future benefits and costs may not always be available, or may not be available without special research directed towards this aim. Such research may be costly.
> Secondly, there are projects where there is an inherent tendency for benefits or costs to vary substantially from year to year, e.g. the benefits of a flood-control project in a particular year will depend on whether or not a flood occurs.
> Thirdly, we may want to compare a project whose outcome is relatively certain with one which involves a high degree of uncertainty: one project may be regarded as "a sure thing" while the other might, so to speak, lead either to triumph or disaster. Conceptual problems are involved in making these comparable to each other".

It may be argued, therefore, that risk and uncertainty in the public sector are in certain respects different from those in the private sector. Nevertheless, sensitivity analysis may be considered the appropriate approach for measuring risk in the public sector also. This approach may indicate the extent to which the project under consideration is socially profitable and thus it can assist a decision-maker in project selection. It is a technique for identifying and evaluating so far as is possible the relative importance of the various items entering the cost-benefit stream. In itself it does not necessarily give precise guidance as to the acceptability or otherwise of the risk. It does, however, give an indication of the size and nature of the risks and uncertainties involved which may render the decision obvious.

Generally speaking, in enumerating the costs and benefits of a proposed project it is important to distinguish between the pecuniary and the economic effects which are the primary indicators of the efficiency of public projects. Since the main intention of this research is to provide a guide for project appraisal in developing countries such as Iraq, many of these elements will be enumerated and discussed with reference in the case studies of the project appraisal of the Greenhouses Farm projects in chapters seven and eight.

The following section deals with application of CBA in the U.K. as an approach to decision-making in an advanced economy. A brief discussion of the siting of the Third London Airport will provide an insight into the many problems which have to be taken into account when CBA is applied.

3.4.3 The Siting of The Third London Airport

In May 1968 the U.K. Government proclaimed its intention to build in 1980, a Third London Airport with four runways. Accordingly, a Commission of seven members was appointed under the chairmanship of Mr. Justic Roskill to investigate the relative merits of different locations for the airport. Four possible sites were suggested for this project, all within fifty miles from the centre of London. These suggested sites were Cublington, Thurleigh, Nuthampstead, and Foulness. The commission detailed a research team to produce a CBA of the relative merits of the four sites. Their work was carried out over a period of two and half years, at a cost of over a million pounds. The analyses concentrated on a comparison between the four sites from the viewpoint of social costs, so that the site giving rise to least cost would be selected for the proposed Airport. The Research Team attempted to analyse, for each site, different costs, such as capital cost, airspace movement cost, passenger user cost, noise cost,

and others in their endeavour to ascertain the differences from the lowest cost site. Table (3.1) illustrates these differences. The discount rate used for analysis was 10 per cent. This rate was based on the assumption that the airport would be in operation by 1982 (Flowerdew, A. 1972, p.446).

It was assumed that a hypothetical circle bound the four sites, Heathrow airport, Gatwick airport, and Luton airport. The airspace movement costs of each site, therefore, represent those costs associated with the distance between any point on the boundary of the circle and the location of the site, while passenger user costs were defined as those costs borne by the passenger to cover the distance between a selected location and the centre of London (Dasgupta, A. K. and Pearce, D. W. 1978, p. 203). Consideration was given to whether passengers would prefer to use the proposed airport or other airports such as Heathrow or Gatwick. For this purpose, the commission distinguished between leisure and business passengers. A further distinction was drawn between public and private transport used by passengers.

One problem facing the Commission was that the choice of Foulness would have enabled Luton airport to remain open, and possible expand from one runway to two runways. At the same time, the choice of this site would affect the Ministry of Defence Complex at

Table 3.1

Differences From Lowest Cost Sites of the Third London Airport

(Millions of Pounds)

			Cublington		*Foulness*		*Nuthampstead*		*Thurleigh*	
			High Time Values	*Low Time Values*	*High Time Values*	*Low Time Values*	*High Time Values*	*Low Time Values*	*High Time Values*	*Low Time Values*
Row	1	Airport construction	18		32		14		0	
	2	Extension of Luton	0		18		0		0	
	3	Airport services	23	22	0	0	17	17	7	7
	4	Meteorology	5		0		2		1	
	5	Airspace movements	0	0	7	5	35	31	30	26
	6	Passenger user costs	0	0	207	167	41	35	39	22
	7	Freight user costs	0		14		5		1	
	8	Road capital	0		4		4		5	
	9	Rail capital	3		26		12		0	
	10	Air safety	0		2		0		0	
	11	Defence	29		0		5		61	
	12	Public scientific establishments	1		0		21		27	
	13	Private airfields	7		0		13		15	
	14	Residential conditions (noise, off-site)	13		0		62		5	
	15	Residential conditions (on site)	11		0		8		6	
	16	Luton noise costs	0		11		0		0	
	17	Schools, hospitals and public authority buildings (including noise)	7		0		11		9	
	18	Agriculture	0		4		9		3	
	19	Commerce and industry (including noise)	0		2		1		2	
	20	Recreation (including noise)	13		0		7		7	
Aggregate of inter-site differences (costed items only) high and low time values			0	0	197	156	137	128	88	68

Source: Flowerdew, A. 1972, pp.448-9.

Shoeburyness and in Foulness Island, rendering it necessary to find another site for them.

The noise nuisance was considered as a welfare loss in the area surrounding each proposed site. This was measured by using the Noise and Number Index (NNI) which takes into account the average noise level and the number of aircraft heard per day. These figures were obtained from a survey of people whose homes were in the vicinity of Heathrow Airport. The principle used for evaluating the noise was to estimate the sum which would be required to compensate those who suffered from the aircraft noise. It was argued that the noise disamenity would be reflected in property prices and the hypothetical compensation was assessed in terms of those people wishing to sell their houses and move away because of the noise nuisance. Property depreciations of up to 29 per cent were obtained. Flowerdew, A. (1972, p. 437) argued that:

> "People whose homes are affected by aircraft noise may be made worse off in three different ways: They may suffer depreciation of their property; if they move away to escape the noise they may lose householders' surplus; and if they remain they may suffer on account of the noise. The cost of noise on homes may therefore be assessed by (I) forecasting the number of people who move away because of noise, the number who move away for other reasons and the number who remain, and (II) estimating the values for depreciation, householders' surplus and the noise".

Furthermore, it was argued that the problem of

joint costs might arise in the case of the choice of Foulness site, in that the dredging of the sea port could effect the reclamation of the airport site. The costs estimated by the Ministry of Defence regarding its complex at Shoeburyness and Foulness Island were considered to be an important problem which influenced the choice of the airport site.

However, the above discussion may highlight the necessity of integration between the accounting and economic disciplines when appraisals of public projects are considered. The main problems in this study seem to centre on forecasting and evaluating the relative items, cost in particular. Risk and uncertainty may also influence and alter the decision-making regarding a specific aspect.

The final report of the Commission concluded that the airport should be built in Cublington because this would generate a very low cost compared with the other sites. Unfortunately, the U.K. Government was not bound by the Commission's recommendation and decided to build the airport at Foulness because the choice of the Cublington site would lead to the closure of the Luton airport, due to the difficulties of air traffic management.

A number of criticisms may be made of the way in which the Commission's analysis was constructed:

First: it is generally accepted that the essential

character of CBA is to define and measure both social costs and benefits. The project whose benefits exceeds its costs would be accepted. The basis of the commission's recommendation was that the site with the lowest cost would be selected. This assumption would be correct if the benefits for all four sites were exactly equal. Accordingly, the costs differences between the four sites, are meaningless in the absence of the benefits measurement and do not reflect whether or not the project would be economically feasible in the event of a particular site being selected. This argument may highlight the difference between CBA and cost-effectiveness analysis. Belkaoui, A. (1984, p.207) pointed out the differences between these two techniques, arguing that:

> "While cost-benefit analysis is concerned with quantifying both benefits and costs in money terms and determining the most efficient way to conduct a given programme, cost-effectiveness assumes that the outputs of a given programme are useful and valuable without attempting to measure their values. Thus, cost-effectiveness analysis may be merely defined as a technique for choosing among given alternative courses of action in terms of their cost and effectiveness in the attainment of specified objectives".

Given the above definition of cost-effectiveness, whether or not the commission applied CBA for the project appraisal is still open to question.

Second: in the determination of noise costs, the value of NNI used by the commission was calculated according to their survey in the areas around Heathrow and Gatwick. The main argument in their analysis was that noise disamenity would be reflected in property costs. If one accepts this argument, then attention should have been given to the expectation of noise increase in the future. If noise was expected to increase over a period of time, the depreciation figure which had been determined by the commission would understate the loss. Furthermore , consideration should have been given to other costs which might involve moving households away from the noisier zones, such as a desire to change their occupation.

Third: it was realised by the commission that the choice of any inland site (except Foulness) would lead to the closure of Luton airport, while the choice of the Foulness site would make possible the extension of Luton airport from one to two runways. Recognition of this point should be taken as the most important advantage of Foulness site . Table (3.1) shows that the extension cost (item 2) and noise cost (item 16) of Luton airport are chalked up against Foulness site, while the social cost of the closure of this airport (in the event of any other site being chosen) have been ignored. In

other words, the commission ignored the benefits foregone of Luton airport. Consideration of this point might have led the results being altered in favour of the Foulness site.

Fourth: Passenger user costs were considered of paramount importance in producing differences in the total costs between the sites. These costs and airspace movement together account for over 80 per cent of the total costs as shown in the table, and they both depend heavily on the value placed on passenger time (Mishan, E. J. 1970, p.234). Therefore, it can be argued that these costs almost alone brought about the wrong decision.

In general, it can be said that within project appraisal the need is apparent for selection, measurement, and evaluation of all relevant items of costs and benefits associated with a proposed project. There is also an indication that the absence of accounting-economic information in this phase may cause a wrong decision, and thus an unsuccessful project. Project appraisal does not mean only a decision as to project selection, it should set forth, in the form of a feasibility study, comprehensive and systematic evidence of the soundness of the project and its consistency with the economic development plan of the nation. These requirements will be discussed further in the next chapter.

CHAPTER FOUR

ACCOUNTING FOR ECONOMIC DEVELOPMENT: A DEVELOPING COUNTRY'S CONCERN

4.1 Introduction

This chapter occupies a central position within the general framework of the research, for it attempts to explain for the benefit of developing countries, an integrated approach to the interaction of accounting with economic concepts and analysis, providing a stimulus for accelerated economic development.

CBA, involves the interaction between the accounting and economic disciplines, and has a vital role to play at both macro and micro-economic levels, piloting and marshalling economic activities toward the objectives of the development plans and programmes of a nation. It requires accounting information modified for economic needs and with a comprehensive standardised content, a situation which demands the adoption of a uniform accounting system.

The chapter comprises four main sections. The first outlines the relationship between accounting and economic development. The second highlights the significant role of accounting techniques in the development process, while the third infers the need for an integrated accounting system. The conclusion of the chapter points the road ahead to economic development.

4.2 Accounting and Economic Development

Extensive natural resources and wealth in a developing nation do not in themselves guarantee sustained economic growth unless they are effectively utilised so as to contribute to economic development. Some countries may be classified as developed although they do not possess vast domestic natural resources, while, in contrast, certain other countries which are considered as developing have enormous natural resources without achieving development. This fact, however, has led most developing countries to strive for the achievement of sustained economic growth through the formulation and execution of development plans. In this context, reliable accounting-economic information should be the basis of such activities.

Nevertheless, it has become apparent in recent years that some of these countries are suffering from many deficiencies in their economies, despite having macro-planning and development plans. Therefore, the question arises as to where the flaw lies. Some of the foremost authorities in the accounting field,such as Scott, G. M. (1970, p.1) have criticised economists in developing countries for a lack of awareness of the potential significant role of accounting for economic development. Scott argued that:

> "Development economists are not aware of the importance of accounting to economic development; or that accounting is thought to

> be in some sense "given" in that it is considered unalterable, or is assumed to be either adequate, or will be adequately elicited as development proceeds"

If one accepts the above argument, the question arises as to the role of accountants in developing countries. They must themselves be aware of the significant role of accounting information and techniques to economic development (see section 3.2 of the previous chapter). The accounting field in most developing countries is fraught with problems and deficiencies due to the accountant's lack of awareness of economic development requirements. The problems of enhancing the relationship between accounting and economic information, the streamlining of accounting information at various levels in the economy, and the utilisation of this information for the purpose of micro and macro economic development have not been fully realised in some developing countries.

This situation has created other problems which have influenced economic performance, and subsequently economic development. Darmanin, D. (1985, p.2) outlined these problems as follows:

1. Poor financial and management accounting systems in business enterprise.
2. Inadequate accounting education of primary users of the information generated.

3. Weak legal and professional control.
4. Deficiencies in accounting education and research.
5. Lack of sound accounting systems in the public sector and government owned businesses.
6. Lack of parent framework of accounting for a linkage between micro-accounting and macro-accounting for purpose of development planning.

It is imperative, therefore, that accounting practice and education in developing countries should be developed in a certain framework so that accounting information and techniques can be viewed as tools for both macro and micro-economics purposes, and thus for the economic development of a nation.

4.2.1 Accounting for Macro-economics

Accounting information and techniques have become increasingly important to economic analysis, not only for individual micro entities, but also for the analysis of the economic activities of an economy as a whole. This tendency has necessitated the emergence of a new branch of accounting called macro accounting, which deals with aggregates of individual accounting units and has its focus on the sum of the economic activities or transactions of different groups in a society. In short, it denotes specifically the employment of accounting in the field of macro-economics (Yu, S. C. 1957, p. 265), a situation which caused Enthoven (1969,

p.22) to argue that macro accounting could play a role in helping to bridge the gap between economics and accounting, and thus enable accounting to make a contribution towards macro-economic policy. The linkage between accounting and economics at both micro and macro levels is an important dimension of effective development planning which is concerned with evaluation of the performance of a country's economy in order to provide the basis upon which alternatives are measured, weighed and outlined, and priorities for the use of resources established (Mirghani, M. 1982, p.59).

However, accounting can obviously be applied to the analysis of the economic activities of the economy through the preparation of national income accounts, input-output accounts, flow of funds accounts, balance of payments accounts, and a national balance sheet.

National income accounting is well established and widely practised in developing countries. It provides information regarding gross national product which indicates a country's economic performance. These accounts are mainly based on data collected from the major sectors of the economy, such as government, household, rest of the world, etc. (1) and are concerned with measuring and reporting the results of the economic activities of the micro units. Both national income accounts and the accounts of these sectors basically

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(1) For more details see section (2.5) of chapter two.

employ double-entry accounting. The main concern of the national income accounts is to reflect the value-added generated from these sectors as a result of their economic activities. It would not, however, be wrong to argue that the use of different sources of information based on different valuations and measurements usually fails to give an accurate reflection of the value added of these sectors in the national income accounts.

The input-output account is a matrix which shows the various inputs employed by each industry or sector and the uses made of its output (Briston, R. J. 1981, p. 513). In other words, it shows the inter-industry relations at a production level. By the same token, the rows and columns shown in the input-output table reflect the flows of goods and services among industries or sectors for a specified period of time. In short, they provide " from-whom , to-whom " identification of transactions. The analysis of input-output factors may assist the preparation of medium and long term plans and determine their consistency. Arkadie, B.V. and Frank, C. (1966, p. 85) argued that:

> "Input-output has two major uses in planning. The first is to help determine the consistency of a plan. That is to determine whether the requirements of primary factors and other inputs are within the limits of the amounts available. The second is to aid in choosing among various investment projects"

Since input-output analysis aids development

planning, the measurement and valuation of input and output items should be consistent with those used by the planning model. That is to say, accounting information provided from the micro units to the aggregate level must be on a uniform basis.

The flow of funds account gives detailed statements of funds and resources used by the various sectors of the economy. It portrays all financial transactions involving movement of resources between different groups, institutions or other aggregates of an economy, comprising both financial and non-financial items that are undertaken through the exchange medium of money and other paper assets (Enthoven, A. J. 1977 p.91). Financial items reflect all changes in assets claims, liabilities, and net worth, while non-financial items cover changes in real assets, income, and expenses. The components of a flow-of-fund account are usually subject to fluctuation in their values, and hence sound relevant cost information is required for the efficient preparation of this account.

The balance of payments account deals with the financial interrelations between a nation and foreign countries, classifying imports and exports of goods and services between domestic products and those of foreign countries. The balance of this account is the difference between the value of exports and the value of imports. Admittedly, this account has no place at the micro

level, and thus the relevant data for its preparation are largely obtained from government agencies and enterprises which deal with foreign countries and handle international transactions. This account tends to be more detailed than the "rest of the world account" of the national income accounts. So far as developing countries are concerned, the balance of payments account considerably influences a nation's economic development, and therefore requires a careful analysis and accurate information for measuring the costs and benefits of foreign investment, exchange rates, imports, exports, tariff policy, and government subsidies. Shadow prices would be the preferable device for such analysis.

The national balance sheet describes the status and sources of the net wealth of a nation at the macro-economic level. It is obtained by the consolidation of the balance sheets of all the individual components in the economy in order to reflect the value of all domestic assets and liabilities, whether tangible or intangible. The major problem is that of the basis of valuation of assets. If there is no systematic basis for the valuation of national assets, because accounting information is obtained from a confused array of different bases, the national balance sheet would be distorted.

It is thus apparent that accounting information at the micro level is an important source for preparing

data for the analysis of economic activities at the macro level. If this information is unrealistic this will be reflected in the macro accounts.

4.2.2 Accounting for Micro-economics

One requirement of accounting in the micro-economics phase is to devise a project appraisal cycle and related measurement procedures within the general framework of the national objectives. These tasks require the thorough investigation of project data and analysis of micro input-output relations in order to provide detailed guidelines which reflect the monetary and non-monetary returns expected from the project.

Project data are compiled from the investigation of technical, economic, commercial, and managerial aspects, and are worked-up into a financial appraisal model (2). Failure to include any single aspect may cause deficient project analysis, implementation and follow-up, and thus the failure to attain the objective of economic development. The technical aspects of project appraisal involve many questions of project design, construction, scale of operation, and the location, which are of the utmost importance, particularly in preparing for future extension (Ripman, H. B.1964, p.180).

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(2) Project appraisal aspects will be discussed in more detail within the case study of the Greenhouses Farm project-the Bulgarian group in chapter seven.

The economic aspect investigates the justification of the use of scarce resources needed for economic development. It involves the question of priorities in the economy and the likely effectiveness of the project's contribution to economic development. The first indication of the economic justification of a project can be determined by calculating its financial profitability and by finding the effect of the project on the balance of payments of the nation (Abdeen, A. 1975, p. 145).

The commercial aspect focuses upon the proposed arrangements for procuring the goods and services needed for the construction and operating stage of a project. Special attention may be paid to the amount of working capital required. The managerial aspect is perhaps a very important element of project appraisal in many developing countries because the lack of management experience and ability is one of the main obstacles to their economic development.

Gittinger, J. P. (1982, pp. 13-14) outlines several questions raised in this aspect: Is the institutional setting of the project appropriate? Does the project incorporate local institutions and use them to further the project? Will the project's staff be able to administer such large-scale public sector activities? Are authority and responsibility properly linked? Are ample provisions included for managers and government

supervisors to obtain up-to-date information on the progress of the project? Is a special monitoring group needed? In considering the investigation of any aspect, a solution to the expected problems should be proposed.

Input-output relations at the micro level have a significant role in project appraisal and are also of considerable significance in sectoral and macro level analyses. Within the micro input-output relations, two forms of activities can be distinguished (Enthoven, A. J., 1973, p.179). First: those that take place within a firm, and Second: those that pertain to the specific firm in relation to other firms. The former concerns cost and profit measurement associated with each production programme, comprising sales, production, inventory needs and changes required in employment, plant, equipment and all other factors associated with production. The latter concerns the interrelation of transactions between the firm and others.

As in micro input-output analysis, these micro relations can be shown in the form of a matrix which would be very useful at the sectoral and macro levels. The input-output relations for the major sectors in the economy can be utilised to arrive at the gross output requirements of these sectors as a function of final demand. Thus, an assessment could be made as to how much the output of a particular sector contributes in value-added to the economy in comparison to the total

product. Within these interrelations of the various factors of production at the micro level and those at the sectoral and macro levels, the concept of shadow prices may play a vital role in determining a better allocation of economic resources. Using the shadow prices of capital, labour, foreign exchange and other factors would reflect society's preference in allocating national resources in a way which benefits economic development.

Enthoven, A. J. (1973a, p. 30) argued that:

> "Dynamic input-output models reflecting altered economic and technical conditions also form an important element of planning. To be effective, cost inputs and outputs should be put on a standardised basis... Shadow pricing attempts to price the various factors of production as if market equilibrium existed in an economy in order to try to show society's preference for, and relative scarcity of, factors of production. It thus constitutes an important tool in framing a development plan".

The above argument highlights the role of shadow prices in economic analysis. Enthoven also emphasised that accounting data of inputs and outputs should be put on a standardised basis. This point has been stressed by many eminent writers in the accounting field, such as Yu, S.C. (1966, p. 17) who stated the necessity of a unified system of accounting concepts and principles which are equally valid for, and applicable to both micro and macro levels.

Apart from this problem which receives considerable

attention later on, the role of accounting practice and techniques in the development process are discussed in the following section.

4.3 Accounting Techniques in the Development Process

As stated earlier, most developing countries are striving to achieve sustained economic growth through the formulation and execution of development plans. In this context, development planning, programming, budgeting, and follow-up processes at the aggregate level would be appropriate to indicate a clear path to obtaining the planned goals, and thus, economic development. This is, unfortunately, not the whole problem. It is difficult to disassociate the process of economic growth and development from the objectives of the building blocks of an economy, the projects. If the targets of a development project are disassociated from the objectives of economic development, progress in economic growth and development would not be achieved.

However, the essential questions that this section attempts to answer are: what are the significance and function of accounting techniques in the process of economic development at (I) the aggregate stage and (II) the project stage.

4.3.1 The Aggregate Stage

Development planning has been defined by Enthoven (1973, p. 149) as follows:

> "Development planning is the preparatory evaluation and decision-making process of a forward-looking character for an economy, in which alternatives have to be measured, weighed and outlined, and priorities for the use of resources established.... It indicates what is to be achieved and how, where and when to go about it; as such, it will have to set forth the measures to be taken by the State".

Development planning, then, deals with the evaluation of a country's economic policies and establishes priorities for the use of scarce resources available, providing an economic yardstick for the achievement of the objective of sustained economic growth. The process of planning involves a careful cost-benefit assessment of the priority of a particular sector which should support and reinforce the acceleration of the country's economic development. These assessments should not only reflect the entity's individual costs and benefits, but, above all, the real costs and benefits generated from these economic activities to society.

An important prerequisite for effective development planning is the availability of accounting information to assist the development planners in devising their plans. This can best be achieved when the accounting system is geared towards the economic analysis of

economic activities. Yu, S.C. (1957, pp. 264-5) pointed out that the framework of accounting-economics at the national level suggests the approach of analysing economic activities in a purely feasible and understandable way, using a combination of accounting techniques in order to meet the requirements of economic development.

However, the end-product of development planning is the programming process which comprises a set of development projects that are congruent with the objectives of economic development. The major purposes of programming processes are to assure consistency between the objectives of each development project and those of the development plan, and congruence between the amount of available resources and those required for carrying out the development plan.

These processes have in most developing countries taken the from of a national development plan, which is usually designed for five, even ten or more, years into the future, indicating the country's economic growth over the planned time horizon. Al-Saffar, H.R. (1984, p. 44) pointed out that three main features are expected from the plan, namely:

> "1. A schedule of projects considered essential to establish a healthy self-dependent economy with completion time anticipated for each project and the form for implementation.
> 2. Total project cost for each with an

annual financial allocation necessary to cover estimated project cost within the time requirement for completion and,

3. Sectoral breakdown of the programme to indicate both responsibility for completing the projects and the expected economic growth for each sector of the economy".

Cost-benefit analysis plays an important role in assessing the impact of the programme in the country's economic development. The analysis based on the use of alternative programmes by considering various levels of resources or different approaches to the problem (Deniston, O.L. and Rosenstock, I.M. 1972, p. 175). Critical examination of alternatives typically involves an assessment of the cost of resources used and the benefits pertaining to each of the alternatives being compared to attain the stipulated objectives. The goal of cost-benefit analysis is to furnish the most meaningful information regarding the proposed programmes to the decision-maker and to indicate the initial foundations and elements of the budget required for the programme to be implemented and accomplished.

The budgetary process has been conceived as a process for systematically relating expenditure of funds to the accomplishment of planned objectives. It provides a benchmark for evaluating the efficiency of the resources used to attain these objectives. Wildavsky, A. (1964, pp. 3-4) emphasised that a government budget is not solely a device for resource

allocation; it is an expectation, and an aspiration, a strategy, a communications network, or a precedent. He argues that there is a high degree of co-ordination in the process, but that it is informal co-ordination in anticipation of what others are likely to do. The optimal co-ordination of the elements of budgeting may be incorporated in the analysis of their costs and benefits. The costs and benefits of government programmes thus come to be reflected in quantitative forms, which would be the cornerstone of an accurate control system to monitor the realisation of development plan objectives. Monitoring of development plans is necessary to ensure that the objectives of each project are co-ordinated with those of the national development plan and are accomplished within the costs and time estimated. In short, the monitoring process guides economic activities at the macro level toward the desired objective of economic development.

To recapitulate, one must stress the important role of accounting techniques within the process of planning, programming, budgeting, and control of economic activities at the aggregate level, a situation which makes the adoption of PPBS for the economies of developing countries not only desirable but essential. The significant role of PPBS in the government and public sectors has been discussed in chapters two and three respectively. It is sufficient to say here that

PPBS is a integrated system designed to accommodate multiple activities in all sectors in an economy and thus it should direct a developing country on the course to economic development.

4.3.2. The Project Stage

National development plans or investment programmes of a nation would be theoretical exercises without a solid base for project planning and implementation. No development plan can be successful unless the high priority projects, which constitute the cornerstones of the overall plan, are planned and implemented in a way that is consistent with the development objectives and conducive to their fulfilment.

Gittinger, J.P. (1982, p. 3) described projects as the cutting edge of development while Schneider, H. (1975, p. 48) considers them as an application of economic theory. Both writers, indeed, referred to development projects as the practical stage of nation's development programmes. Therefore, the links of an individual project to overall national objectives must be established and maintained throughout the whole project cycle. Hence, accounting information and techniques play an important role in project selection, programming and budgeting, and they are extended further to the monitoring of the project's operational stage in order to appraise the efficiency of its performance.

Project selection should be based, to a large extent, upon numerical indicators of the value of costs and benefits expected to be generated by the project and its alternatives. The role of accounting information in project evaluation and selection is to make specific cost and benefit measurements and to ascertain that all relevant items are incorporated in the project selection model (Enthoven, A.J. 1973, p. 175).

Project analysis and appraisal should begin with a feasibility study, giving comprehensive and systematic evidence of the soundness of the project and its compatibility with the national development plan. The usual first step in the feasibility study is to define the project objectives clearly in order to decide which of the alternatives will best fulfil these. The feasibility study may have to cover all the aspects of analysis, such as economic, financial, technical, etc. This is the stage at which detailed planning, programming, and budgeting of the project should be brought into play so that realistic estimates can be made of how the project might be implemented.

Programming of a proposed project is carried out through the estimations of its costs and benefits for several years to come or, preferably, for its whole lifetime. Budgets, which are commonly regarded as serving the dual functions of planning and control, should be prepared. Budgets are usually assumed to have

a planning role concerned with the co-ordination of activities and the availability and allocation of scarce resources (Amey, L.R. and Eggington, D.A. 1973, p. 451). On the other hand, they can be seen as a comprehensive system of control by reference to discrepancies between standard and actual costs.

The above discussion may serve to highlight the significance of PPBS for the planning and control of economic activities at the project stage. The system displays a detailed economic analysis of alternatives, providing accurate information for project selection, setting up programmes and translating them into detailed budgets which include appropriate measures of performance with feedback for control and to the planning, programming and budgeting processes. Amey, L. R. and Eggington (1973, p. 156) argued that although most applications of PPBS have been in government and government agencies, its principles are equally applicable to the project stage in both private and public sectors. They argued that:

> "PPB is output-and objective-oriented, with main emphasis on resource allocation, based on economic analysis. It seeks to improve the quality of decision-making towards explicit objectives. It is framed in terms of programmes, not traditional organisational subdivisions, and involves a systems approach to management".

The demands on accounting in this context, however,

are to devise planning and control systems and provide accurate information for CBA, which is the mainstay of PPBS. In providing cost-benefit information, variations in the major factors affecting the costs and benefits should be taken into consideration. Comprehensive data on materials, labour, capital, overhead, and the others should be created, anticipating the future behaviour of such items. The absence of such information may cause failure in the project's implementation and follow-up, and as a consequence, weaken the country's economic development.

This view is beginning to be accepted in some developing countries, creating a tendency towards the adoption of an accounting system which is sophisticated enough to cope with their economic problems and generate useful accounting-economic information for the planning and control of both micro and macro levels, and having a stronger role in supporting the decision-makers in their endeavour to accelerate the economic development process. The emphasis is placed on the need for accounting information to be economically realistic and to have a comprehensive standardised content.

4.4 The Need for an Integrated Accounting System

Enthoven (1973a, p. 28) indicates that standardisation in accounting tends to describe economic activities systematically by gathering accounting information into a consolidated accounting model. This would provide a remedy to the problems of deficient and disorganised economic and financial data which exist in developing countries in general. He argued that:

> "A greater degree of standardisation in accounting would be of particular benefit to developing countries....Because of limited natural, financial and human resources, their governments may need to undertake increasingly centralised cost-benefit analysis and to involve themselves, through planning and control systems, in all socio-economic activity....Standardisation generally aims to simplify and unify all aspects of accounting information systems in order to improve the reliability and consistency of information. It involves establishing methodological standards of definition and terminology; criteria for the identification, collection, measurement, and processing of data, and for the layout of accounts and tables; procedures for integrating information into cohesive accounting models; and standards for evaluating and communicating such information".

The above argument draws attention to the problems discussed at the beginning of this chapter regarding the lack of reliable financial information and the inadequacy of the accounting system for the linkage between micro and macro economic levels, leading to confusion in the decision-making and economic policies

of many developing countries.

The recent trend for adopting a uniform accounting system springs from the need of standardised accounting information for planning and control at all levels of an economy by co-ordinating financial accounting with social accounting. A uniform accounting system has many other features which make it desirable, even essential, for developing countries. These are: (3)

1. Uniformity in accounting would allow for greater comparability between the enterprises within a sector, and between them and the enterprises of other sectors. This feature may assist security analysis and investment appraisals, and unify the measurement and evaluation devices for the purposes of planning and control. Moreover, the choice among alternative development projects requires the collection, summary and processing of past, present and future data for cost-benefit calculation where the absence of standardised data leads to faulty conclusions.
2. The system is more appropriate to the needs of social accounting as it provides consolidated and integrated data at micro, sectoral, and macro

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(3) Most of the justifications supported the need of uniform accounting system in developing countries are based upon the arguments provided by: Mueller, G. G. (1967, pp. 109-11), Briston, R. J. and El-Ashker, A. (1981, pp. 24-5), Enthoven, A. J. (1973, pp. 236-7), and Singer, H. W. (1943, pp. 50-1).

levels according to common classification, valuation, and quantification procedures. Statistical processes for national income accounts would also benefit from greater uniformity in accounting.

3. It provides more information for economic policies. The analysis of price and cost regulations, subsidies and cost-benefit of government programmes could be supported by a uniform accounting system which would be more or less a guide to economic analysis.

4. The fourth advantage is the scope for more unified and more rational development of accounting theory. The greater uniformity of accounting methods and procedures would enhance the prestige of accounting theory.

5. Internal and external auditing, monitoring and follow-up processes are greatly facilitated within the environment of a uniform accounting system in which terminology, rules and charts are simple, clear and easy to adhere to.

6. Each economic unit would be enabled to recognise its financial position and efficiency in relation to the others in the same sector. More unified concepts and measurement guidelines would aid managers in tracing deviations of the enterprises from the national development plan, contributing to

a more rational and efficient performance.

7. Budgetary processes at all levels in the economy could also benefit from standardisation in accounting. Better standardised information would aid to the creation of a better and more efficient budgeting system.

8./ Standardisation of accounting principles, rules, and methods would lead to greater co-ordination and better orientation in accounting training and education. This could also facilitate the transfer of personnel to other enterprises without impaired performance. Enthoven, A. J. (1973, p. 237) pointed out that:

> "In developing countries, in particular, the lack of good accounting personnel poses a serious problem, and uniform procedures would facilitate the training process and transfer of knowhow and skills".

This is indeed a considerable problem in many developing countries which suffer from the lack of qualified persons in this field.

9. The adoption of a uniform accounting system in the countries which have community economic benefits, such as the European Economic Community (E.E.C.) and the Arabian Economic Community (A.E.C.), would assist economic integration and lead to greater harmony between their economies through unification

of accounting evaluation methods, principles, rules, and cost systems.

Although the above advantages pertain to the uniform accounting system, there are, however, some arguments voiced against it. The system has been accused of being rigid, unrealistic and unwieldy, though without any strong evidence. Whatever the truth of those arguments, a uniform accounting system actually fulfils the requirement of integration between micro and macro levels, facilitates the purposes of planning and control, providing better data for CBA and other studies related to the acceleration of economic development. These requirements may be incorporated into the discussion of the vital role of this system for both macro and micro economic activities and thus for the economic development of a nation.

4.4.1 Uniform Accounting System for Macro-economics

It was argued at the beginning of this chapter that some developing countries, e.g. Iraq, are striving to achieve sustained economic growth through realization of the objectives of their economic development plans. For this to be done, the need for a comprehensive uniform accounting system capable of supplying the accounting data required by central planners and decision-makers is paramount. The system has to be concerned with the identification, classification,

analysis, measurement, and evaluation of accounting and economic activities and their communication in the form of direct and indirect socio-economic costs and benefits.

An important prerequisite for effective development planning is, therefore, the availability of certain types of information that describe the country's economic performance. The quality of this information depends, to a great extent on the ability of the accounting system used to generate micro accounting data specifically produced for macro-economic purposes. This, indeed, may be considered the main feature of a uniform accounting system. Mueller, G. G. (1967, pp. 97-8) argued that:

> "The importance of uniformly prepared accounting data is acute in the central planning function because (1) any plan is only as good as the data on which it is based and (2) there is a high degree of interdependence among firms and among sectors of any economy when all of their respective activities are governed by a master plan. Therefore, a national uniform plan of accounting or complete uniform accounting is prerequisite to effective central planning".

In view of the above argument, it can be said that a uniform accounting system has a vital role in central planning, in that it incorporates the economic activities of each sector in the economy and reflects the interrelations between them for the monitoring and follow-up of national objectives. The chart of

accounts of the Iraqi uniform accounting system, for example, shows both long and short term financial investments of each sector as follows: (National Centre For Consultancy and Management Development, 1981, p.19).

15 Financial Investment.

151 Long-term.

1511 Socialist Sector.

1512 Co-operative Sector.

1513 Mixed Sector.

1514 Private Sector.

1515 Outside World Sector.

152 Short-term.

1521 Socialist Sector.

1522 Co-operative Sector.

1523 Mixed Sector.

1524 Private Sector.

1525 Outside World Sector.

These accounts represent only a part of the extensive data provided by a uniform accounting system for macro-economic purposes. A value added statement, considered to be a very effective tool in evaluating the performance of an economic unit, sector, and macro activities, is also provided by the system for macro-economic purposes. Furthermore, the Sources and Uses of Fund Statement provides data to the national accounts about changes in capital formation.

The vital role of an accounting system for macro-economics, and thus for economic development is portrayed through the dynamic idea of the input-output table which shows the interrelationship between the business enterprises sector, the household sector, the government sector, and the rest of the world sector. The accounting information derived from this table is fairly comprehensive, reliable and economically relevant. CBA of a government programme derives considerable benefit from the relationships between inputs and outputs to obtain the coefficient matrices which facilitate the calculation of shadow prices in order to reflect the replacement value under equilibrium conditions, relying upon current accountancy information (Enthoven, A.J. 1969a, p.28). Shadow prices are particularly necessary when prices do not reflect real scarcities. Their use in CBA for economic development could create a sounder basis of economic reasoning with which to influence a decision-making.

However, the contribution of a uniform accounting system in facilitating the construction of the input-output table could be revealed through additional macro data covering intermediate inputs, which reflect the value of intermediate products and services provided by the economic sectors, and by sectoral classification of the economic units transactions. In addition, the system requires that all transactions are recorded on

an accrual basis which necessitates the distinction between current and capital expenditures, is more easily linked with the social accounts and better serves managerial and economic planning purposes (Enthoven, A. J. 1973, p.43).

It can be said therefore, that the contribution of a uniform accounting system to satisfy the information needs for macro-economic purposes is indispensable to the acceleration of national economic development.

4.4.2 Uniform Accounting System for Micro-economics

In enterprise accounting, a uniform accounting system is intended to unify the underlying practices and classification of accounts in the form of a chart of accounts, and provides a complete plan or system which covers uniform terminology and standardised methods and practices for identifying, measuring, and processing eco-financial data (Enthoven, A. J. 1973, p.242). Such a model gives accountancy greater precision, makes it more systematic, and tends to perfect the accounting discipline. A uniform plan of accounts ensures that transactions in all enterprises would be recorded according to the same scheme of classification, a situation which facilitates planning, control, and decision-making at both micro and macro levels (Jaruga, A. A. 1972, p.29).

A uniform chart of accounts specifies the categories of classification which will facilitate budget construction, project appraisal and investment decisions. Such a chart usually contains either nine (1-9) or ten (0-9) main categories, each of which is again subdivided with provision for further subdivision. The Egyptian uniform chart of accounts, for example, consists of nine main headings (as shown in table 4.1). The three main categories within the chart represent balance sheet accounts, operating and revenue accounts, and analysis of uses of resources (or control accounts). The classifications of these accounts are necessary for the economic construction of any economic unit regardless of the nature of its activity, whether it be agricultural, industrial, or commercial (Radwan, A. A. 1977, p.26).

Balance Sheet Accounts reflect the financial position of an enterprise, as they are made up of its assets and liabilities. Assets are grouped according to their financial sources, each group closely corresponding to the appropriate group of liabilities which facilitates the analysis of the use of funds and credits. Fixed assets are shown separately from their depreciations in order to satisfy the needs of cost allocation which is extremely important to cost-benefit calculation.

Table 4.1

Egyptian Uniform Chart of Accounts

Balance Sheet Accounts		Operating & Revenue Accounts		Analysis of Uses of Resources				
1 Assets	2 Liabilities	3 Use of Resources	4 Resources	5 Production Centres Control	6 Production Service Centres Control	7 Marketing Service Centres Control	8 Admin & Finance Service Centres Control	9 Capital trans-action Centres Control
11 Fixed Assets	21 Capital	31 Wages	41 Revenues from current operations	531 Wages	631 Wages	731 Wages	831 Wages	931 Wages
12 Incompleted projects	22 Reserves & forwarded surplus	32 Commodity Requirements	42 Subsidies	532 Commodity requirement	632 Commodity requirement	732 Commodity requirement	832 Commodity requirement	932 Commodity requirement
13 Inventory	23 Allowances	33 Service acquired	43 Revenues from securities	533 Service acquired	633 Service acquired	733 Service acquired	833 Service acquired	933 Service acquired
14 Long-term lending	24 Long-term loan	34 Finished goods purchased for sale	44 Transferred revenues	534 Finished goods purchased for sale	-	-	-	-
15 Financial investment	25 Credit Banks	35 Current trans-ferred expen-ses	45 -	535 Current transfer expenses	635 Current transfer expenses	735 Current transfer expenses	835 Current transfer expenses	935 Current transfer expenses
16 Debitors	26 Creditors	36 Current transfer	-	-	-	-	-	-
17 Misc. Debtor Accounts	27 Misc. Creditor Accounts	-	-	-	-	-	-	-
18 Cash in hand and at bank	28 Results of the year							

Source: Briston, R.J. & El-Ashker, A. 1981, P.11.

Operating and Revenue Accounts provide information on a profit or surplus proceeding from normal operations, and show income available for distribution. As a consequence, these accounts facilitate the preparation of value added in enterprises, and hence at macro level.

Analysis of Uses of Resources represents control accounts which monitor and analyse the uses of resources in cost centres. Their purpose is to prepare the Production and Trading Account and the Profit and Loss Account which serve both financial and managerial purposes. Cost Centres comprise five categories, namely the Production Centres Control, Production Service Centres Control, Marketing Service Centres Control, Administrative and Finance Services Centres Control, and Capital Transaction Centres Control. The information provided from these cost centres and their sub-classes would facilitate the preparation of the Current Operations Account which provides the data required by the social accountant at the macro level for national purposes.

However, it should be noted that the application of the uniform accounting system in Egypt allows the accountant of an enterprise scope for further classification within each category according to the requirements of the enterprise. Radwan, A. A. (1977, p.27) argued that the enterprises have a right to make

further subdivisions within the categories, such as 223- Miscellaneous reserves and/or 235 - Miscellaneous provisions, according to their prerequisites, a situation which helps prevent imprecision in their accounting treatment and makes the accounting system more flexible.

In addition, it is worth stressing that the distinction between assets, their set-up costs, and their depreciation made by the uniform accounting system has a great significance for monitoring, control, and decision-making purposes and will tend to benefit the analysis and appraisal of a development project. Better analysis of existing projects and programmes will be possible, which in turn could result in more effective decision-making.

As far as project appraisal in developing countries is concerned, it is necessary to examine the contribution of a uniform accounting system in assisting CBA of development programmes and projects as a basis for a country's economic development. It is well known that there is, in many developing countries, a tendency towards central planning and an increasing public sector, aiming to control the country's economy in such a way as to assist economic development. CBA developed as a means of establishing criteria for public sector investment appraisal in terms of the net social benefits accruing from the investment (Jones, R. and

Pendlebury, M. 1984, p.106).

This situation creates a great demand for effective, comprehensive, and standardised accounting-economic information which is economically meaningful and useful, reflecting socio-economic relationships, and geared toward the objectives of economic development (Enthoven, A. J. 1969a, p.24). The main requirement of the CBA calculation is that the information and evaluations should contain past, present, and future data modified for economic and price changes, a knowledge of which is important to assess the social costs and benefits generated from a development project. For information to be effective for decision-making on project level, future costs and benefits have to be measured, assessed and allocated on an economically justifiable basis. The adoption of a uniform accounting system, therefore, would alleviate the problem of deficient and disorganised economic and financial data which in its turn would contribute to more accurate studies of feasibility, shadow prices, evaluation, and comparability, and thus would reflect a sound insight into the future costs and benefits to society.

Therefore, it is plausible to argue that the development process in developing countries poses a great demand for an effective, comprehensive, and standardised accounting system in order to serve both macro and micro-economic purposes and increase the

effectiveness of CBA for economic development.

4.5 The Road Ahead to Economic Development

The stimulation of economic development in developing countries is hampered by a number of serious inhibiting factors which tend to hold up the acceleration of social advancement. Concentration on traditional accounting systems and techniques, for example, may disrupt the integration of the accounting and economic disciplines. An improved accounting system that will serve both macro and micro-economic purposes through the provision of effective and useful information, and which reflects socio-economic relationships, must be sought. Linowes, D. F. (1968, p.38) argued that:

> "It is the discipline of accounting which collects, tabulates and evaluates the data which permit both an understanding of the results of past activity and a projection of future possibilities. With this information, both business and government are enabled to make decisions about which projects should be curtailed and which expanded to make the best possible use of available money, materials, and manpower".

Therefore, it is plausible to argue that the development process at both macro and micro levels requires accounting information modified for economic needs, and with a comprehensive standardised content, necessitating a trend in accounting towards economic

analysis. Thus, a great demand is created for integration between the accounting and economic disciplines which have much in common as regards their role in economic development. Accounting and economics are, therefore, considered as complementary disciplines, both drawing their raw material from much the same source. Their separation would be deplored because many of the basic concepts of economics are, in fact, derived from accounting practice, and many accounting practices have been devised in an attempt to answer what are essentially economic questions (Boulding, K. E. 1962, p.44). If accounting and economics are to be divorced then there is little chance of success for advanced techniques, such as CBA, and consequently it would be very difficult to sustain national economic growth.

If accounting is to serve the economic development process of a developing country, it is essential to have reliable information which is economically meaningful, realistic, and useful for cost-benefit calculation, planning, control, decision-making, and supports the integration between macro and micro-economic activities. Accordingly, a great demand has been voiced, in some developing countries in particular, for adoption of an integrated accounting system which facilitates the provision of the necessary accounting information for planning, control, and decision-making at all levels of the economy. Adherence to a uniform accounting system

as a harmonised approach to remedy the problem of deficient and disorganised accounting - economic data, which exists in most developing countries, would be of the greatest value in this connection. The need for such a system stems from the benefits derived from using its reliable information as a basis for sound decision-making at the enterprise level in order to improve project appraisal and management, and for planning, control, and evaluating economic policies and performance at the aggregate level.

However, the question of whether such an accounting system by itself would accomplish its objectives and remedy the problems of deficient and disorganised financial and management data which exist in developing countries, such as Iraq, will be discussed in the following chapters. The processes of planning, control, and decision-making at all levels of the economy will be examined and assessed in terms of cost-benefit relationships with special reference to the agricultural sector, aiming practically to point the road ahead to the economic development of Iraq.

CHAPTER FIVE

ACCOUNTING, AUDITING AND PLANNING IN IRAQ

5.1 Introduction

Since the main purpose of this thesis is to examine the project evaluation techniques used in the Iraqi public sector, it is necessary to examine the Accounting, Auditing and Planning systems in Iraq.

This chapter will give a brief accounting and economic retrospect and will then discuss the recent development of accounting systems in Iraq, focussing on governmental accounting and the uniform accounting system.

Auditing history and the role and the objectives of the Board of Supreme Audit will be described in detail, focussing on Auditing Law No. 194 of 1980.

A discussion of the process of planning and project preparation in Iraq will be a central feature of this chapter and will provide the key to understanding the case studies in the next chapters.

Finally, some unanswered questions concerning accounting, auditing and planning in Iraq are discussed.

5.2 Accounting Development and Economic Background

5.2.1 A Brief Accounting Retrospect

Iraq, "the land between two rivers" as implied by its Greek name "Mesopotamia", can rightly feel proud of its historical past. From the earliest settlement of Sumerians, around 1500 B.C., each successive settlement until the 11th century A.D. contributed something unique to World civilisation. Writing was discovered there and later a large number of business records were found. Most, K.S. (1982, p.31) argued that:

> "Scholars long believed that writing developed from graphic representations of objects - a sheep, a loaf of bread etc. Bone artifacts bearing incised markings have been found, which date from palaesolithic times 12,000 to 30,000 years ago. Later clay tablets bearing similar representations show use of pictographs in the Middle East. These pictographs resemble the earliest cuneiform writing of the Neo-Sumerian and old Babylonian periods".

The earliest known code of laws was written in Iraq in order to organise society. Some of these laws,which regulated business between merchants, have similarities with the current commercial laws in Iraq.

The golden age in Iraq was under the patronage of great Abbasiad Caliphs during the 9th and 11th century A.D. The foundation for most of the modern sciences was developed from the ancient thoughts and experiences - Greek, Turkish and Indian which were assimilated and

synthesised in Iraq. The "Diwan Al-Mall" was established to organise financial affairs of the State (Al-Ahmady, M. 1969). Financial records were used for State revenues and expenses and were entered on separate sheets.

In the 13th century, Iraq was overrun by Mongols who destroyed the Iraqi civilisation. In the 16th century, Iraq was conquered by the Turks, who ruled it until the First World War. During that period, the first university was founded and the first engineering structures and designs were developed.

From 1920 until 1932, Iraq was under British Mandate. During this period, there was a turning point in accounting thought because many foreign firms, particularly British firms, invested in Iraq. The popular accounting method in use at that time was called "Blangow" and was similar to single-entry book-keeping. Accountancy development was highly influenced by these foreign companies. Scott ,G. (1970, p.93) argued that:

> "The United Kingdom has been very effective in exporting accounting expertise to trading partners and colonies. British accounting influence has also followed British interests in Africa, The Middle East and many parts of South-east Asia. British accounting certainly had more influence throughout the World prior to World War Two than did the accounting of any other nation".

Training by foreign companies had perhaps the greatest impact on accounting development in Iraq. Many

accountants gained experience when they were employed and trained by foreign companies in the skill of Anglo-American accounting (Seidler, L. J. 1969, p.40).

Legislation and practice often influence each other in accounting development. In 1922, the first State Accounting System (S.A.S.) was established to adopt double-entry book-keeping in the government offices. In 1940 was founded the first commercial secondary school which played an important role in changing the accounting method from the single-entry (or "Blangow") to the double-entry method in the private sector (Homadi, M.J. 1980, p.5).

In 1942, the "Government Accountancy Law" (G.A.L.) was introduced and applied in all the ministries headquarters and governmental non-profit making agencies. Records were to be kept on the cash basis by each administration (Razouki, H. 1980, p.35). Although this Law (No.28) is still in use in some non-profit making agencies, it proved irrelevant to the needs which followed the socialist transformation of the country.

At the beginning of the 1970's, there was a swing towards the adoption of the uniform accounting system, the development of which will be described in a later section.

5.2.2 A Brief Economic Retrospect

The World Bank (1979, p.62) pointed out that:

> "In most developing countries, governments have played a crucial role in initiating and supporting the early stages of industrialisation. Government investments in transport infrastructure and public utilities have generated substantial demands for equipment, construction materials and services which have created significant opportunities for local industrial expansion, even though demand was initially met from abroad".

Iraq is one of the developing countries situated in South-west Asia, bordered to the west by Syria and Jordan, to the south by Saudi Arabia and Kuwait, to the east by Iran and the north by Turkey. In 1980, Iraq, which is 438,445 square kilometers in area, had population of more than 13.2 million (Revolution and Development in Iraq, 1980).

Iraq's rich supplies of oil and natural gas give it an international position of considerable importance. In 1969, Iraq's oil production accounted for 10.2% of the total output of the Middle East Countries and 3.6% of the total World production (Oil Ministry 1972). Iraq is ranked third after Saudi Arabia and Kuwait in the Middle East and seventh in the World after the United States, Soviet Union, Venezuela, Libya, and the Middle Eastern Countries referred to above.

The record of economic development falls into three phases: before the revolution of July 14, 1958, from 1958 to 1968 and from 1968 to the present. The dividing

lines between these periods are both political and economic.

The Iraqi economic structure prior to 1958, because of its past, was weak, dependent and poor. Agriculture suffered from feudal structures and no modern industry of any significance existed. Most of the 22,460 enterprises in existence at that time could be described as workshops, whilst 45% were one man businesses, and 53% employed less than five workers (Middle East Yearbook, 1980, p.138). In general, economic conditions were reflected in the structure of foreign trade. More than 50% of exports were non-oil and consisted of grain, pulses and dates, while consumer goods accounted for nearly 70% of total imports. Projects were selected without the use of modern sophisticated techniques, feasibility studies or project evaluation methods, and overall social and economic objectives were never made clear.

In 1950, a Development Board (D.B.) was introduced in accordance with Law No.33 to undertake the construction of a number of development projects. The board consisted of eight members: the Prime Minister (as Chairman) and the Finance Minister, and six members who were specialists in economics, finance and irrigation. The Development Board had full autonomy in respect of finance and administration.

The first 5-year plan was for the period 1951 - 1955 with a total estimated expenditure of I.D 68.674 million. In 1953, the Development Ministry was established and the Development Minister became the ninth member of the Board (Hashim, J. 1975). The Development Board and the Ministry of Development were jointly responsible for formulating and implementing the development programmes, though projects were not adequately correlated nor were they worked out within an overall development plan.

On 14 July 1958, the revolution ended the Monarchy and established the Republic of Iraq, after which a change in orientation occurred, with development being seen as a social process. The Ministry of Development was replaced (Law No.74 of 1959) by a Ministry of Planning, and the Development Board was replaced by the Economic Planning Board (E.P.B.), which was chaired by the Prime Minister and consisted of the Ministers of Planning, Finance, Industry, Land Reform, Agriculture, Transport, Public Works and Social Affairs. The Ministry of Planning and the Economic Planning Board were concerned with three main areas: agrarian reform, increase in oil production, and the acceleration of industrialisation (Kachachi, S. 1976,P.76). The aim of the provisional Economic Plan was to alter radically the principles of the previous regime's plan. A provisional plan was drawn up in 1959/60 - 1961/62 to give the

Economic Planning Board sufficient time to work out a plan which was more detailed and efficient. The actual investment allocations of the provisional plan amounted to I.D. 323.7 million, with expenditure totalling I.D. 108.4 million (See Table 5.1).

Table 5.1

Actual Allocations and Expenditure of the Provisional Economic Plan

1959/60 - 1961/62

Sector	Actual Allocations I.D. Million (1)	%	Actual Expenditure I.D.Million (2)	%	Rate of Imple-Mentation 2/1
Agriculture	43.9	13.6	22.5	20.8	51.2
Industry	32.8	10.1	11.9	11.0	36.3
Transport & Communication	84.9	26.2	21.9	19.7	25.2
Building & Services	152.1	47.0	52.6	48.5	34.6
Other project	10.0	3.1	-	-	-
Total	323.7	100.0	108.4	100.0	33.5

Source for these figures being the Ministry of Planning, Economic Department, Annual Investment and Expenditure Budget.

A Steering Committee was formed with the Minister of Planning as chairman and four other full-time members. Its aim was to formulate the 5-year plans and the relevant annual investment plans and also to

supervise the co-ordination between different financial policies as well as to follow up the investment plans. The Detailed Economic Plan (1961 - 1965) was drawn up and gave priority to the industrial sector (Law No. 70 of 1961).

With reference to industry, the Department of Industrial Planning was formed in order to study the economy, propose new projects, prepare feasibility studies and formulate a sectoral plan, but in practice it fell short of these aims.

In 1964, the government nationalised all commercial banks, insurance companies and all large to medium-sized companies in order to raise the public sector share in total investment to 78% (Ministry of Industry 1978).

However, the economy had suffered considerably from the fits and starts of the 1960's, particularly in the agricultural sector, with poor planning, and the haphazard application of investment project analysis, the latter being the result of weak administration due to the shortage of qualified specialists capable of designing and appraising projects and lack of the data required for investment project analysis. If there had been better projects analysis, a proper assessment of costs and benefits could have led to more satisfactory resource allocation.

In the history of the modern Iraqi economy, 1968 could be considered as the beginning of a new era. The

government attempted to adopt comprehensive planning to promote the national economy. They promoted the agricultural and industrial sector and tried to build a solid industrial base in order to achieve industrialisation, economic and social development. The Planning Board (P.B.) was set up in 1968, including the President of the Republic and the Ministers of Planning, Finance, Economics, Industry, Agriculture, Agrarian Reform, Irrigation, Works and Housing, Education, Higher Education and Scientific Research and also the Governor of the Central Bank. The Board also included 5 experts as full-time members (Khaddure, M. 1978). The Planning Board's most important branch is the Steering Committee which serves as a body of experts who prepare projects for approval by the Planning Board and direct and supervise the work of various technical committees.

In April 1970, the Planning Board issued the National Development Plan 1970-1974, of which the main objectives were to increase the national income at an annual rate of growth of 7.1% , to encourage uniform development within the country, to ensure a distribution of planned projects throughout the provinces and to develop the commodity sector, particularly the agricultural, industrial and minerals sectors (Kachachi, S.1976, p.21). In November 1976, the National Development Plan 1976 - 1980 was formulated. The main objectives of the plan were to expand the public

sector in agriculture, to strengthen the industrial sector as a base for the national economy (see Table 5.2), to increase the social services (e.g. health, education, trade, transportation etc.) and to establish control by the central government over foreign and domestic trade.

As the public sector is the leading sector in the industrialisation process in Iraq, expansion could be accomplished by developing the economic structure in that sector. The plan emphasised the necessity to convert part of the private sector to mixed ownership.

Planning, project preparation, and investment decisions in Iraq are described in detail in Section 5.5.

5.3 Recent Development of Accounting in Iraq

Until 1970, the Iraqi public sector applied various accounting systems. The State Accountancy Administration at the Ministry of Finance was responsible for the central control of government accounting. Some enterprises applied Government Accountancy Law No. 28, while others followed the private companies' system or their own accounting system, for example, the system used in the State Organisation for Minerals. These various accounting systems provided planners with confused accounting information, and the use of a uniform accounting system

Table 5.2

Distribution of Allocated Investment

in million Iraqi Dinars

Sectors	1974	1975	1976	1977	1976 - 1980 Public	Private	Total	% of Total	1981
Agriculture	190	208	268	390	2,374	180	2,554	18.7	689
Industry	225	448	709	966	4,000	360	4,360	32.0	1,378
Transport	120	166	242	352	2,200	180	2,380	17.5	1,287
Construction	175	188	213	348	1,400	910	2,310	16.8	1,886
Other	459	66	61	302	2,026	---	2,026	14.8	1,496
	1,169	1,076	1,494	2,358	12,000	1,630	13,630	100.00	6,736

Source: Tim Niblock, Iraq: The Contemporary State, Croom Helm Ltd, London, 1982, P.237.

in Iraq could therefore have had important advantages.

5.3.1 The Government Accounting System (G.A.S.)

As previously mentioned, the Government Accounting System is applied in all the Ministries' headquarters and governmental non-profit-making agencies in accordance with the Ministry of Finance regulations which the Ministry have the right to amend. The main features of the Government Accounting System are:

1 It does not distinguish between capital and current expenditure.

2 It uses the cash basis rather than the accrual basis.

3 Fixed assets are completely ignored in the System.

4 For control purposes, the System compares accumulated expenses after each transaction with the allowance in the accounts.

5 It does not take into consideration depreciation or any other non-monetary transaction.

6 There is a standard or uniform book-keeping system of record classification and coding.

7 The system was originally applied in central governmental accounting units with the ordinary budget current expenditure.(1)

8 The information provided by the System is based on historical data (not on economic data).

Despite the recommendations of the United Nations (U.N.) in 1969 for the use of the accrual basis in the Government Accounting System, and for the need to distinguish between current and capital expenditure, no modifications were made to the system. Enthoven, A.J. (1973, p.43) argued that:

> "The accrual basis of recording revenue and expenditure involves the recognition of revenue in the period earned, and expenditure at the time the liabilities are incurred. The accrual basis can be more easily linked with the social accounts and serves better managerial and economic planning purposes; it is able to reflect more accurately and comprehensively the economic effects of government activities."

On p.51 he then argued that:

> "Distinction between current and capital items - preferably on the accrual basis - in the accounting system is necessary to show the significance of the expenditure, and will facilitate the management of government operations. The capital account can also be used to distinguish between re-investment and new investment, or preferably gross and net investment involving adequate reflection of depreciation and its annual charge to the current accounts"

The Government Accounting System had to develop in a way that would permit effective administrative control of funds and operations and provide financial data useful for economic analysis. The data obtained from the System would only be helpful in preparing the

---

(1) Most of the government accounting units, particularly in the industrial and agricultural sectors have two budgets, the ordinary budget for current expenditure and a Development budget for carrying out the National Development Plan.

general budget if it was classified in the same way. However, the System became irrelevant in view of the socialist transformation of the country. This point was recognised by the Ministry of Finance, which made some modifications to the system, and put them into effect from the beginning of 1976. These modifications were called the "Decentralised System", and concentrated on the financial independence of enterprises from the Treasury. It recommended that each enterprise should open a cheque account with the Treasury (Razouki, H. 1980, p.21). In fact, there were no significant changes and the system suffered from many weaknesses. This may be the reason why the Iraqi public sector resorted to the Uniform Accounting System.

5.3.2 The Uniform Accounting System (U.A.S.)

The original ideas of the Iraqi Uniform Accounting System derived from the Egyptian Uniform Accounting System which was promoted by the republican Law No. 4723 in 1966. Until recently the application of the Iraqi Uniform Accounting System has been supervised by the Central Organisation of Accountancy in Egypt, and, indeed, the whole Iraqi economic system has been strongly influenced by the Egyptian systems.

Townsend,J. (1982, p.268,P.47) argued that:

> "The Egyptian influence was introduced into Iraq at the time of the 1964 nationalisation of Industry; the Iraqi industrial sector was

> reorganised at that time along the lines of the Egyptian public sector industries, complete with massive bureaucratic controls. It was said at the time of the 1964 nationalisation that Iraqi industrial entrepreneurs were inefficient, dishonest and self-seeking, putting their own interests before those of the nation".

The Egyptian Uniform Accounting System is designed to serve accounting units at the micro level and to satisfy social accounting requirements, e.g. it distinguishes between capital investment and capital transfer, between foreign and domestic sources and applications of funds.

The first attempt in Iraq, at uniformity in accounting was put into practice in April 1970 by the State Trade Organization (S.T.O.) in the Ministry of Commerce,using a system furnished by M. Al-Harouni at the Arabic Centre of Management Research in Cairo. The main features of the State Trade Organization System were as follows:

1 The system adopted the accrual basis in its transactions.

2 It depended on the weighted average method for evaluating assets and inventories.

3 It adopted the straight line method for depreciation, using 10% as the writing-down rate.

4 It unified the double-entry books, trial balance, profit and loss accounts, balance sheets, receivable vouchers, payments and invoices in all

the State Trade Organization affiliated enterprises.

5 It unified accounting principles, standards and terminology.

6 It classified the accounts in the chart of accounts into six groups as follows:

(a) Assets

(b) Liabilities

(c) Service and Production Centre

(d) Cost of Sales

(e) Current Expenditure and Current Revenue

(f) Profits Appropriation

Each of these groups is divided into sub-groups and the classes of the groups are then divided into sub-classes according to the nature of the transaction.

The second attempt at uniformity was put into practice in April 1972 by the State Company of Woollen Textiles in the State Organisation of Textiles (S.O.T.) at the Ministry of Industry. In 1974, the system was applied to all companies in the State Organisation of Textiles, and again the system was derived from the Egyptian method (Msa'ad, M. A. 1980, p.143), being prepared by the representative committee of the Statistics and Accounts Code of the Industrial Development Centre in Cairo. Al-Mostawfi, S. one of the Iraqi committee members, was also the financial planning and control manager at the State Organisation

of Textiles.

The chart of the system is divided into 9 groups as follows:(Al-Mostawfi,S. & Al-Hayali, A. 1978, pp.67-70).

1	Assets .	)
		) These represent Balance Sheet
2	Equities.	) Accounts.
3	Use of resources.	)
		) These represent Operating and
4	Sources.	) Result Accounts.
5	Production centre control.	)
		)
6	Production service centre control.	) These represent
		) the Analysis of
7	Marketing service centre control.	) Usage Accounts.
		)
8	Administration of service centre control.	)
		)
9	Capital transaction centre control.	)

The above groups are divided into sub-groups and then divided into sub-classes as follows:

1 Assets

- 11 Fixed Assets
- 12 Projects under construction
- 13 Inventories
  - 131 Commodities required
    - 1311 Raw materials store
    - 1312 Fuel store
    - 1313 Spare parts store

The chart of accounts classified "The Analysis of Usage Accounts" into 5 cost centres for cost accounting purposes. Each group can be analysed as follows:

Code No.	Accounts	Centres				
		5	6	7	8	9
31	Wages	531	631	731	831	931
32	Commodities required	532	632	732	832	932
33	Services required	533	633	733	833	933
34	Purchases for sale	534	--	--	--	--
35	Current transfer expenses	535	635	735	835	935

Each of these expenditures is analysed according to the costing system used in the enterprise.

The main uses for cost accounting in Iraq are for measuring the efficiency of a enterprise and for the pricing decision. In general, the costing systems used in the Iraqi public sector are inadequate to meet the needs of accounting development, for even the Iraqi Uniform Accounting System has given little attention to it, conferring on enterprises the right to adopt any suitable costing system.

However, the system has dealt with some important points. It has distinguished between the operating assets and assets under construction; it has treated set-up costs and research costs as a part of fixed assets; and has adopted the accrual basis method, using the straight-line method for depreciation. Generally, the system can be considered as a step forward in accounting development in Iraq.

5.4 Auditing Development in Iraq

Under Law No.17 of 1927, the first Department of Auditing and Control was established in the Ministry of Finance to control public funds. This Department, in addition to its internal tasks in the Ministry, was given the authority to examine the accounts of private firms, as a safeguard against tax evasion.

In the public sector, a chartered accountant had to be appointed by the Board of Directors to audit an enterprise's or an organisation's accounts. The audit report which had to be submitted to the Board or to the General Managers of the organisation, usually emphasised that proper books of accounts had been kept, that the balance sheet and profit and loss accounts agreed with the books, and that it was a true balance sheet and representing the actual financial position with no illegalities (Companies Law No. 31 of 1957).

The Department was expanded by Law No. 45 of 1935, to be called the General Control Board and to act as financial controller for the public sector. In practice, this Board had no ability to audit and control all of the public sector, despite it being a very small sector, for it had no authority, being under the supervision and control of the Ministry of Finance. Other similar monetary bodies were established in the Government Sector. These bodies were:

1 The Ministry of Finance: By Law No. 43 of 1928, the

Financial Investigation Office was established for financial control in the Government Sector. This office was annulled in 1975 (Law No. 106) to avoid the duplication of financial supervision.

2 The Ministry of the Interior: The Administrative Searching Board was established by Law No. 54 of 1936. The function of this Board was to verify financial contracts. The Board was until recently, influential.

3 The Ministry of Planning: More recently, the National Development Plan Law No.70 of 1970 was required to establish a Directorate of Planning and Investigation in each state organization to ensure that planned expenses budgets were applied correctly.

However, the role of the Board remained poor and weak until the establishment of the Board of Supreme Audit (B.S.A) by Law No. 42 of 1968 to satisfy the requirements of the socialist system to carry through extensive national development plans. The B.S.A. was responsible for auditing the accounts of enterprises and organisations in the socialist and mixed sector, and was given authority to submit proposals for new required legislation in the accounting field, when they thought it necessary to bring practice into line with modern standards (Ameen,S.M. 1979, p.18).

Article number 12 of the Law states that the Board

carries the responsibility for auditing the accounts of the following sectors (Al-Hadethi, J. 1980, p.49):

1 The Ministries, Presidency of the Republican Bureau and the Prime Minister's Office.

2 The Courthouse and Court Offices.

3 All enterprises, organizations, banks, unions, Guilds and corporations.

The Board was not only authorised to audit their accounts but to give them advice and recommendations to improve their accounting systems. Because it suffered from staff shortage and inefficiency, it was authorised to establish a post-graduate course in auditing and financial control, the course being under the supervision of both the B.S.A. and the University of Baghdad. Within two years the graduates qualified as chartered accountants. This may be considered the turning point in Iraqi auditing history because it freed Iraqi auditing from the domination of foreign institutes.

Table 5.3 illustrates the numbers of employees and the expense budgets during the period from 1958-1978.

In 1968 when Law No. 42 was issued, the B.S.A. was separated from the Ministry of Finance and was linked directly with the Revolutionary Command Council (R.C.C.) This increased its influence and gave more importance to its decisions. The B.S.A. acted as an external

Table 5.3

The Growth in the B.S.A. During the Period from 1958 - 1978

Year	No. of Employees	Expenses Budgets I.D.	Growth Percentage	
1958	48	44,100	---	---
1968	144	90,000	300%	200%
1978	616	1,226,000	1,300%	2,780%

Source : Al-Hadethi , J. 1980, P.55 .

auditor and submitted its report to the General Manager, to the Board of Directors of the Enterprise or to the R.C.C., if it included a serious matter.

Internal auditing in the socialist sector may come under various names such as auditing department, search department, financial monitoring department and planning and financial monitoring department. Whatever it is called, internal auditing is under the supervision and control of an enterprise manager and is linked to the auditing department in the related Ministry. It is at the same time responsible to the B.S.A.

Due to the massive growth in the Iraqi economy and hence the ambitious national economic plans, particularly in later years, the B.S.A. received more attention through Law No. 194 of 1980, which gave the B.S.A's President ministerial status ,and required the B.S.A. to submit an annual report on the socialist

sector to the R.C.C. and the President of the Republic to show the financial and economic position of that sector. The Law laid down the objectives and tasks of the B.S.A. as follows: (B.S.A. Law No. 194 of 1980, Article No. 2).

1 To evaluate the financial and economic plans according to the objectives of the Central Government.

2 To ensure that all the financial and economic laws and systems are applied satisfactorily.

3 To disclose the financial position of agencies which are under its jurisdiction.

4 To audit the efficiency and performance of public projects to ensure that resources are used in the best manner.

5 To give recommendations and advice to the government agencies for developing their accountancy and administrative systems.

The organisational structure of the B.S.A. has been developed to include the following sections (See Figure 5.1) :

1 The president of the B.S.A. has ministerial authority. The President's office includes the secretary's department and the office administrative and technical affairs.

2 The Financial Control Board

3 The Vice-President's office (Two Vice-Presidents).

4 The Auditing and Control Section. This section contains the following 9 groups. The head of each group must be a certified public accountant.

A - The group of the financial and planning sector.

B - The group of the central and autonomy sector.

C - The group of the education and culture sector.

D - The group of the transportation and services sector.

E - The group of the building and construction sector.

F - The group of the oil sector.

G - The group of the agricultural sector.

H - The group of the industrial sector.

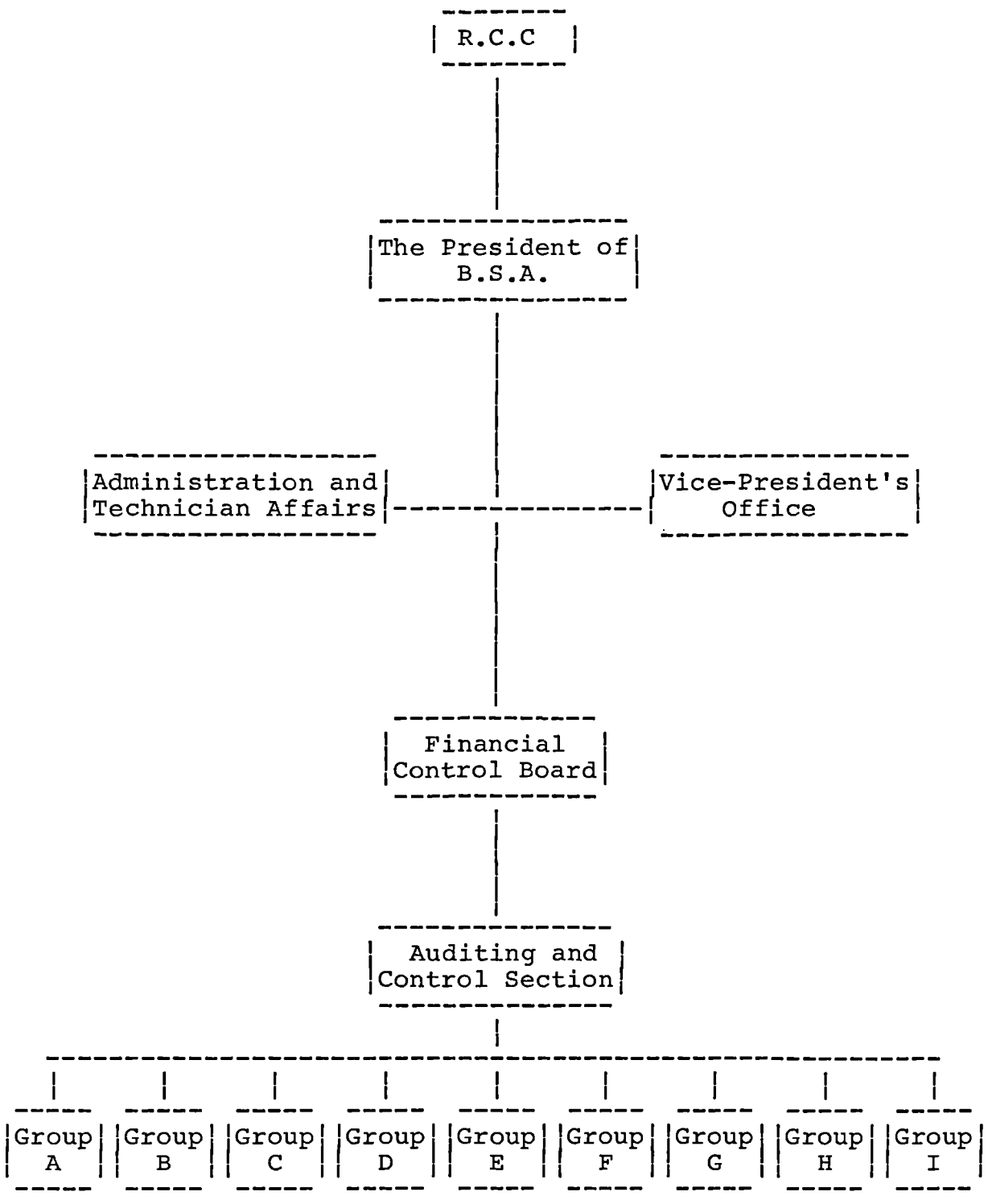
I - The group of the commercial sector.

In practice, the B.S.A. concentrates on financial auditing and ignores the other tasks mentioned in Article No. 2. The reasons behind this (2) are that, until recently, the B.S.A. suffered from staff shortage on one hand, and the rapid growth of the socialist sector and the rapid pace of development of the Iraqi economy on the other hand. Thus the B.S.A. has had to make the same average growth as the socialist sector by increasing the number of employees in line with the economic development in order to carry out its duties efficiently.

(2) This analysis is derived from my interview with the Vice-President of the B.S.A. during my second visit to Iraq for data collection.

Figure 5.1

The Organisation Structure of the B.S.A.



As far as the auditing profession in Iraq is concerned, the private accounting firms have no role in advancing accounting practice and procedures. The private accounting firms are mainly concerned with the annual financial audit of the accounts of small business enterprises and companies for tax purposes, and to ensure that there is compatibility between the figure of costs shown in the profit and loss account and the status of the company concerned.

However, the Iraqi Accountants and Auditors Association which was established by Act. No. 185 of 1968 is suggesting rules for organising the accounting and auditing profession in the private sector. This Association is greatly influenced by the Ministry of Finance, whose Vice-Minister is president of the Association.

5.5 Planning Process and Project Preparation in Iraq

Salmonson, R. (1969, p.49) argued that:

> "Yet all societies desire knowledge of the effort expended and the accomplishments secured where economic resources are employed. If accounting is to provide such measurements, it would seem that it cannot be completely dissimilar among societies. And not all entities have legal title to the resources they employ, so the measurement of effort expended may be incomplete if only legally owned resources are included".

The above concept may suit socialist economies such

as Iraq. If resources are fully employed by central government and if the planning process is running properly, the future output of investment projects should be higher than would otherwise be possible.

If one accepts the assumption that the economic welfare of a nation is dependent, in part, on the quality of the projects invested in, then it is important to examine the planning and project selection processes in Iraq. Before discussing how the planning process works in Iraq, it is necessary to describe the institutional structure of the central planning system.

5.5.1 The Central Planning System in Iraq

The most senior and powerful committee in Iraq is the R.C.C.,to which the Council of Ministers is subservient. The Budget Committee and the Planning Board (the latter is presided over by the President of Iraq) are linked directly to the R.C.C., and all are involved in making decisions on the Country's strategies and determining major economic policy.

Iraq has had more than 30 years experience of economic planning, starting with the Independent Development Board set up in 1950. The Ministry of Planning, established in 1959, developed into one of the more effective and more powerful ministries.

The Planning Board (P.B.), as mentioned above is

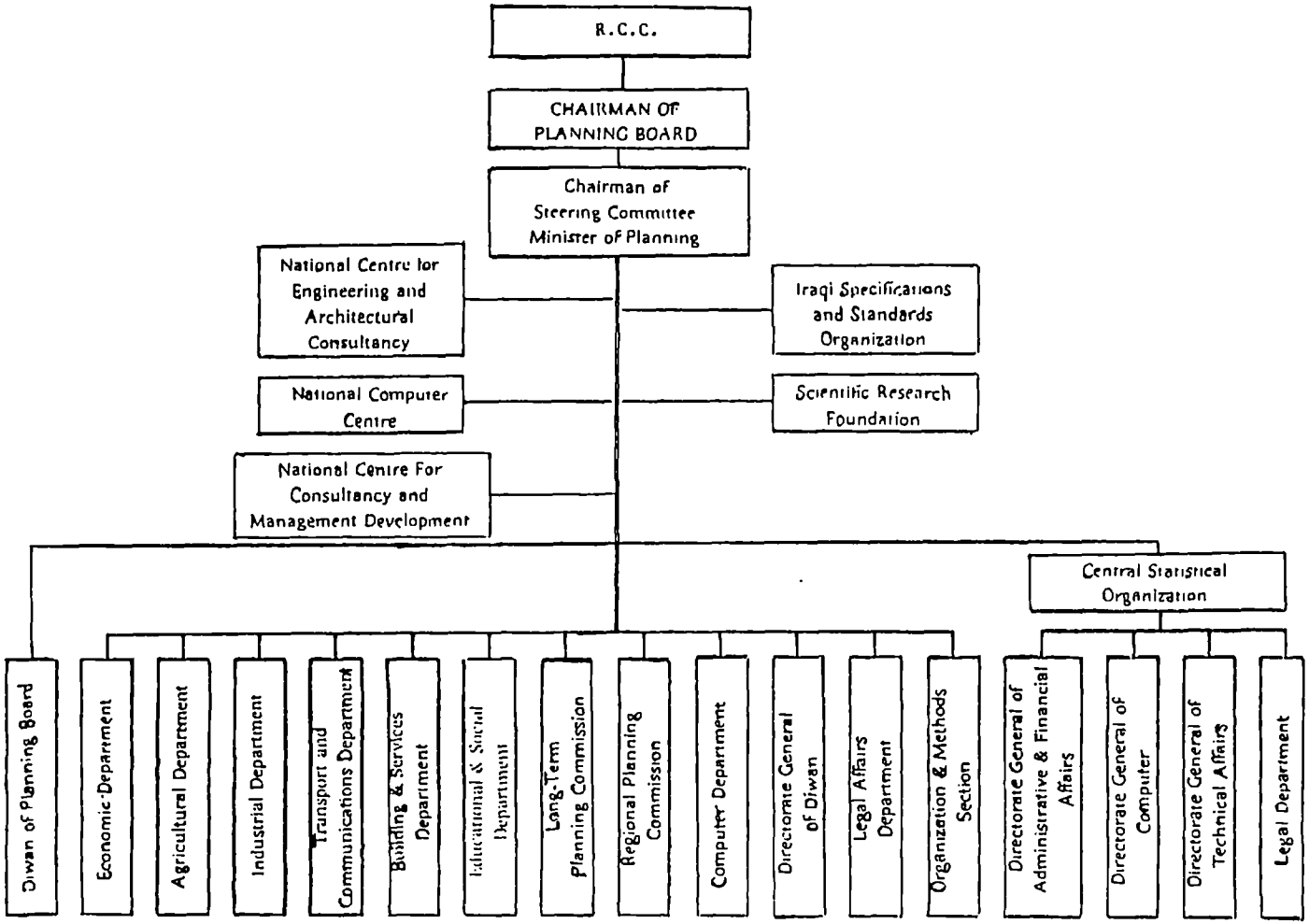
the supreme planning body in Iraq and its decisions are final. It consists of six ministries including the Ministry of Planning, and five specialists as members,as well as the Governor of the Central Bank of Iraq. A minister may be appointed as a member of the P.B. when a case relating to his Ministry is being discussed. All cases along with their recommendations are forwarded to the P.B. by the Steering Committee (S.C.) in the Ministry of Planning.

The S.C.,consisting of the Director Generals in the Ministry and the same five specialist members of the P.B., is presided over by the Minister of Planning. This committee is responsible for preparing the detailed framework of national plans and to follow up their implementation.

The Ministry of Planning is a well organised institution undertaking the evaluation of all project proposals. It consists of many specialist departments (See Figure 5.2), each of them headed by a senior Director General. The Industrial Department has a "Project Evaluation Division", the main functions of which are to evaluate proposed projects and to examine their feasibility studies. This division, under the supervision of a senior economist, consists of a group of economists, engineers and technocrats (no accountants are involved).

Figure 5.2

The Institutional Structure of the Central Planning System in Iraq



Source: Ministry of Planning, Iraq, 1975, P.50.

The Long-Term Planning Commission and the Regional Planning Commission were created in 1971. The main function of these commissions is to draw up the National Development Plan (N.D.P.) with due consideration to long-term planning objectives and the balance of regional growth in Iraq. They prepared the first draft of the N.D.P. 1975 - 1995 with a detailed report including the main basic indicators of economic and social development.

The Diwan of the Planning Board is established to follow up the implementation of the N.D.P. and to supervise the implementation of agreements between domestic projects and foreign firms.

The Central Statistical Organisation is responsible for conducting censuses, surveys and analysis of statistical data. The computer unit is used for these purposes.

The National Computer Centre prepares and designs computer systems for various state organisations, and also prepares feasibility studies for using computer systems in various state organisations and government agencies.

In addition to this integrative system, each Ministry has a planning department, the main function of which is to examine whether a Ministry's proposed project fits into the general form of the N.D.P. (Hashim, J. 1975, p. 107).

5.5.2. The Planning Process

Economic policies and politics in Iraq are interwoven. The main details of the economic policy are drawn up by the leaders of the Arab Ba'ath Socialist Party. The political report of the Eighth Regional Congress of the Party decided that: (Ministry of Information, 1977, p.29).

> "The progression of the Revolution in the field of economic transformations must achieve the following:
>
> 1 Develop the agricultural sector in order to attain the best returns and reduce the volume of agricultural and foodstuff material imported.
>
> 2 Promote the industrial sector, complete the unfinished projects, build a solid industrial base able to provide strong currencies.
>
> 3 Free the oil sector from foreign domination and exploit the natural resources such as oil, sulphur and phosphates on a national basis.
>
> 4 Provide work opportunities for all and eliminate definite unemployment.
>
> 5 Raise the standard of living and redistribute income for the welfare of the working classes".

The foregoing general headlines are translated by P.B., S.C. and the Ministry of Planning,to numbers in the proposed N.D.P. It may be added that the planning process begins by examining the current situation of each sector to see whether any new projects can be

added. These surveys, carried out before the preparation of each plan, provide valuable data about new investment possibilities. Afterwards, a Law is issued by the R.C.C. for approval on the N.D.P. and to determine the general principle of the plan. For example, Law No. 89 of 1976 for the N.D.P. for 1976 - 1980 was contained in three chapters. Chapter one was to include the approval of the plan and some definitions. Chapter two gave the general principles and the main targets which had to be applied. It stated in article 3 that the annual general average growth and the annual growth of the economic sectors should not be less than the following:- (Ministry of Planning, N.D.P. 1977, p. 3).

1	National Income	16.8%
2	Personal Income	13.3%
3	Oil and Quarries Sector	15.5%
4	Transformation Industries Sector	32.9%
5	Agricultural Sector	7.1%
6	Distribution Sector	16.9%
7	Services Sector	10.4%

The third chapter included the general regulations and the P.B. authority.

At a subsequent stage, the Ministry of Planning specifies the plan in some detail, indicating the

overall targets of production, income, investment and other economic variables.

Finally, the plan is referred to the executive Ministries for execution. Thus begins the projects preparation stage in order to attain the N.D.P. targets. Figure 5.3 may give a clearer picture of the planning process in Iraq.

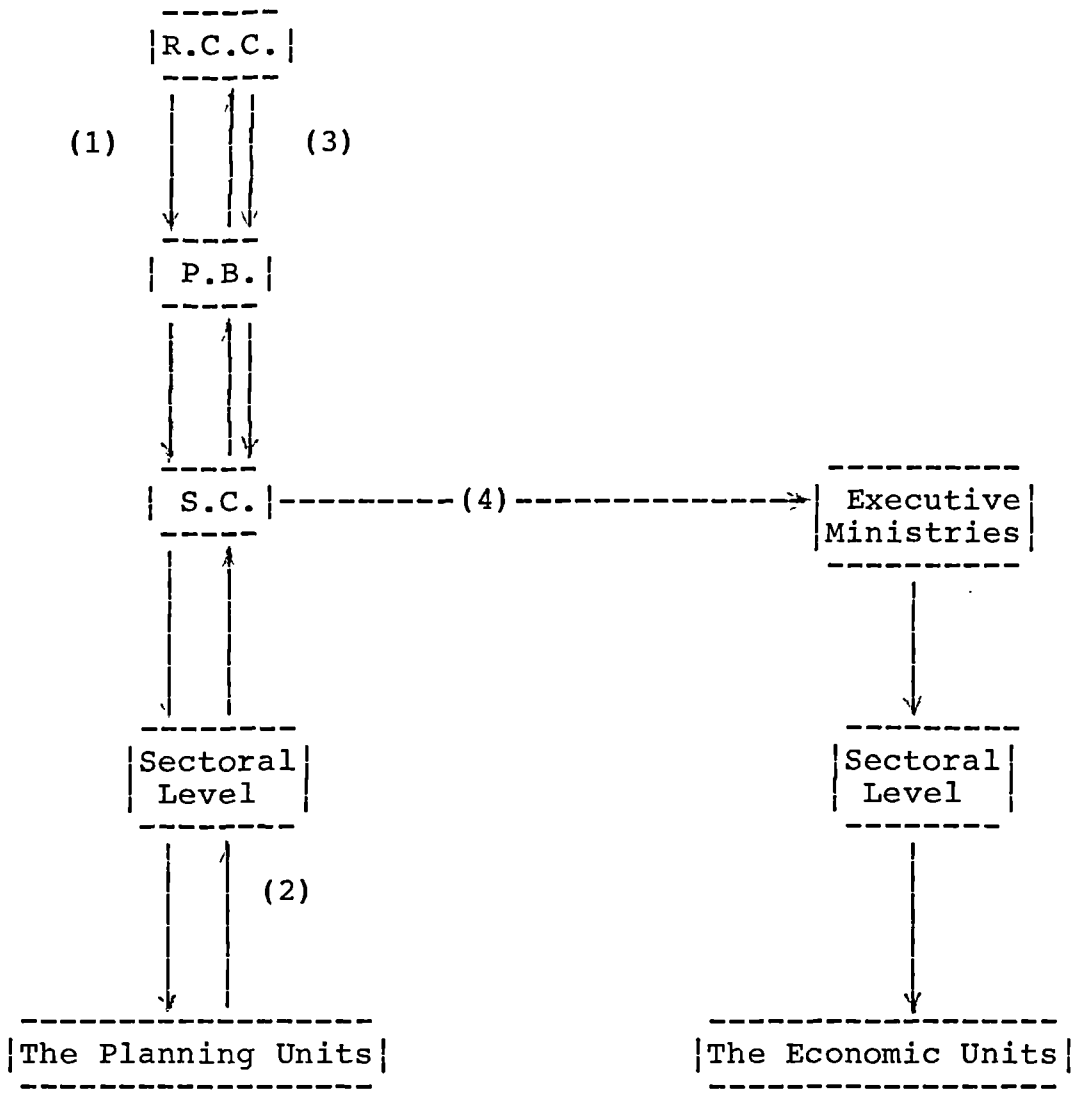
5.5.3. Project Preparation Stage

At this stage it is important to distinguish between newly proposed projects and proposals for the expansion of existing projects. Both of them require a feasibility study to find out whether they will be of benefit to society, but if the latter are within the accepted policy framework of the N.D.P., approval from the top authorities is not necessary.

The choice of new projects is a means of achieving the N.D.P. targets, and is mostly done by the executive Ministries and their affiliates. Suggestions for new projects sometimes emerge from political leaders, governors of the different regions in the country and the Ministry of Planning itself (Agrala, N. 1975, p.11). When the formulation of ideas for a new project is complete, the provision of all the necessary data for the evaluation of the project is required. A preliminary study has first to be prepared to determine the nature of the project, the resources required and

Figure 5.3

Planning Process and Formation of the N.D.P. in Iraq
(The Planning Stage)



(1) The General trends from supreme command.
(2) Data and studies for the formation of the N.D.P.
(3) Approved N.D.P.
(4) Refer the N.D.P. to the Ministries for execution.

the benefits expected. This study together with the recommendations of the specialists is then submitted to the relevant Minister for approval.

The next step is to form a committee to prepare a detailed feasibility study of the project. This committee may consist of a group of specialists from the executive Ministry, experts from other Ministries, University professors and members of staff (3) and/ or foreign consultants.

The feasibility study of a proposed project involves many different factors such as initial investment cost, commercial profitability indicators, value added, technological development, etc. This study, together with its recommendations and conclusions, is submitted to the Minister concerned for his approval and then presented to the Ministry of Planning.

The Projects Evaluation Division in the Ministry of Planning examines the feasibility study from all aspects such as (Agrala, N. 1975, pp. 19-20):

1 The main purpose of the project, its impact on economic development,its principal inputs,location,

(3) In some cases, the top authority may ask university professors and members of staff to prepare the feasibility study of a particular project. For example, the feasibility study of Al-nai State Farm was done by the staff of the Engineering and Agricultural Colleges, University of Baghdad and the feasibility study of Shahrazor State Farm was done by the staff of the Agriculture College, University of Sulymania.

capacity, etc. In this connection, the targets of the comprehensive national plan and the long-term perspective are considered.

2 Examine its commercial profitability by using traditional methods such as internal rate of return, pay back period and net present value.

3 Examine its social profitability (4) by using economic indicators, such as the expected value added, foreign exchange benefits, income distribution benefits, employment benefits, technological development, etc.

4 Analyse the risk and uncertainty of the project.

The above indicators will help to determine whether a proposed project is feasible,and the recommendations are followed accordingly.

General guide lines for the preparation of a feasibility study were issued in a manual by experts in Ministry of Planning. The Ministry also arranges training courses for the relevant officers in the executive ministries to facilitate their work and put them on the road to preparing good studies.

The feasibility study,together with the report and

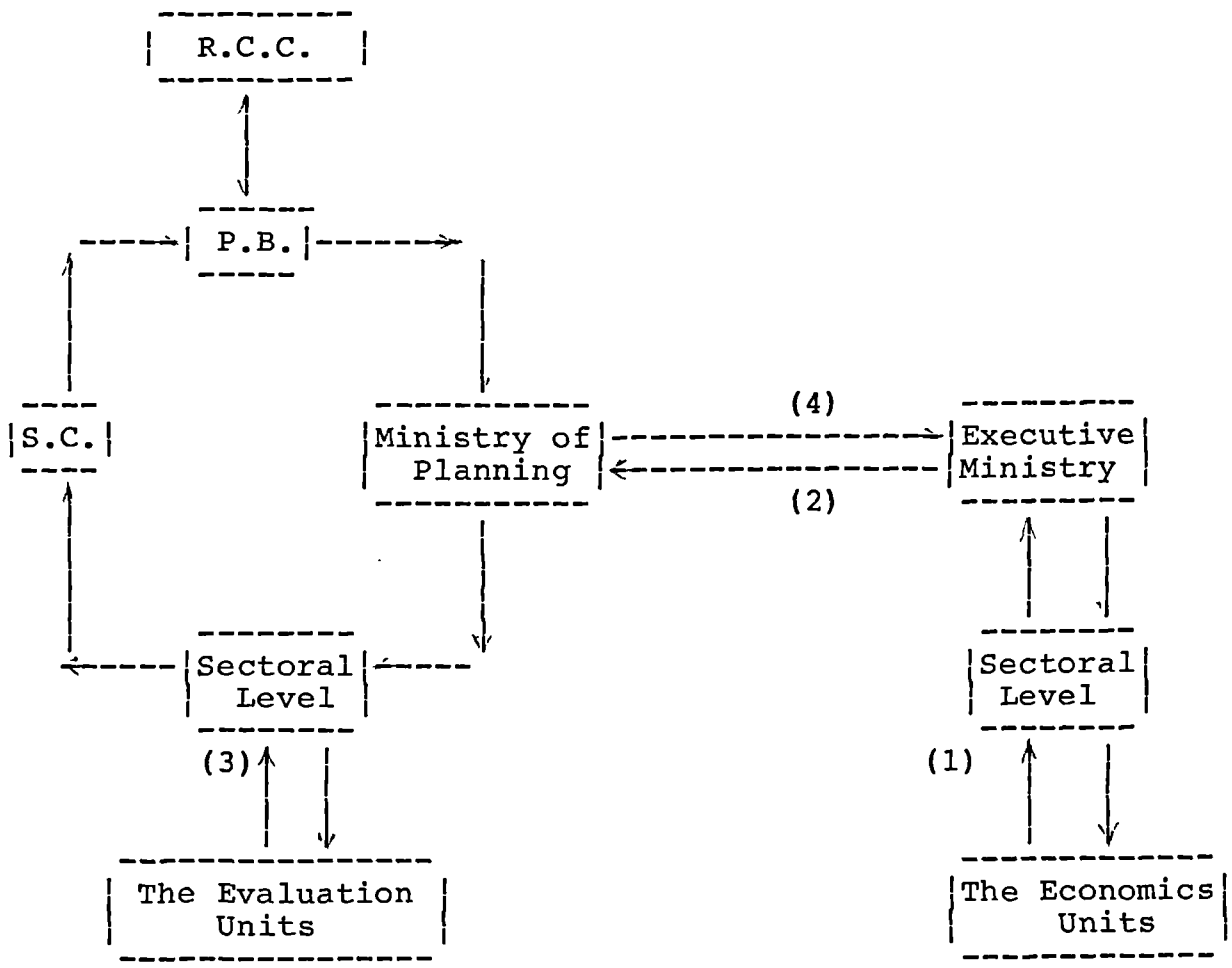
(4) In my discussion with the Project's Evaluation Division, they pointed out that they are not applying an actual cost-benefit analysis method for project appraisal. Various economic indicators related to the project's fields and activities may apply. The perfect application of the cost-benefit analysis method is their aspiration for the future.

recommendations, is submitted to the S.C. for approval. If the financial sanction of the proposed project is within their authority,their decision will be final, otherwise, the final decision has to be made by the P.B. Lastly, the project will need inclusion in the investment budget for execution. Figure 5.4 shows the various phases in project preparation in Iraq.

However, when the proposed project is approved and is to be implemented, the follow-up and control processes should be initiated. The Planning and Follow-up Department in the Ministry concerned is responsible for monitoring and controlling the project's execution, reporting quarterly to the Ministerial Headquarters, the Ministry of Planning, and the P.B. Various forms designed by the Central Committee of Follow-up in the Ministry of Planning, regarding project execution and productivity have to be completed by the Department to co-ordinate planned objectives and actual practice (See Appendix 6.1 of the next chapter). Nevertheless, close examination of the forms' contents indicate many arguments against the structure of the monitoring and control procedures in Iraq. Section (6.5.1) of the next chapter will set out these arguments.

Figure 5.4

The Flow Chart of a Project Preparation in Iraq
(The Control Stage)



(1) A proposed project.
(2) To examine and recommend the project.
(3) To approve the project.
(4) Refer the project for execution.

5.6 Conclusion

A prerequisite for the socialist transformation in Iraq was a comprehensive revision of all systems related to planning or execution. Accounting development in Iraq has taken great steps forward from the beginning of the 1970's until the present day. Auditing has made significant progress, particularly after the establishment of the Law of 1980 and now has its ambitions to play an integral part in the future. Planning in Iraq may be described as a well-organised system.

There are, however, some unanswered questions to be taken into consideration, which may be summarised in the following points:

1 As was mentioned previously, the uniform accounting system was introduced in two stages, in the commercial sector (S.T.O.) in 1970 and in the industrial sector (S.O.T.) in 1972. Although the general principles were unified, there were differences between the two systems, e.g. the chart of accounts in the S.T.O. system was classified into six groups whilst in the S.O.T. system it was classified into nine groups. This could affect the outflow of information to the aggregate level.

2 Neither system mentioned a uniform cost system or even a pricing method. They conferred the right to

enterprises to carry out this task. This may lead to differences in measurements, in administrative control and in the basis of the pricing decision.

3 The systems were designed by Egyptian experts, despite the fact that they had no long term experience, (their system only dated from 1966). This point indicates on the one hand the weakness of the Iraqi staff, and on the other, the confusion caused by using the system in the absence of the designers or experts.

4 The systems have made good progress during the last ten years, and have spread to cover most sectors, except government agencies and the private sector. These exceptions may hamper the task of the central planner who needs unified data from all sectors.

5 The B.S.A. in Iraq has the right to submit proposals for new legislation in the accounting field in order to bring it into line with modern standards. Furthermore, article number two (B.S.A. Law No.194 of 1980) pointed out that the B.S.A. had to give recommendations and advice to the government agencies for the development of their accounting and administrative systems. In fact, the B.S.A. has neither helped significantly in developing these systems nor has it given advice in this respect, despite the fact that the uniform accounting system has facilitated their

work and has helped to bring practice into line with planning targets.

6 In practice, the B.S.A. uses the continuous audit method for auditing an enterprise's accounts in the socialist sector, while it depends on the final audit method for auditing the government agencies' accounts. However,the B.S.A. could make further efforts in the area of government auditing. Value for money method, for example, could be applied to help to reduce government expenditure. This method is concerned with questions of what can be achieved by government agencies and how effective a particular process is in achieving better value for money.

The above method and many others, could be recommended by the B.S.A. to assist in achieving Government Agencies' targets.

7 Article number two (Law No.194 of 1980) pointed out that one of the main objectives of the B.S.A. is to evaluate financial and economic plans. From this viewpoint, the B.S.A. could play an important role in the planning and control processes. It could audit the budget appropriation, follow up the execution of the national plan, audit the data provided by enterprises to central planners, etc. In fact, the B.S.A. does none of this.

8 The B.S.A.is authorised to review the efficiency of

each enterprise, each sector, and the whole economy. This task is never carried out by the B.S.A., despite the fact that efficiency may be considered an important object of accountability.

9 The control process in Iraq tend to use commercial profitability as an indicator of efficiency. This basis is not in keeping with the policies of the socialist economy of the country, for the control measurements should have to agree with the objectives of the national development plan, which depends on social welfare indicators. The particular meaning of control as envisaged from the social point of view incorporates both sets of variables and the interdependencies between them. In other words, it would imply a control system considerably richer in the coverage and monitoring of costs and benefits which influence social welfare, incorporating mutual feedback channels between the planned objectives and actual practice. If one accepts this view, then the main management function would be the efficient use of scarce resources in both execution and production stages of a project. Generally, resources are allocated through programmed budgets which represent integral planning and control models. Therefore, adherence to PPBS as a comprehensive approach for the specification of the basic programme objectives of

an enterprise, of which CBA forms an important part, would be of great significance to a country such as Iraq.

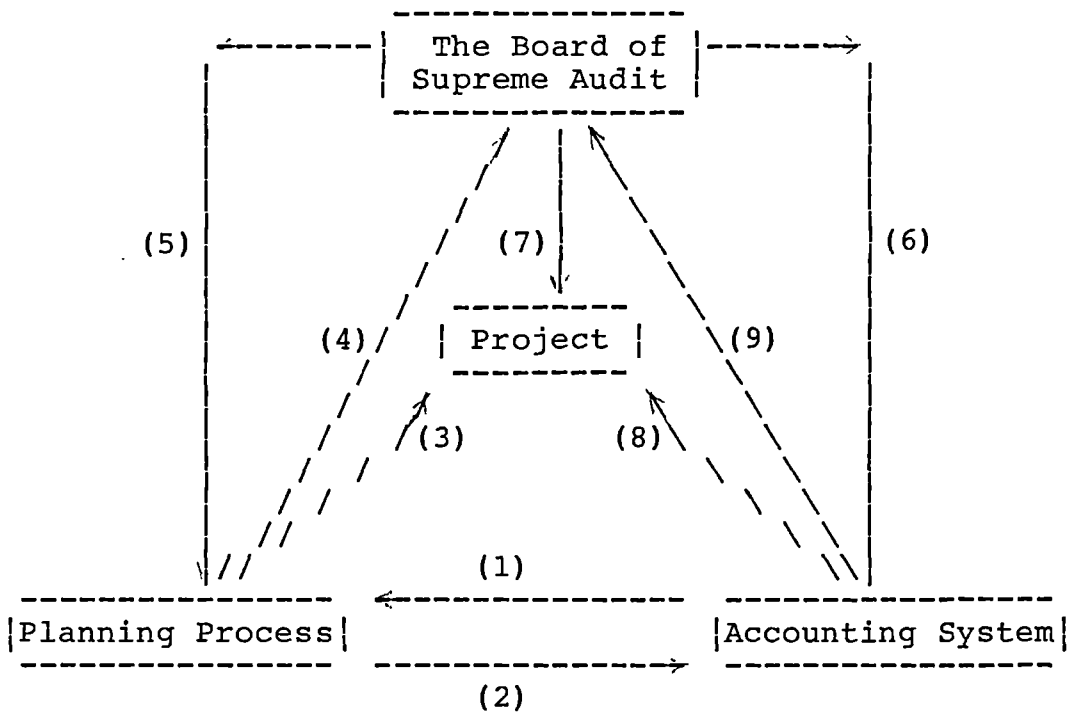
10 The aim of a feasibility study is to illustrate whether a project is socially profitable and to decide either to accept it or reject it. This study has sometimes come after the execution of a project, a procedure which negates the meaning and the purpose of a feasibility study. Other points of inefficiency in this regard will be discussed in later chapters.

Finally, the success of any proposed project is dependent, in part, on sound planning, the accuracy of information provided by the accounting system and its capacity for good control, and the integral role of auditing. Accordingly, it is necessary to harmonise these activities to achieve a better result from an economic development project. The following flow chart shows the interrelationship between these activities. It shows that an accounting system should provide sound, standardised, and useful information for the preparation of a comprehensive development plan, which should be passed down to the accounting units at the micro level and to BSA for control and follow-up of the execution of the project. The BSA is also responsible for reviewing the development plan in order to ensure that it is in

line with the general targets. Auditing the project's accounts and its efficiency, and monitoring its execution are equally important. For this to be done, accounting units at micro level have to monitor the project closely by way of budgets which should be notified to BSA as an external control body, which will follow-up variances and report accordingly. Within this cycle of planning, monitoring, and control, the objectives of a development project would be consistent with those of the national development plan and thus aid the acceleration of economic development.

Figure 5.5

A Proposed Flow Chart of Interrelation Between Planning, Accounting and Auditing



(1) Accounting system provides sound information to central planners.
(2) Central Planners refer national plan to accounting units for execution.
(3) Project Preperation.
(4) Planning units provide national plan to B.S.A. to follow-up the execution.
(5) Auditing the planning process to see whether it is in line with the general targets.
(6) Auditing the accounts and efficiency.
(7) Follow-up the execution stages of a project.
(8) Using the control techniques.
(9) Providing information to B.S.A. for auditing and control.

CHAPTER SIX

PLANNING AND CONTROL OF THE AGRICULTURAL SECTOR IN IRAQ

6.1 Introduction

Most developing countries have a systematically prepared national plan to speed economic growth and to further a range of social objectives. Sound planning and implementation require an accurate follow-up system to monitor the performance of economic units in the framework of the development plans. Within these activities, accounting plays an important role in achieving coherence in the macro, sectoral, and micro phases of economic planning.

The agricultural sector in Iraq has always been given high priority in overall development plans. For some years the Central Committee of follow-up within the Ministry of Planning has overseen the follow-up process for all sectors, but the Agricultural Sector has had the additional advantage of the Supreme Agricultural Council, reflecting the importance accorded to this sector by the Government.

This chapter outlines in brief the background to the evolution of the agricultural sector in Iraq. The planning stages are described with reference to the period 1950-82. It then discusses the importance of this sector and its contribution to economic development in Iraq in the light of its share of gross national income.

Finally, the follow-up process and its development in the Iraqi agricultural sector will be introduced to

shed some light on the control devices used at the macro level and to explain the evaluation processes used in the micro level.

6.2 Evolution of the Iraqi Agricultural Sector

The agricultural sector in most countries, whether they are developed or developing, plays a leading role in economic development. It can assist in economic transformation from a stagnant to a progressive stage, both by supplying raw materials to domestic industry and through its contribution to the growth of the national economy as a whole. Therefore, it is of considerable importance that it should be given priority in economic development.In this regard Lewis , W.A. (1954, p.19) argued that :

> "It is not profitable to produce a growing volume of manufactures unless agricultural production is growing simultaneously. This is also why industrial and agrarian revolution always go together, and why economies in which agriculture is stagnant do not show industrial development."

In Iraq, Prior to the revolution of July, 1958, the agricultural sector was weak, poor, and suffered from feudal structures. The Development Board, which was introduced in Law No. 33 of 1950, was responsible for formulating and implementing development programmes in all public sectors, but projects were selected without

the use of sophisticated techniques, feasibility studies or project evaluation methods.

After 1950, the discovery of large oil reserves and the revenue these produced, encouraged the government to accelerate economic and social changes in the country (Shemmem,A. & Al-Waeth, A. 1972, p.2), though the programmes introduced emphasised engineering projects, such as reservoirs, irrigation and drainage schemes, rather than the improvement of agricultural productivity on existing farmland.

It is worth mentioning that all agricultural farms had feudal owners who represented tribal heads and wealthy urban merchants. According to the Agricultural Census of 1958-59 (Ministry of Planning, 1961, p.8) there were 168,346 landholders with legal rights varying in extent, over 32 million donums of arable land, of which 23 million were actually exploited. There were 3,418 agricultural holdings of 1000 donums, while five holdings exceeded 100,000 donums in size. As a result, 86% of the total holdings contained less than 11% of the total area of cultivated land, while about 2% of the landholders controlled about 68% of all land. This uneven distribution meant that 89% of the rural population owned no land, and the labour of the landless rural people was given to the landlord in exchange for a share of the produce.

In such circumstances, government intervention to reform and improve this sector was not strong enough to counter the domination of the feudal landlords who could bring considerable influence to bear on the government.

After the 1958 revolution, the new government promised to remove all social injustices and to create an economically independent state. They abolished the Ministry of Development and the Development Board, replacing them with a Ministry of Planning and a Planning Board. The first legislation, which was enacted on 30th September of the same year, was the land reform Law No.30, which was drafted by Iraqi and Egyptian land reform experts. Its main provisions were (Al-Hadethi, A. 1965. pp.11-19):

1. Individual land holding was limited to 1000 donums of irrigation land, or 2000 donums of rain-fed land. Land in excess of these limits was to be expropriated by the state.
2. The expropriated and the state-owned agricultural land was to be redistributed among the peasants. Each one would receive between 30-60 donums of irrigated land or 60-120 donums of rain-fed land, according to the productivity of the land.
3. The expropriation process was to be completed in five years, during which time cultivation of the land awaiting expropriation was to continue as before.

4. The peasants receiving land were expected, during the first five years, to cultivate it with care, otherwise ownership of the land might be withdrawn, after investigation by a special court, and the peasant would be considered a tenant.
5. One or more co-operative societies were to be formed in each city, including the peasants who received land, together with others whose land did not exceed the limit specified by the law. The functions of the co-operatives included the provision of loans, seed, fertilizers and machines necessary for production, as well as marketing services. The co-operative was also expected to organise the cultivation of the land and the construction of canals and drainage systems.

Article 15 of the Law called for the establishment of a Higher Agrarian Reform Committee, which, under the supervision of the Agrarian Reform Ministry, was to be the national administrative organ for dealing with the expropriation, compensation, distribution and temporary management of sequestered lands. The application of the law, however, met with various difficulties and the results were disappointing. While expropriation of land went ahead, the distribution process was very slow, particularly in the first five years after the law was enacted. A number of problems were created by the new

system; for example, the reform law itself guaranteed the feudalists not only compensation,but also free choice of land, and its division among their relatives. (Alwan, A.S., 1961, p.7).

Although legally eradicated, feudal influence was still strong on the eve of the Revolution of 1968. Its power had been increased by the misapplication of the law and by neglect of the agricultural sector which had diminished as a result. The small holdings produced by the Agrarian Reform Law were weak and unproductive because small peasants lacked capital, seeds, machinery, and marketing experience. The area of cultivable land was reduced by salinity, official neglect and the smallholders' inability to drain their fields (Ministry of Information, 1979, p.77). Accordingly, there was an increase in the number and power of usurers in the countryside. New forms of exploitation developed when the peasants who had benefited from agrarian reform leased the land they could not farm to the bourgeoisie and the remaining feudalists.

In consequence, the number of impoverished peasants increased and rural migration to the towns grew. As productivity diminished, Iraq was on the whole, for most years between 1958-1968, an importer of agricultural products, whereas previously it had been self sufficient at least.

After July 1968, although the new government affirmed its belief that "agriculture is everlasting oil", they found that the agricultural sector was in a position of chaos. Most of the expropriated land had not been transferred to the state and most classified land had fallen into disuse. Therefore, radical agrarian reform was one of the main tasks to be tackled by the government from the early stages. The existing Agrarian Reform Law of 1958 needed drastic amendments, which were issued on 20 May 1969. Compensation for landowners and their right to free choice of land were abolished, while land was distributed free to the peasants. These radical changes derived from the socialist view which rejects possession of the land by landowners, and the privileges they enjoy at the expense of impoverished peasants.

In 1970, Agrarian Reform Law 117 was issued to reduce maximum land holdings and to provide new principles for the distribution of land (Bashir, B. 1973, p.11). As a preliminary step, changes had to be made in the institutions concerned, the first serious attempt towards creating an efficient administrative structure in order to avoid confusion in agricultural development. The Land Reform Law decreed (Articles one and nine).

1. The Higher Committee of Land Reform, and all its subsidiary committees, were to be abolished.

2. A Supreme Agricultural Council was to be formed under the chairmanship of the President of the Republic, its membership to comprise the Ministers of Agrarian Reform, Agriculture, and Irrigation, the Chairman of the General Union of Peasant Societies and full time members not fewer than five in number, two of whom were highly qualified in agriculture, the others in the fields of economics, irrigation and drainage, and agrarian reform.

The Law gave the Supreme Agricultural Council the right to lower the ownership ceiling in regard to land which was close to marketing centres ,down to half of the limits stated by the law. It paid special attention to the rights of co-cultivators and agricultural workers in the lands they tilled; it entitled the actual cultivator to not less than 50% of the land and plantation on which he worked in the event of expiry of his co-cultivation contract or on the elapse of ten years since the beginning of such cultivation (Article 14).

However, the main task of the Supreme Agricultural Council was to draw up comprehensive agricultural plans for the medium term, e.g., a five-year plan. Furthermore, all proposed agricultural projects had to be submitted to the council for approval. These

projects were evaluated and then returned to the ministries concerned with instructions and adjustments. When all the necessary modifications had been made, the proposed projects were sent to the Ministry of Planning and consequently to the Planning Board to be included in the plan.

This was considered as a progressive step in agricultural planning towards improving social and economic results in the sector. New patterns of production emerged, although the form of rural ownership was still not socialist. Therefore, the Council decided to expand gradually three aspects of the socialist sector: state farming (1), collective farming, and co-operative farming. These were intended to become dominant, and there was a determination to promote vigourously the spread of socialist culture among the peasants.

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(1) Project appraisal of the Greenhouses farm projects in Al-Rashdiya,a state farm, will be our concern in the following chapters. The choice of state farms as a case study in this research derives from the ideology that the state farms would take the lead in the Iraqi Agricultural Sector in the future.

6.3 Planning stages in the Agricultural Sector

The stages of agricultural planning in Iraq may be divided into four periods. These are:-

1. The Development Board Stage, 1950 - 58.
2. The National Planning Stage, 1959 - 69.
3. The Comprehensive National Planning Stage, 1970-74.
4. The Economic Development Stage, 1975 onwards.

1- The First Stage 1950 - 58:

As explained in the previous chapter, developmental efforts in Iraq were begun in 1950, as a result of increased revenues from oil. The Development Ministry was composed of various administrative departments and technical bodies, whose specialisations included irrigation,water storage, flood control, drainage, and agricultural and forestry project design (Supreme Agricultural Council,1977,P.3).

The Development Board, which was created by Law No.23 in 1950, was charged with the threefold task of preparing a general plan for developing the resources of the nation, undertaking the execution of projects and turning over the completed projects to the Ministries concerned for implementation (Kachachi,S.1976,p.23). Difficulties were faced by the Board in its early stage, and plans were continually revised before they reached the implementation stage, causing much waste of effort. Thus the first 1951 - 55 investment programme was

almost immediately replaced by the 1951 - 56 investment programme, while the plan for the 1955 - 59 period was superseded by that for the 1955 - 60 period (See Table 6.1).

The 1951-56 plan called for total expenditure of I.D. 155.6 Million, of with the largest share was for irrigation projects such as dams and drainage canals. Agriculture in Iraq had been plagued by devastating annual floods from the two rivers, and salinity of the soil was the main obstacle to agriculture. It would follow that any development programme should rank irrigation and drainage as the utmost priority, with flood control as the most urgent requirement. It was logical, then, to place flood control first on the Board's agenda. The amendments in the development programme were due partly to the increase of oil revenues on which the planned expenditure was based, and partly to the presentation of reports by outside experts called in to study the country's development prospects, such as those of the World Bank Mission in 1952 (Kachachi, S. 1976, p.24).

The investment programme covering the years 1955 - 60 called for expenditure of 500.1 million I.D. This programme was short-lived, being brought to an end by the Revolution of 14th July, 1958. However, the effort to improve the agricultural sector itself seems to have been only partial, with the initiation of a limited

Table 6.1

Actual Allocation of the Development Programmes

1951 - 1960

(Thousand I.D.)

Sector	Programmes							
	51-55	%	51-56	%	55-59	%	55-60	%
Agriculture	30.1	45.7	53.4	34.3	114.4	37.6	168.1	33.7
Industry	-	-	31.1	20.0	43.6	14.3	67.1	13.4
Transportation & Communication	15.8	24.1	26.8	17.2	74.2	24.4	124.4	24.9
Building & Housing	12.6	19.2	18.1	11.7	28.6	9.3	63.9	12.7
Others	7.2	11.0	26.2	16.8	43.6	14.3	76.6	15.3
Total	65.7	100	155.6	100	304.4	100	500.1	100

Source: Kachachi, S., "Planning in Iraq" Ministry of Planning, Baghdad, 1976.

number of flood control and irrigation projects. It cannot be denied that these projects were necessary to the agricultural sector in the first instance, but it was also necessary that agricultural production, land reform, and the improvement of farm practice be given adequate attention.

2- The Second Stage, 1959 - 69:

After the July 1958 Revolution, agricultural planning acquired a new and broader meaning, and more comprehensive developmental efforts were envisaged. In fact, the concept of planning as an integrated and comprehensive effort at development was introduced at this stage. Immediate organisational changes were made, and, following a review of the planning machinery, the Executive Power Law was passed in 1959, abolishing the Development Board and the Ministry of Development, and establishing an Economic Planning Board and Ministry of Planning. The Economic Planning Board under the new law was to consist of the Prime Minister (as the chairman) and the Ministers of Planning, Finance, Agriculture, Agrarian Reform, Industry, Communication, Works & Housing, and Social Affairs (as members). The tasks of the Board were to draw up an economic plan, study the amendments to it, and follow-up the implementation of the plan (Hashim, J. 1975, p.98).

During this stage, three development plans were drawn up. The Provisional Economic Plan (1959-1961) was intended to be an interim plan for the completion of the projects that had already been started, thus giving the Board sufficient time to draw up a detailed plan. During this period, the performance of all sectors was poor, with actual spending amounting to only 33.5% of that planned (See Table 5.1 in the previous chapter). The Agricultural sector received inadequate attention in this plan, its share being reduced to 13.6%, while the Buildings and Services Sector was given high priority, receiving 47% of the total allocation.

Two years later, a detailed Economic Plan was drawn up for the period 1961 - 1964, allocating to the agricultural sector I.D.87.2 million, representing 19.7% of the total allocation of I.D. 442.3 Million. This indicates not only the low priority accorded to the agricultural sector, but also its lack of development compared with the other sectors (See Table 6.2).

The third development plan was the first in a series of more comprehensive national five year plans. In the 1965-69 plan, the first truly comprehensive plan covering the economic activities of all sectors, the total allocation was I.D. 541 Million, of which the agricultural sector received 27.2 per cent. Again, high priority went to industry. However, the share of agriculture in total allocation was raised from fourth

priority to the second, as can be seen from the table. For the first time, there was an annual growth target of 7.5% to be achieved by the agricultural sector. This target was certainly a step in the right direction towards a well-developed agricultural plan, but it is very difficult to formulate a productive target for the agricultural sector, when field information is inadequate and unreliable.

Table 6.2

Actual Allocation of the Economic Development Plans 1959 - 1982

(Million I.D.)

Plans	Sector				Total
	Agriculture	Industry	Transport	Building	
1959-61	43.9	32.8	84.9	152.1	313.7
1961-64	87.2	121.8	115	118.3	442.3
1965-69	147.5	175.1	103.8	114.6	541
1970-74	366.2	391	219.3	283	1359.5
1975-80	2374.4	4000	2200.1	400.3	9974.8
1981*	689	1378	1287.5	886.9	5241.4
1982*	768.4	1315.7	138.7	165.3	2388.1

* Annual Plan

Sources: 1 - Shammem, A. & Al-waeth, A., Baghdad, 1974.
2 - Saman, B., Baghdad, 1975.
3 - Ministry of Planning, Annual Abstract, Baghdad,1976, 1977, and 1982.

3- The Third Stage, 1970 - 74:

On the first of April, 1970, under to Law No. 70, the national development plan was introduced and presented as a tool for the development of the socialist system. The main characteristic of this plan was its emphasis on the agricultural sector, while received 26.9 per cent of the planned government allocation, lying in second place after industry (See Table 6.2).

Although planned investment in the agricultural sector increased from 13.9 per cent in the 1959 - 61 plan to 26.9 per cent in the 1970 - 74 plan, agricultural production was below the level for which the government was aiming. This was a major setback for agricultural development, particularly since agricultural investment should have been substantially increased during this period when investments were most needed as a result of the 1958 Land Reform Law implementation and its implications.

The plan called for a total investment of I.D. 1359.5 Million, with the share of the agricultural sector at I.D. 366.2 Million. The main objectives in the development of the agricultural sector under the National Development Plan were: (Ministry of Planning, 1970, pp.11-19).

1. To achieve an annual compound rate of growth of 6.9% in this sector.
2. To obtain self-sufficiency in the production of the

principal agricultural crops and commodities.

3. To obtain self-sufficiency in the production of raw materials needed by the industrial sector.
4. Increased agricultural production, with emphasis on vertical expansion rather than horizontal expansion, i.e. intensification of agricultural production.
5. Following an import substitution policy, the substitution of locally produced agricultural commodities for imported ones.

The above objectives may provide some insight into the priority accorded to the agricultural sector in the development plan. During this period feasibility studies were undertaken for new projects and the improvement of existing projects.

4-The Fourth Stage, 1975 - Onwards:

This stage was characterised by the rapid increase in oil revenue after 1973, which was caused by the increase in the world price. As a consequence, the annual planned investment was considerably increased. This period was covered for nine months by the 1975 provisional plan (2) and then by the 1976 - 80 national economic development plan. Table 6.2 shows that the total investments under the plan were I.D. 9974.8 Million, of which I.D. 2374.4 Million was allocated to

the agricultural sector. This was the first time the Iraqi government had drawn up such a huge and comprehensive national economic plan, covering the economic activities of all sectors.

In this plan the agricultural sector received 23.8 per cent of the total allocation, lying in second place after industry. The main objectives of the plan regarding the gricultural sector were: (Samarrie, S.A. 1980,PP.81-6).

1. To establish an independent administration for agricultural projects, responsible for all requirements of a project in its technical and administrative financial aspects, in order to integrate them and so facilitate increased productivity.
2. To support and develop the state farms in preparation for the requirements of agricultural production in order to realise the transition to a socialist economy. In addition, to establish major projects in designated centres of the regions, and to train the peasants in modern agriculture and use of advanced technology.

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(2) Prior to 1975, the period of a financial year was from 1st April to 31st March of the next year. In 1975, a law was issued according to which the financial year ran from 1st January to 31st December.Therefore,the financial period of 1975 covered nine months,from 1st April to 31st December. In this period the government allocated I.D. 207.5 Million for the agricultural sector alone.

3. To support agricultural extension, raise technical standards and provide required commodities.
4. To complete the co-operative structure by supporting the co-operative movement and encouraging the collective farms to make decisions concerning the new co-operative societies in their area.

However, although planned investment and the share allocated to the agricultural sector increased more than twenty times during the period 1959 - 82, the decline in productivity continued.

6.4 Contribution of the Agricultural Sector to Economic Development in Iraq

The most notable feature of the Iraqi economy is its dependence on two economic sectors, oil and agriculture. The agricultural sector is of special importance to the economy of Iraq for two reasons; first, in terms of contribution to the national income, for, excluding oil, the largest proportion of the gross domestic product is generated in agriculture. Secondly, around 38.5% of Iraqi population live in rural areas, depending directly on agriculture and raising livestock. This applied to more than 70% of the total population in the 1950's (1973 statistics).

The contribution of the agricultural sector has been gradually increased during the last thirty years, and the total value added of that sector increased from I.D. 71.5 Million in 1953 to I.D. 193.4 Million in 1971 and to I.D. 258.8 Million in 1974 (Ministry of Information, 1977, p.55). Table 6.3 shows the value added and the contribution to total gross domestic product generated by the agricultural sector for the period 1977 - 82 (Ministry of Planning, Annual Abstract of Statistics, 1983, p.116). It shows that the contribution of the sector gradually declined during the years 1977 - 80. This reduction does not reflect a decline in the sector, but occurred as a result of the rapid development of the other economic sectors, and of oil in particular.

Despite the increase in the growth of the other major economic sectors, the agricultural sector provided a contribution of 10.59% in 1982 (See Table 6.3). Therefore, the sector has been developed at an annual average of 7% in order to meet the country's requirements for agricultural products and that of industry for agricultural materials.

To compare the contribution of the agricultural sector with those of the other economic sectors, Table 6.4 shows that the building, agriculture, industry, and transport sectors were in first, second, third, and fourth places respectively in terms of their

contribution to the gross domestic product during the period 1977 - 82. It is obvious that the government emphasised agricultural development. Its aim was to expand the cultivated area by introducing new irrigated areas, and to improve agricultural productivity on existing farmland. Therefore, the funds allocated to this sector were gradually increased for the period 1959-82 (See Table 6.2). The government hoped to accelerate agricultural development by the allocation of I.D. 2374.4 million for the period 1975 - 80 . This investment programme was considered a turning point in the agricultural development of the nation ,and is the largest programme to date for the agricultural sector.

Table 6.3

Contribution of Agricultural Sector to Gross Domestic Products for the Years 1977 - 82

(Million I.D.)

Year	G.D.P. by sectors	Value Added of Agricultural Sector	Contribution Rate %
1977	6008.5	498.4	8.29
1978	7225.4	550.5	7.62
1979	11652.8	611.8	5.25
1980	15794.7	741.9	4.71
1981	9495.3	977.0	10.29
1982	9979.4	1056.8	10.59

Source: Ministry of Planning, Annual Abstract of Statistics, Baghdad, 1983.

Table 6.4

Contribution of the Economic Sectors to Gross Domestic Products for the Years 1977 - 82

(Million I.D.)

Year	Agricultural Sector %	Industrial Sector %	Transport Sector %	Building Sector %
1977	8.29	8.13	4.91	6.92
1978	7.62	7.0	5.19	7.74
1979	5.25	5.2	4.77	8.53
1980	4.71	4.48	4.22	7.18
1981	10.29	6.26	7.65	17.33
1982	10.59	7.35	7.43	17.75

Source: Calculated from table 6.2, Ministry of Planning, Annual Abstract of Statistics , Baghdad , 1983, p.126.

Although the agricultural sector was allocated a good share of the planned government investment, its performance was not at the desired level. This may, to a large extent, be attributable to the implementation of the development plans themselves. For example, the ratio of actual to planned expenditure, as shown in Table 6.5 for the period between 1959 - 82, was very low, fluctuating between 22.8% during the development plan of 1961 - 64 and 56.9% during the period of 1970 - 74. This suggests that there was a problem of deficient follow-up and control in the implementation of the development plans for some economic sectors, including agriculture.

6.5 Monitoring and Control Processes for Implementation of Development Plans

Plan formulation, implementation, and follow-up are integrated processes for economic development. Plan formulation begins with the laying down of targets in the light of the principles prescribed by top authorities of the state in accordance with broad economic and social objectives. Accordingly, the central planning system draws up the framework of the plan which implies the overall targets of investment, production, income, and all other economic variables specified for the sectoral levels.

The follow-up process is of considerable importance in ensuring that the performance indicators of the enterprise are associated and linked with planned objectives, and thus with the economic development of the nation. Therefore, the main purposes of the follow-up process may be determined as follows: (Esmiel, K.S., 1981, p.146).

1. Adherence to the plan's implementation process in order to discover deficiencies and hindrances during that process.
2. Design of a reporting system for control of programme implementation in order to overcome these deficiencies.

Table 6.5

Allocations and Actual Expenditures of the Agricultural sector for the Period 1959-82

(Million I.D.)

Plans	Allocations (1)	Actual Expenditure (2)	Expenditure Ratio (2) / (1)
1959 - 61	43.9	20.6	46.9%
1961 - 64	87.2	19.9	22.8%
1965 - 69	147.5	56.3	38.2%
1970 - 74	366.2	208.5	56.9%
1975 *	207.5	99.9	48.1%
1976 - 80	2554.0	1310.2	51.3%
1981 **	689.0	368.6	53.5%
1982 **	768.4	427.9	55.7%

Sources:
1. Shammem, A. & Al-waeth, A.,Baghdad 1974.
2. Saman, B., Baghdad, 1975.
3. Ministry of Planning, Annual Abstract Baghdad, 1976.

* Nine months allocation only, due to change in the beginning of the financial year.
** Annual plan.

3. Review of the project's production capacity, production requirements, manpower, and other factors to ensure that they are in accordance with the planned economic growth of the nation.
4. Discovery of weaknesses and strengths in the implementation stage and reporting accordingly.
5. The follow-up process is considered as a tool for improving the planning process by discovering omissions and inconsistencies in plans during their implementation. These gaps should be bridged to improve the planning process in the future.
6. A considerable amount of experience may be created during the follow-up process, which may benefit the administrative cadre in the preparation and follow-up of future economic plans.
7. The proper sequence and relationship of programme activities should be determined, and appropriate start and completion dates set.

In carrying out the above responsibilities, the follow-up team must report periodically and revision take place at the planning or implementation stages accordingly. Undoubtedly, accounting information and techniques play a leading effective role in this regard. They provide a basis for planning decisions, and, because planning is concerned with the future, an opportunity is given to direct future developments, the historical information provided serving in the planning

process as a basis for forecasting. Accounting also provides a basis for control , which is the measurement and correction of an organisation's activities to ensure the accomplishment of overall plans. From a macro viewpoint, the adoption of a uniform accounting system may facilitate the planning and follow-up process to a considerable extent and permit comparison of information from different enterprises.

6.5.1 Development of the Monitoring Process in Iraq

Prior to 1965, the follow-up process was poor and weak, or was omitted altogether, and thus national development plans were implemented without effective control devices. The characteristics of the period can be described as follows: (Al-Jumaly, S. & Al-Araji, A. 1975, pp.8-9).

1. There was no obvious system,instructions, or enacted law for control and follow-up of economic plans.
2. Neither in the planning Ministry nor in the other Ministries were there officially established bodies for following-up the implementation of plans.
3. The follow-up process was restricted to the actual expenditure report which was prepared by project managers for the Ministry.
4. The follow-up report was usually prepared annually and as a consequence, it could not provide a

sufficiently prompt remedy for failures in execution.

5. Generally, the follow-up process was inaccurate, unrealistic, and had little connection with national objectives.

Follow-up Law No. 27 was initiated in 1965. It determined the general framework of the follow-up process and required each Ministry to establish a planning and follow-up cell (Article No.1),whose role was to assist the Planning Board in these processes. Article No.5 required that these cells should be under supervision of the Planning Ministry and Planning Board. These planning and follow-up units within the Ministries were to send their reports regarding project evaluation and implementation to the Ministry of Planning.

In addition, Law No. 87 of 1965 (Five-Year Plan 1965-69) increased the importance of Law No. 27, requiring in article No. 9 that each cell in the Ministries should send a periodic report on their projects' progress to the Planning Board, Planning Ministry, and the Ministry of Finance. Nevertheless, the follow-up process of the national development plans did not bring about any significant progress. This perhaps led to the decision by the Planning Board, on September, 1970 to establish the Central Committee of follow-up. The role of the committee was to ensure continuous

supervision and control while the plan was in operation, a task which could be carried out with the assistance of the follow-up cells in the Ministries.

Moreover, the national development plan of 1976 - 80 gave the follow-up process considerable importance when it insisted upon the necessity of follow-up. It required that the process should include following-up the quantitative and qualitative objectives of national development plans. Accordingly, the Central Committee of follow-up produced various forms which had to be filled by all Ministerial establishments. These forms were designed as a result of co-ordination between the Control Committee of follow up and the Planning Ministry, and were constructed to meet the requirements of the planning and follow-up processes, requiring information about project execution, productivity, and sales. Causes of variances between the planned objectives and actual results had to be indicated on the reverse of these forms (See Appendix. 6.1).

As far as the follow-up process is concerned , many arguments can be advanced against the way the above forms were constructed :

1. The periodic Form No.1 (of Appendix 6.1) requires detailed information regarding the planned and actual results of a project's feasibility study together with twelve other items which should be

included in the feasibility study. It was explained in chapter four that a feasibility study should be prepared after the investigation of all aspects, which are constructed into a financial appraisal model giving comprehensive and systematic evidence of the soundness of the project and its harmony with the national development plan. Failure to include any single aspect may cause deficient project implementation and follow-up, and thus failure to reach the objectives of economic development. A project feasibility study, therefore, consists of an integrated budgetary system which is a fairly tentative plan and an integral part of the internal control model, in order to forge stronger links between the planned objectives and actual result. For the follow-up process to be effective, careful observation of the comparison between the budgets in the feasibility study as to planned and actual results must be made.

2. Diagnosis of the causes of variances between planned objectives and actual results, which are indicated on the reverse of forms No.1 and 2 , show that scant attention has been paid to the analysis of cost behaviour. The distinction between controllable and non-controllable costs is of considerable importance for evaluating a manager's

performance, since performance at the project level is related to what can be regarded as controllable by management at this level. Amey,L.R. and Egginton, D.A.(1973, P.420) defined controllable costs as those for which a specific manager is held responsible, while with non-controllable costs the manager does not hold any responsibility. Thus, the first priority is to distinguish between these two costs, of which controllable costs are directly related to the project's management performance, since they reflect a manager's ability to use efficiently the resources under his control.

3. Further evidence in support of the above argument is the absence of feedback process as a trigger for corrective action between the planned and actual figures. The processes of planning, control, and follow-up are meaningless in the absence of a feedback process; as if a physician were to diagnose a patient's disease without informing him of the remedy. The omission of a feedback process,therefore, would obviously lead to the loss of the connection between the project's targets and the economic development objectives. The empirical observation of a project provides much evidence in this respect, which will be evidenced in the discussion of the Greenhouses Farm Projects in the

following chapters.

4. The annual Form (No.2) for the follow-up of the productivity targets pursued by the national development plan refers to eight factors or circumstances related to various aspect such as, management system, production equipment, workforce, marketing, and so on. Each of these refers to causes of variances which are each given a specific code to be entered, indicating it as a factor relevant to the variance(s). This form has to be completed annually by a project's management in respect of the divergences between the planned objectives and actual results of the previous year. This procedure does not provide continuous monitoring and control of the activities, and there are many delays in the financial and economic returns. It would advisable, therefore, that this form should be designed to provide speedier information regarding the project's productivity to remedy any deficiency before it is too late.

As far as the agricultural sector is concerned, it is worth mentioning that, in addition to the above central follow-up machinery, this sector was given special privilege by the establishment of the Supreme Agricultural Council. In addition to drawing up agricultural plans, the Council was also responsible for

supervising the follow-up process of these plans, an area in which it achieved considerable progress. It published many reports, and organised many conferences aiming at agricultural development. On 12th September, 1973, it issued decision No. 4867 which required the establishment of a Supreme Committee for supervising agricultural plans and their follow-up. The Committee in its turn formulated 46 sub-committees which contained 280 members selected from various agricultural organisations and staff from Iraqi universities (Supreme Agricultural Council, 1978, p.3). The main task of these sub-committees was to evaluate all agricultural projects and to propose new ones for the national development plan of 1976 - 80, as a consequence of which 46 studies and proposals were prepared concerning all aspects of agriculture.

Once again, in 1978, further sub-committees were set up to re-evaluate agricultural projects, to indicate which were in difficulty and to suggest appropriate solutions. Many studies were carried out in this regard such as: Evaluation Study and productivity plan for Al-Nai State Farm - University of Baghdad, 1979, Technical and Economic Study of Al-Hawega Farm Project - University of Mousel, 1978, The Destined Agricultural Resources for the State Farms - Supreme Agricultural Council, 1978, and the like. All these studies mentioned the deficiencies and the progress of each

project.

Nevertheless, many agricultural projects continue to suffer from poor performance which affects the growth of this sector and thus, the acceleration of the nation's economic development. Therefore, it would be very useful to investigate the means by which projects performance has been monitored, the devices used for planning and control of projects at the micro level, and the role of accounting information and techniques in agricultural project development. All these questions and many others may find answers through the discussion of the Greenhouses State Farm Projects in the following chapters.

CHAPTER SEVEN

CASE STUDY I

THE APPRAISAL OF THE GREENHOUSES FARM PROJECT IN AL-RASHDIHA

(THE BULGARIAN GROUP)

7.1 Introduction

Project appraisal is an important element in the formulation of economic programmes that comprise the framework for a country's economic development activities. Its main purpose is to examine a project, ascertaining as far as is possible that the project will produce appropriate benefits in accordance with national economic development targets. It attempts to answer many questions, not only as to the intrinsic soundness of a proposed project, but also regarding the economic plan of which the project will form a part. Accounting information and techniques play a leading role in this process.

This chapter deals with five major features; the preparation of the project; the preparation of its feasibility study; the project in operation; comparison between the planned and actual performance, and measuring the gap between objectives and actual performance.

7.2 Structure of Agricultural Administration in Iraq

The agricultural sector is of special importance to the Iraqi economy, both for its contribution to the national economy and in its supply of raw materials to industry. State farms are considered a major sector in the agricultural field. In order to consolidate and

increase the participation of these farms in agricultural production, the government enacted Law No. 50 of 1972 which set up the General Establishment of Agricultural Administrations (GEAA).

The purposes and objectives of this Establishment are the control and management of all state farms in the country,with specific emphasis on the completion of certain agricultural projects. Figure (7.1) shows the place of the Establishment in the Ministry of Agriculture, and its affiliated organisations.

The General Establishment of Agricultural Administrations is constituted from eight geographically distributed agricultural administrations, among them Al-Khalis Agricultural Administration, which were created to support the state farms. Emphasis is placed on encouraging the exploitation both of crops that were usually imported and those that could be exported.

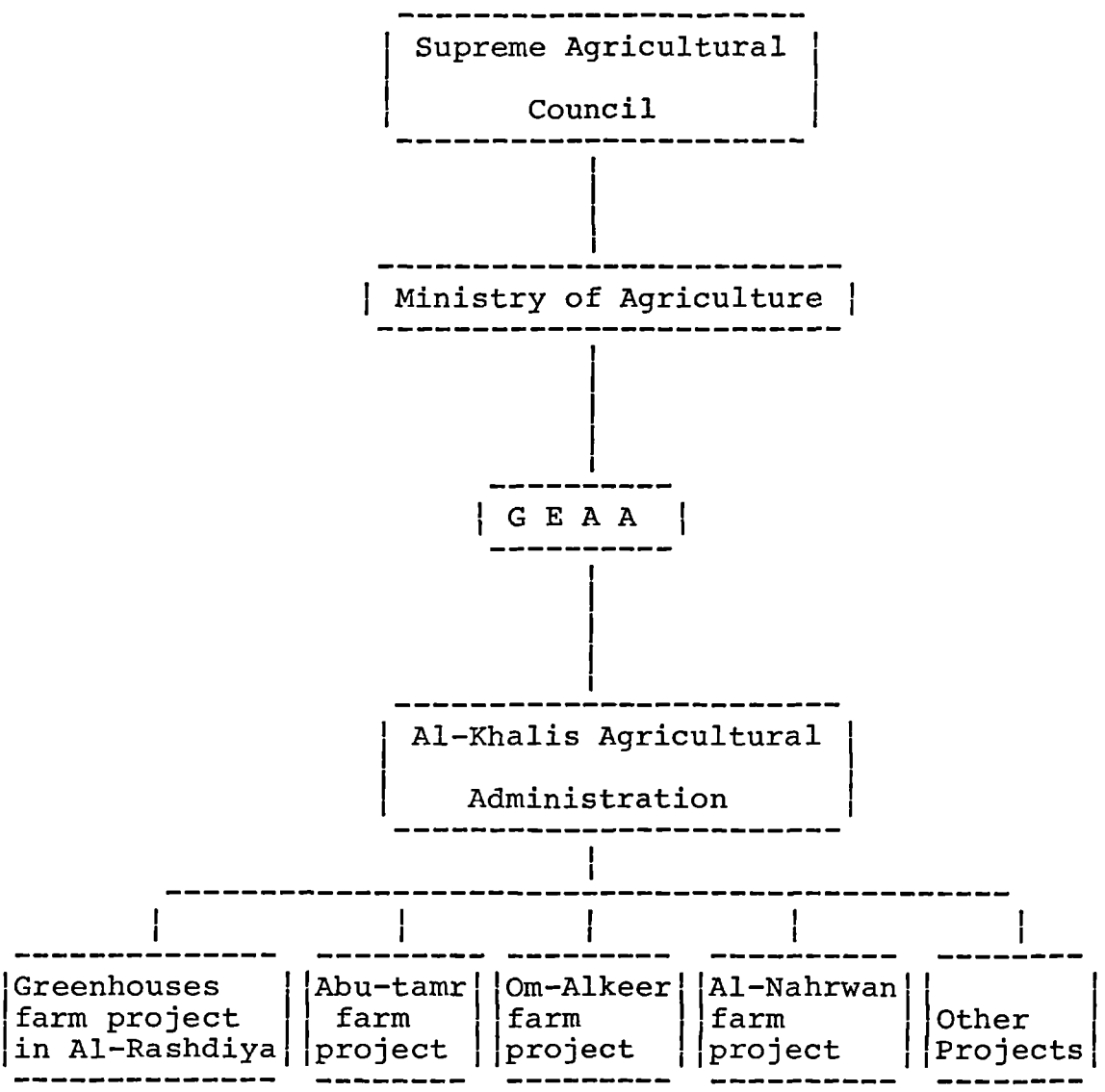
Iraq is therefore adopting a comprehensive agricultural programme to use modern technology for better production,in addition to developing existing socio-productive relationships into those of an advanced socialist type.

7.3 Accounting and Auditing Environment

Law No. 50 of 1972 required the application of the Government Accounting System (G.A.S.) in the GEAA and its affiliated enterprises, in accordance with Ministry

Figure (7.1)

Structure of Agricultural Administration in Iraq



of Finance regulations (1). The Greenhouse farm project in Al-Rashdiya has no official accounting department, all the accounting transactions and auditing being carried out in the Accounting Department of Al-Khalis Agricultural Administration, on the basis of data provided by the accounting clerk appointed to the project.

However, the above law required the GEAA and its affiliated organisations to apply two different budgets, the ordinary budget for current expenditure, and a development budget for carrying out the national development plan.

7.3.1 Ordinary Budget Accounts

Law No. 57 of 1972, which concentrated on the GEAA's financial independence from the Ministry of Agriculture budget, required that the funds of the GEAA should be drawn, first from the general budget of the nation, second from the sale of revenues of its agricultural products, and third from any other revenues obtained within the framework of its activities (Salih,S.T., 1978, p.45).

In October, 1975 the Ministry of Agriculture issued regulation No. 61852 which linked the GEAA budget appropriation with the Ministry budget, so that the

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(1) It has been previously mentioned that G.A.S. in Iraq uses a cash basis rather than an accrual basis. For more details see Chapter Five (Section 5.3).

Ministry was made responsible for financing the GEAA, and would receive all revenues proceeding from its activities. The Ministry asked the GEAA to submit annual proposed budget estimates, which, after clarification by the Ministry, would then be submitted to the Supreme Agricultural Council and the Ministry of Finance for approval.

Once again, in May, 1977 the Ministry of Agriculture decided to isolate the GEAA budget appropriation from its own budget, on the understanding that the Ministry would continue to finance the GEAA until it became self-supporting from the sales revenues of its agricultural products. For monitoring and control purposes, the GEAA is responsible for the submission of its monthly trial balance and the annual balance sheet to the Ministry of Agriculture.

Under decision No. 380 of the Revolutionary Command Council in 1979, a professional committee was set up to prepare for all the socialist sectors, including the agricultural sector, a Uniform Accounting System (U.A.S.) ,which was to become operable on 1.1.1982, taking the following objectives into consideration (The Supreme Committee of U.A.S. in Iraq, 1981).

1. It should distinguish between capital and current expenditure and between ordinary activities and extraordinary activities.
2. It should adopt the accrual basis in its

transactions.

3. It should provide the necessary accounting information for national accounts, control, and monitoring.
4. It should include " opposite twin accounts " (2) within the Current Operation Account for integration between financial accounting and social accounting.
5. A distinction between capital investment added and capital investment transferred should be made to satisfy the needs of both social accounts at macro level and the economic units at micro level.
6. It should classify the accounts according to the requirements of the value added concept.
7. It should isolate cost accounts from financial accounts and reveal all the cost data in the control centre accounts.
8. It should adopt a decimal classification in the preparation of the chart accounts, in such a way as to allow the use of a computer system to facilitate the task of planning, control, follow-up, and national accounts.

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(2) These accounts are designed to link macro-accounting to micro-accounting. They consist of : Variance of imputed rent account, variance of imputed interest account, valuation difference of finished inventory account, and valuation difference of finished goods purchased for sale account. These accounts appear at the same value on both sides of the Current Operation Account.

7.3.2. Development Budget Accounts

The Planning Board (P.B.) allocates funds for execution of proposed agricultural projects according to the national development plan. The GEAA is required to prepare, for each project in execution, an annual estimate of expenditure, to be submitted to the Ministry of Agriculture and to the Supreme Agricultural Council for approval and then to the P. B. for final ratification. For monitoring and control purposes, the Department of Planning in Al-Khalis Agricultural Administration are required to prepare the following tables and statements at the end of each month, these being submitted to Ministry of Finance/Directorate General of Accounts, Ministry of Agriculture, and the Supreme Agricultural Council:

1. Trial balance.
2. Tables of actual expenditure.
3. Tables of expected expenditure for the following month.
4. Personal debit and credit statements.
5. Cash statement.
6. Bank statement.
7. Expenditure follow-up report.

Furthermore, the department must prepare an annual balance sheet of the national development plan accounts for submission to the department of General Accounts

Auditor in the Ministry of Finance.

7.3.3. Auditing

The Department of Auditing in the Al-Khalis Agricultural Administration is responsible for internal audits of the Greenhouses farm project and other agricultural farms. The accounts of the Administration itself, together with those of affiliated enterprises, are audited by the Auditing Division of the Ministry of Agriculture, whose tasks are restricted to the auditing of financial accounts to ensuring that expenditures and revenues are properly recorded.

Regarding the external audit, the Supreme Agricultural Council usually appoints a professional committee at the end of each year to prepare the final accounts of both the ordinary budget and development budget accounts. This committee has been authorised to check the accounts of the GEAA and its affiliated enterprises (Al-Shaybi, A.E. 1974, p.38). Their report, including their advice and recommendations, should be submitted to the council.

Furthermore, the Board of Supreme Audit is responsible for auditing the GEAA and its affiliated enterprises at the end of each year, side by side with the appointed committee, producing a report to be submitted to the Ministry of Agriculture, Ministry of Finance, and to the Supreme Agricultural Council.

7.4 Preparation of the Project

The National Development plan of 1976 - 1980 pointed out (Articles 8, 9, and 10) the necessity of giving state farms priority over any other agricultural project. Accordingly, preliminary studies have been carried out by the Ministry of Agriculture with a view to establishing many state farms projects ,the largest being the glass (3) greenhouses project in Al-Rashdiya district, which is considered one of the biggest greenhouses projects, not only in the Middle East but in the Arab countries as a whole.

7.4.1. Location

The project is situated 20 Km north of Baghdad city at the motorway junction of Baghdad , Al-Khalis with Al-Rashdiya district, and is designed to co-ordinate and sustain the spontaneous vegetable development taking place in the middle region of Iraq, a region which is ecologically suited to commercial vegetable production.

The total area of the project reaches 200 donums (each donum is equal to 2500 square metres) including buildings and storage facilities. The greenhouses themselves cover a net area of 196 donums, containing 33 greenhouses each of 6 donums in area, and one greenhouse covering 4 donums, which is set aside for seeding.

(3) There are plastic greenhouse projects such as Abu-Tamor and Al-Nahrwan projects.

7.4.2. The Establishment Stages

The first group: The project consists of two groups of greenhouses, the first of which was established by a Bulgarian company (Techno-Export Co.). This group was implemented in the following stages:

1. The first stage consisted of 4 greenhouses which were completed in December 1976. Planting was carried out in two greenhouses immediately after their execution by the foreign company, for the season 76/77.
2. In the next season the project was extended to 8 greenhouses to cover an area of 48 donums.
3. A third stage followed in 1978, with the establishment of an additional 8 greenhouses, to reach the total of 16 greenhouses covering the area of 96 donums.

According to the signed contract between Iraq and the Bulgarian company, Iraq is responsible for the execution of all the civil engineering works, building construction, land reform, electricity power and the foundations, while the responsibility of the Bulgarian company was limited to the supply and construction of the greenhouses, heating boilers, and the supervision of planting for the first season only.

The second group of greenhouses were supplied established by an Italian company (Semi-International Co.) in 1979. This group contained 17 greenhouses, each

except one, with an area of 6 donums. The exception had an area of 4 donums, making a total area for the group of 100 donums.

However, this chapter is concerned only with the reappraisal of the first group of greenhouses (the Bulgarian project) which was evaluated by Al-Khalis Agricultural Administration (4), while the following chapter will reappraise the second phase of the project (the Italian project) which was evaluated by the Supreme Agricultural Council (5).

7.4.3 The Agricultural Process

The cultivation process in the greenhouses contains the following stages:

1. Soil preparation: this task includes the analysis of soil salt content and acidity, cultivation of the soil, treatment with organic fertilizers, and land demarcation in readiness for seeding.
2. Irrigation: the amount of water required for growing plants is dependent on temperature and humidity inside the greenhouses, and varies according to the fluctuations of plant growth.
3. Fertilization: the agricultural process in the greenhouses requires two kinds of chemical

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(4)&(5) The evaluation techniques which were adopted in preparation of the feasibility study for each group, the Bulgarian group and the Italian group, are summarised in Appendices 7.1 and 8.1 respectively.

fertilizers, powder fertilizers for adding during soil preparation, and liquid fertilizers for plant spraying, used at an average of one ounce per week (Al-Azawi, A.K. 1980,p.21).

4. Heating: heating is provided by hot water pipes which are supported by four huge boilers placed in a separate building. The temperature is controlled automatically by a control board in the building. Furthermore, the greenhouses are fitted with automatically ventilating windows which are able to control temperature and humidity inside the greenhouses.
5. Prevention of agricultural diseases: This task is required during various stages of plant growth and appropriate poisons are used according to the nature of the disease.

7.4.4 Marketing

The project is responsible for selling its production throughout the markets of Baghdad, Baquba or Al-Khalis city, using its own trucks for transportation. The sale prices of the produce are usually determined by the State Organization of Fruit and Vegetable Marketing on the basis of government policy, with the assumption that the Iraqi market is able to absorb the production proposed for the project. The project incorporates a Mobilization Department equipped with modern machines

for wrapping cucumbers and automatic machines for tomato classification, separation, and packing. The department was established on the basis of a report by the State Organization of Fruit and Vegetable Marketing which depended largely on the optimistic view of the feasibility study and the project's management about the expected high level of production. It was assumed that the project would be extended until it was able to produce enough vegetables for the Iraqi market and for export to foreign countries.Unfortunately, the project did not fulfil this hope of high production, so that the department remained unused until recently and became a burden on the project costs.

7.5 Preparation of the Feasibility Study

This section is concerned with the feasibility study of the first group of the project (the first eight greenhouses - the Bulgarian project) which was prepared by Mr. Al-Selkeni, as mentioned in Appendix 7.1. The evaluation techniques adopted in the feasibility study are critically appraised in the light of the elements of agricultural project appraisal, which are relevant not only to the project under discussion, but also to similar agricultural projects.

The feasibility study was based on two hypotheses:

1. The project's area: It was assumed that the project

area would be either four greenhouses covering an area of 24 donums, i.e. 6 donums for each greenhouse or eight greenhouses covering an area of 48 donums.

2. The Crop formulation: Three alternatives were assumed to be available for the crop formulation, the first divided the area equally between tomatoes and cucumbers, the second allocated 75% to cucumbers and 25% to tomatoes, and the third, concentrated on cucumbers alone. These alternatives would apply whether or not the project was extended.

This section will identify the merits of the various criteria used for appraising the worth of the project, through a discussion of the shortcomings in the feasibility study. To begin this analysis, it is useful to begin with the financial appraisal of the project.

7.5.1 The Financial Appraisal

The analysis of the project's financial appraisal contains two elements, namely, the examination of the actual criteria employed in the feasibility study and a discussion of the criteria which should have been taken into account in the analysis. In other words, a complete financial appraisal of the first group of the project will be undertaken in this sub-section.

Since the concern is to justify the desirability of the agricultural project within a socialist economy, it is reasonable to distinguish between the social cost-benefit analysis of the project and its profitability analysis, which is based on market prices and may often, therefore, lead to a misallocation of resources.

Therefore, the problem requires an extension of the analysis to include the social aspects of the project, which reflect the real costs and benefits sacrificed and gained by the society as a whole.

Many other fundamental differences between these two analyses could be recognised, for example the absence in private profitability analysis, of the external effects, which whether they are costs or benefits, should be included where the project is being assessed from the social point of view. Furthermore, taxes are treated as a transfer payment when social cost-benefit analysis is considered, while they are treated as an expense in the profitability analysis. Nor does the latter take into account various development objectives such as balance of payments, the growth of national income etc. Finally, in a profitability analysis the cost of capital is used as a rate of discount, whereas the rate used in the social cost-benefit analysis is the social rate of discount which will be identified later.

However, the starting point of financial analysis

is to specify all the expected receipts and expenditures of the project. These may fall into two categories: (i) the establishment costs and resources expected to be available during the construction period, and (ii) operating costs, revenues, and the rate of return in the operating phase.

7.5.1.1 Establishment Cost

As can be seen from table A7.7, in the feasibility study of the project the establishment costs are broken down into two parts. First, are the works which will be executed by the foreign contractor, including the supply and construction of the greenhouses, heating boilers, and other heavy machines and their accessories. The cost of all these assets had been estimated at 760,000 I.D. before the extension and 1,500,000 I.D. after the extension, figures derived from correspondence between the Ministry of Agriculture and the related foreign companies as approximate costs for the project construction. The straight line method was adopted for the depreciation of these assets at 5% (6).

The second category of items in the table consists of those to be executed by Iraqi labour. Building and

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(6) Since our concern is to examine the project on a CBA basis, it is worth mentioning that depreciation should be considered as a transfer item within the project accounts. It does not represent cash flow since no money physically leaves the project and thus does not represent direct claims on the country's resources. Therefore, it should be excluded from the calculation.

establishments were estimated at 640,000 I.D. before the extension and 890,000 I.D. after the extension. These estimates may support the extension of the project due to the decrease in the greenhouse share of these costs from 160,000 I.D. to 111,250 I.D. and the resultant decrease in the greenhouse share of depreciation costs from 3,200 I.D. to 2,225 I.D. This also applies to the vehicles and agricultural implements items in the table.

The most significant defect of this table is its omission of the cost of the acquisition and adaptation of land, including irrigation work. These costs are a crucial element in deciding on the establishment cost required for the project, and failure to take them into consideration may distort the investment decision (opportunity cost of land will be discussed within section 7.5.2.1.).

Another important point omitted is the amount of physical requirements of the project establishment costs. The decisions to construct 200 houses for peasants and artisans, and to build an out-patient clinic, and a primary school were taken alongside the project establishment decision. Their costs are estimated at over one million I.D.

The table of establishment costs of the project may, therefore, now be re-formed as shown in table 7.1.

The table below indicates the total estimated cost for each of the various sections of the project, which

Table 7.1

Establishment Cost of the Project

	Before the extension	After the extension
1. Cost of land	xx	xx
2. Cost of land adaptation	xx	xx
3. Greenhouses and heavy machines	xx	xx
4. Buildings and establishments	xx	xx
5. Construction of houses (for peasants and artisans)	xx	xx
6. Other community buildings	xx	xx
7. Cost of irrigation work	xx	xx
8. Vehicles and agricultural implements	xx	xx
9. Soil-improvement materials	xx	xx
10. Miscellaneous and unforeseen costs	xx	xx
Total	xx	xx

should be drawn up in such a way as to make clear not only what costs are estimated for each different stages of construction, but also the different authorities involved, if no single authority is responsible for the entire project. For example, the irrigation department is paying for the irrigation construction, the development authority for the project's development, and the public works department for the roads. If there are several agencies involved, this section should indicate

who will pay which costs, so that at a later date reference may be made to it in studying the balance of expenditure for each authority involved.

In addition, a breakdown should be made of the cost of commodities suppliable from the country's own resources, such as materials, labour, and so on; and the cost of the facilities, services and equipment which will have to be imported. This may have a significant influence in considering the financial side in cost-benefit analysis.

Item No.10 "Miscellaneous and unforeseen costs" may be particularly important because it provides for variations, which may occur from changes in costs or to meet the requirements of unforeseen costs, if any, during the period of construction.

7.5.1.2 Operational Costs

The soundness of project formulation and justification analysis depends on the accuracy of estimates of future operational expenses and revenues. The intention is to find whether a project's revenues are able to return the project costs under its terms and conditions of authorisation.

However, the statement of estimated annual production cost and expenses includes the cost of materials and supplies, labour, and other expenses which include depreciation and interest. Each of these

factors will be considered separately as follows.

7.5.1.2.1. Cost of Materials and Supplies

The standard requirements per donum of materials and supplies are stated in table A7.1 of the feasibility study report (Appendix 7.1).

However, Sen, S. R. (1962, p.132) has argued that:

> "In many less developing countries, there are often serious difficulties about deriving useful production functions. Only a very small proportion of the farms use inputs like improved seeds, fertilizers, pesticides, etc. and even these use them at a very low level. As a result, any sample survey that may be carried out may not furnish data adequate enough for a reliable prediction of the response of agricultural production of the region or country as a whole to different doses of inputs of these types. It is no doubt possible to derive production functions for a few research or progressive farms; but these functions cannot by any means be considered to be representative."

Therefore, the technical yardsticks have to be determined separately for different inputs by agronomists. It is also important to check the estimates from time to time through actual field surveys, which may be very useful at the implementation stage in order to identify any variances.

The project's requirements for materials and supplies are stated in tables A7.2, A7.3, and A7.4 for the three alternatives. The feasibility study does not state whether these items are domestically produced or will be imported. A field study of the project produced

the information that seeds, chemical fertilizers, and poisons are imported from abroad and all other items are domestically produced. The distinction between the cost of these items is, as previously stated, necessary for sound appraisal. The costs of the items in the above tables, however, are valued at import parity prices.

Although economic stability is essential for the successful implementation of a project, and this can be ensured only if there is a stability of the general level of prices, the present indications are that prices in Iraq are likely to be unstable for some years to come. Even in a completely socialised economy such as the USSR, where physical controls play a dominant role, it has sometimes been found necessary to relax direct physical controls to a certain extent and to make an increasing use of price policy mainly for supplementing physical controls, to make the allocation of resources conform to the planned pattern and to bring about a balance between demand and supply (Sen, S.R., 1962, pp.187-188).

Therefore it is necessary to consider price fluctuations in the feasibility study of the project and to prepare reliable indices not only for materials and supplies, but for all other factors, since the main problem for the future will continue to be inflation, the impact of which on a project must be realised and taken into consideration. Wilkes, F.M. (1972,p.46)

argued that:

> "Inflation can increase the difficulty of the problem of the assessment or comparison of investment projects in several ways. First, by adding one more exogenous factor to the problem, uncertainty is increased. Second, data difficulties are added to, in that future costs and revenues have to be calculated in terms of future prices as well as future technical processes and ambient economic conditions. Third, 'conceptual' difficulties are increased in respect of any effects of inflation on the validity of decision rules formerly employed."

However, tables A7.2, A7.3, and A7.4 omitted this factor, assuming that the costs would remain constant over the life of the project, an assumption which could well lead to wrong conclusions. Another defect in the above tables is that they ignored the costs of electricity and water supply, which need to be taken into account as supply costs.

7.5.1.2.2. Manpower Costs

The manpower requirement of the project was estimated to be 103 people before the extension, and, after it, 168 people. Their annual total wages and salaries were estimated at I.D. 57,060 and I.D. 81,900 respectively, as shown in table A7.6.

Many arguments can be raised regarding the way in which the cost of manpower is constructed.

First: it seems from the above table that the extension of the project would have no impact on the

manpower employed except on unskilled labour, so that it has little impact on the cost of manpower. This assumption is illogical. If we assume, for example, that eight agricultural supervisors, as shown in the table, can manage the project after the extension, it may be argued that the cost of agricultural supervisors employed before the extension includes some idle capacity cost. Undoubtedly, there is a close relation between the manpower required and the size of a project or the area of the crop. Accordingly, failure to estimate plausible figures for the manpower employed in the project will produce unsound cost calculations and will lead to an inadequate evaluation of the project.

Second: The table contains the costs of wages and salaries prevailing in the year of the feasibility study, without regard to the expected costs during the life of the project. However, the sound appraisal of any project is based on the future costs and benefits during its expected life.

Third: the cost of manpower does not include only wages and salaries, but must contain all other benefits provided for labour in the project such as meals, health services, etc.

Fourth: As shown in table A7.8, the agricultural rotation in the project runs from December to June, which means there is an idle period of almost five months. The cost of manpower within this period is I.D.

23,775 before the extension and I.D. 34,125 after the extension. The question arises as to the duties of the labour force on the farm during this period.

Fifth: according to Iraqi pension Law, the government pays 52% of labour wages and 38% of the salaries of other employees on the project as pension funds. These are represented by the following figures:

	Before the Extension	After the Extension
52% of labour wages	19,531	32,448
38% of other employees salaries	7,410	7,410
Total (I.D.)	26,941	39,858

It is thus necessary that these figures should be added to the cost of manpower of the project.

7.5.1.3 Sales Revenue and Profit

From tables A7.9, A7.10, and A7.11 it seems that expected production and sale prices have been calculated on the basis of static assumptions regarding sales revenue. No attempt has been made to see how the choice will be affected by changes in all these variables. However, in estimating the revenues of a project, allowance should be made for fluctuations in prices and production during the life of the project, for prices for agricultural products generally are subject to substantial seasonal fluctuation.

Thus, a decision must be made about the point in the seasonal cycle at which to choose the price to be used for the analysis, and as can be seen from the above tables, the prices vary from one month to another. In fact, the prices vary within a month, i.e. early and medial products. These products have different prices whereas the column of "price per ton" refers to the average price of early and medial products. Furthermore, prices vary according to the grades of product. The sound price for project analysis may involve making assumptions about the quality of the product, and an allowance for waste products may have to be made.

Nevertheless, estimates of revenues from an investment project should be based on relative price and cost changes in output and input elements. These prices and costs will include raw materials, wages and salaries and other items required by the project which will have an impact on its marginal value product and on its sales revenues. Gittinger, J.P. (1982, p.75) argued that:

> "A change in the relative price of an item implies a change in its marginal productivity - that is, a change in its marginal value product - or a change in the satisfaction it contributes when it is consumed. In economic analysis, where maximizing national income is the objective, a change in the relative price of an input implies a change in the amount that must be foregone by using the item in the project instead of elsewhere in the economy;

> it is therefore a change in the contribution the output of the project makes to the national income. Thus, changes in relative prices have a real effect on the project objective and must be reflected in project accounts in the year when such changes are expected."

Accordingly, it is necessary to take into account changes in relative prices where it is forecast that the movements of prices and costs of items relevant to the project are likely to differ from the inflation of prices and costs in general.

Another item to be taken into consideration, is risk and uncertainty. The feasibility study did not incorporate risk and uncertainty, although it perhaps attempted to approach the problem by considering the pay-back period as an indicator of financial appraisal. The study treated all estimates of future costs and revenues as certain and left the assessment of the effect of risk to be made in an intuitive manner (7).

Tables A7.21, A7.22, and A7.23 in the feasibility study refer to sales revenue, annual cost, and the

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(7) Gittinger, J.P. (1982,p.230) argued that the estimation of an allowance for risk and uncertainty is based on the coefficient of variation of the gross value of farm production and a measure of farmers' risk aversion. He used the following formula to obtain a risk allowance:

$$RA = EV \times N \times V$$

where RA is the risk allowance, EV is the expected value, V is the coefficient of variation, and N is a factor that expresses farmers' risk aversion.

expected profits for the three alternatives. It is generally accepted that a profit-figure is obtained from total revenues minus total costs, but it may be argued that the figures for revenues and costs in the above tables are themselves misleading, since they ignore the timing of gains and costs, so that it is difficult to judge whether or not the project is financially profitable.

There are critical differences between "normal profits" and "economic profits" in the above tables. Normal profits were defined as profits obtained when the sales revenues are equal to the total costs. Since it is generally accepted that there is no profit or loss at the equilibrium point of total costs and sales revenue, the treatment of the interest charge on capital as a profit is incorrect. Economic profits were defined as the surplus from sales revenue after deducting the annual total costs, and represent gross profit, since selling, general, and administrative expenses are ignored.

In table A7.26 an attempt is made to measure some indicators of the project's profitability which can be reconciled with the general framework of the feasibility study. These indicators, which were based on unrealistic figures of costs and revenues, were misleading and thus the appraisal of the project was distorted.

7.5.2 Economic Appraisal

In the preparation of the feasibility study, more attention appears to have been paid to the financial aspects than to the social aspects of the project, and the economic appraisal of the project is ignored. This section briefly discusses some concepts which ought to be taken into account in the social evaluation of a project.

The general framework of a project's economic appraisal is to show whether its benefits exceed its costs. It is not necessary for the project to be financially feasible, but for the total of benefits to the nation to be greater than the cost of the project to the nation. This relationship between the costs and benefits of the project involves discussion of the following items:

7.5.2.1 Project Location

From the economic point of view, the cost of land is what it would have been worth in alternative uses. If the land is to be purchased, the purchase price would properly be shown as a cost in the financial accounts, while the social cost would be the social profitability of the land in its best alternative use. To determine this profitability, inputs and outputs of the alternative uses of land have to be estimated and expressed in numerical terms. However, in converting

the purchase price of land for economic analysis, the opportunity cost would be taken as the economic value. Therefore, the opportunity cost of the land may be viewed as the purchase price, or the cost of tenure, plus a surplus which could be earned in an alternative use. HMSO (1977, p.17) argued that :

> "where land is an important element, as in agricultural development schemes, in principle it should be treated as an annual recurrent cost which represents the land's alternative marginal product expressed at world prices. For the scheme in which land costs are significant this opportunity cost is usually an essential element of the project's design so it should be known."

Al-Rashdiya was selected as the location of the project for five main reasons; first, proximity to Baghdad city; second, the area's location within the agrarian reform programme; third, its suitability for vegetable cultivation; fourth, its proximity to the main roads; and fifth, the area is one of agricultural development. It is not stated whether any other locations were proposed, or whether there were any alternative investment proposals to the one discussed here. In the absence of any analysis of alternative investment proposals for this location, the decision-making authority would not be in a position to pursue the analysis to its logical conclusion.

Moreover, at the feasibility study stage it is necessary to consider the expected consequences of the

decision as to the project's location. The project may have external effects which represent the costs and benefits for the surrounding environment and for the economy as a whole and should be considered as inputs and outputs related to the project which are influenced by its location. These effects are not taken into account in the prices of inputs and outputs of the project itself, but, in evaluating the project from the social point of view, they ought to be taken into account.

7.5.2.2 Valuation of Traded Items

The project costs, whether capital or operating, basically consist of the greenhouses, machinery, equipment, fertilizers, and other raw materials that are imported or domestically produced. These traded items represent a large share of total costs and are expressed directly at border prices (CIF prices at the official exchange rate) (8). To evaluate these items from the economic point of view, it is necessary to establish the relationship between the border and the domestic price. The economic value of a traded item is its import parity value which is derived by adjusting the CIF price to allow for the premium on foreign exchange arising from

(8) The official exchange rate used for the calculation of these items was (I.D. o.3334/$) i.e. one I.D. equal to $3. The cost of the greenhouses and machines, for example, was estimated at $2,280,000 before the extension and $4,500,000 after the extension.

distortions caused by trade policies. This premium is not adequately reflected when the prices of traded items are converted to domestic currency at the official exchange rate. By using the premium on foreign exchange, it is possible to compare the values of traded and non-traded (9) items by the criterion of opportunity cost. Therefore, the value of the traded items must be expressed in foreign exchange by the use of a shadow exchange rate (SER), which is derived by multiplying the official exchange rate by the foreign exchange premium.

Since all costs and benefits in economic analysis have to be valued on the same basis, the production values of the project (cucumbers and tomatoes) have to be treated in the same way as the project costs. If the outputs of the project are viewed as the avoidance of future increases in imports or of export promotion or import substitution, a main objective of the project would be to earn or save foreign exchange. Careful attention should be given in the feasibility study to the capacity to earn or save foreign exchange. This dual role as both a cost and benefit makes foreign exchange a critically important factor in virtually all project appraisals. Nevertheless, the realisation as a result of the feasibility study, that the project would

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(9) See the next section "Valuation of non-traded items."

earn or save foreign exchange, is by itself insufficient. A comparison should be made between the domestic resources sacrificed to earn or save foreign exchange and the amount earned or saved. That is to say, a comparison must be made between the official exchange rate and the shadow price of foreign exchange. Accordingly, it is necessary for the various alternatives production proposals to be compared in respect of their total costs related to potential foreign exchange earned or saved.

7.5.2.3 Valuation of Non-traded Items

It was recommended in the previous section that the traded items of the project be valued at shadow prices in order to reflect their costs and benefits to society. Therefore, it is necessary to value non-traded items in similar terms to ensure that a common criterion for valuation is adopted. Non-traded items are defined as those inputs or outputs of a project which are not traded across the national boundaries of a particular country, either because of their cost of production or because of restrictive trade practices (Gittinger, J. P. 1982, p.488). Examples of these items in our case study are labour, organic fertilizers, hay, river soil, and the like. Their market prices have to be adjusted for price distortions in order to reflect their economic values. The market prices of the domestic inputs may

incorporate various imperfections as a result of non-competitive pricing, indirect taxes or subsidies (10), and external effects, factors which must all be taken into consideration in adjusting the value of non-traded items.

The economic view of these items requires that their costs must be adjusted by a common yardstick relative to the border prices of the traded items. Non-traded items, by their nature, tend to be cheaper to produce domestically than to import. A gap between border and internal pricing levels is likely to occur as a result of specific excise, purchase taxes, and the various factors which lead to overstating the true social cost of these items. A conversion factor (11) can be used to eliminate the differences between the general level of internal prices and that of comparable border prices if the market price of an item is a good estimate of the opportunity cost. Otherwise it is necessary to adjust the prices to eliminate market

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(10) Taxes and subsidies will be dealt with in the following section, "Transfer payments".

(11) A conversion factor (CF) represents the ratio of the shadow price or value in terms of foreign exchange to the domestic market price. In other words, it represents the inverse of one plus the effective duty or subsidy rate, that is,

$$CF = \frac{\text{border price}}{\text{domestic price}} = \frac{1}{1 + t}$$

where t is equal to (- duty rate) or (+ subsidy rate). (Ray, A. 1984, p.51).

distortions, after which they should be multiplied by the conversion factor in order to obtain the economic values.

As far as labour is concerned, the evaluator of the project (table A7.6) distinguished between unskilled labour and agricultural labour, although the low salary paid to each (I.D. 30 a month) suggests that they should both be considered as unskilled labour. However, distinction between skilled and unskilled labour is of great importance in economic analysis. In most developing countries, including Iraq, skilled labour is in short supply and would in all probability be fully employed. In such cases, it is reasonable to charge the project with the full market cost of such labour, which is assumed to provide a reasonably satisfactory measure of the opportunity cost (marginal productivity) of labour in its alternative use.

To determine the economic value of unskilled labour employed in the project, it is desirable to consider the sources from which it is drawn. If the project uses unskilled labour which has been unemployed, it should be valued at zero opportunity cost (the social cost of employing such labour) because its use in the project does not entail any loss of production anywhere else in the economy. Employing unemployed labour would, therefore, cost the economy nothing in terms of foregone output. Accordingly, the actual wages received by such

workers would overstate the real social cost of employing them.

Where labour is employed which has been withdrawn from other sectors in the economy, the economic appraisal may be different. Under such circumstances, the shadow wage rate (SWR) (12) should be used to consider what would be foregone elsewhere in the economy as a result of withdrawing labour from its current activities. In both cases, however, using the market price for labour in appraising its value could lead to an overstatement of the real social cost of labour being employed in the project.

7.5.2.4 Valuation of Transfer Items

In the financial analysis of a project, tax payments are clearly a cost item, while subsidies represent a return or benefit to the project. These two items are not included either in the financial analysis or elsewhere in the feasibility study.

(12) The shadow wage rate (SWR) is defined as the opportunity cost of employing additional labour in terms of output foregone elsewhere in the economy (HMSO, 1984, p.15). Generally speaking, despite the fact that shadow prices are fictitious ones that may be assigned to products of cost elements, they are considered as a convenient tool for evaluating projects under the domain of the public sector. They attempt to give a better approximation to the relative importance of production factors and products to the economy. In this sense shadow prices may be used as a practical tool in evaluating the objectives of economic policy.

Confusion may arise between the financial and economic analysis over the question of taxes and subsidies. In the financial analysis, market prices are used, which normally take into account the effects of taxes and subsidies. These items are treated from the economic point of view as transfer payments, since one part of the economy would be adversely affected by the amount of tax, whilst another part would benefit. Therefore a tax payment is merely a transfer of payments from one sector of society to another, and hence is irrelevant to the social costs or benefits. Accordingly, such payments should be excluded from the economic calculation.

The case of subsidies is the opposite to that of taxation. If, for example, a project is able to purchase fertilizer at a subsidised price, that would reduce its costs and thereby increase its benefits, though the social welfare of the economy as a whole would remain unchanged. Such a benefit is therefore unreal, and the full cost of the fertilizer should be taken into consideration.

Some other items namely, interest on capital and depreciation, included as costs in the financial calculation are transfer payments and should be omitted from the economic point of view.

Interest on capital is treated as a part of the total return on the capital available to the society as

a whole, and hence it is not considered as a cost to society. For this reason, it should not be deducted from the gross return of the project, but treated as a transfer payment and omitted from the economic accounts. Accordingly, this item should not be included in the feasibility study as a cost (see tables A7.17, A7.18, and A7.19) since the main objective of the study is to measure the social profitability of the project.

Depreciation is generally acknowledged to be a transfer of funds from one account to another within a project. It appears in the profit and loss account as expense and in the balance sheet as a transfer from capital assets to liquid assets. It does not represent an actual cash flow since no money physically leaves the project. Depreciation does not represent a direct claim on a country's resources and no allowance need be made for it in the sense used by accountants. Thus it should be excluded from the economic calculation. Squire, L. and Van Der Tak (1975, p.20) argued that:

> "Depreciation allowances may not correspond to actual use of resources, and should therefore be excluded from the cost stream. The economic cost of using an asset is fully reflected in the initial investment cost less its discounted terminal values."

Accordingly, capital costs should be recorded in the years in which they occur and the deterioration in real value of the assets over time has to be taken into account in the estimate of the economic life of the

project or in the estimates of annual maintenance costs. Thus the costs of depreciation ought to be excluded from the economic appraisal of the project.

7.5.2.5 Risk, Uncertainty and Sensitivity Analysis

Although the problems of risk and uncertainty have received increasing attention in project appraisal (13), the evaluator of the project did not incorporate risk in the project evaluation, but treated all estimates of future costs and benefits as certain, leaving the ultimate decision-making authority to assess the effects of risk in an intuitive manner. If one accepts that future events can never be predicted with complete certainty, it followes that all investment projects involve risk and that an allowance should be made to cover unexpected costs which may arise during the lifespan of the project.

It is widely accepted that a decision on the selection of a project is dependent on the net present value (NPV) of its expected returns, adjusted properly for risk. This requires unbiased estimates of the values of the various elements of the cost and benefit streams through the lifetime of the project. In estimating the values of these elements, it is desirable to consider the range of possible variations. If there

(13) An expository section on the theoretical issues involved in the assessment of risk and uncertainty in the private and public sectors is introduced in Chapter Three.

is uncertainty about yield increments, for example, it is better to show the results in the project appraisal as a range rather than as a single figure. This process gives the decision-maker a better picture of the degree of risk involved in the project than is given by a single-valued calculation. Pouliguen, L.Y.(1970, pp.2-3) argued that:

> "The purpose of risk analysis is to eliminate the need for restricting one's judgement to a single optimistic, pessimistic, or "best" evaluation by carrying throughout the analysis a complete judgement on the possible range of each variable and on the likelihood of each value within this range. At each step of the analysis these judgements are combined at the same time as the variables themselves are combined. As a result, the product of the analysis is not just a single value of the decision variable, but a judgement on the possible range of the decision variable around this value, and a judgement on the likelihood of each value within this range."

Sensitivity analysis is considered as a step towards a more sound evaluation, clarifying the impact of events differing from estimates made at the planning stage. In other words, it involves considering the effect on NPV of possible variations in some of the assumptions made, and may be used to examine how sensitive is a project's NPV in terms of financial prices and economic values.

Sensitivity analysis should be used in the feasibility study to test the effect on the measures of the project's value, should there be any delay in

implementation, an error in the yield estimation, cost over-run, or a variation in any other major variable. The following hypothetical table (7.2) illustrates how the assumption of a one year delay in implementation would affect the financial and economic return of the project. Item No.1 in the table shows no delay in project implementation, while item No.2 assumes a one year delay, and the figure of the NPV would be reduced from 942 to (45) as the result of the delay.

Thus an attempt is made to show the effect of a change in one variable on the NPV of the project. Sensitivity analysis is therefore a technique for identifying and evaluating as far as possible the relative importance of the various items entering the cost-benefit stream, and is a first step towards establishing the degree of risk involved in a project.

7.5.3 Overall Appraisal of the Project

It can be concluded from the above discussion of financial and economic appraisal that the evaluator of the project should firstly identify, and then value the cost and benefit streams for the years of the project's life, starting from the construction year (year zero). Secondly, he should evaluate the project and its proposed extension separately as two projects of different size, since either of them could be launched

Table 7.2

Sensitivity Analysis : Assuming One Year Delay in Implementation

(Thousand of I.D.)

	YEAR							
	0	1	2	3	4	5	6	7
1) Without delay in implementation								
Net cash inflow to project *	(1,470)	530	530	530	530	530	715	
Net present value to project:-								
a) Discount factor at 10%	1,000	0.909	0.826	0.751	0.683	0.621	0.564	
b) Present value	(1,470)	482	438	398	362	329	403	
c) NPV	942							
2) With one year delay in implementation								
Net cash flow to project	(1,470)	(840)	530	530	530	530	530	715
Net present value to project:-								
a) Discount factor at 10%	1,000	0.909	0.826	0.751	0.683	0.621	0.564	0.513
b) Present value	(1,470)	(768)	438	398	362	329	299	367
c) NPV	(45)							

* Net cash flow represents: (total benefits - external costs - total investment - annual costs - salvage value).

at the planned time in year zero. A relative comparison between their cost and benefit streams should then be taken into consideration to determine which of them will provide more benefit to society.

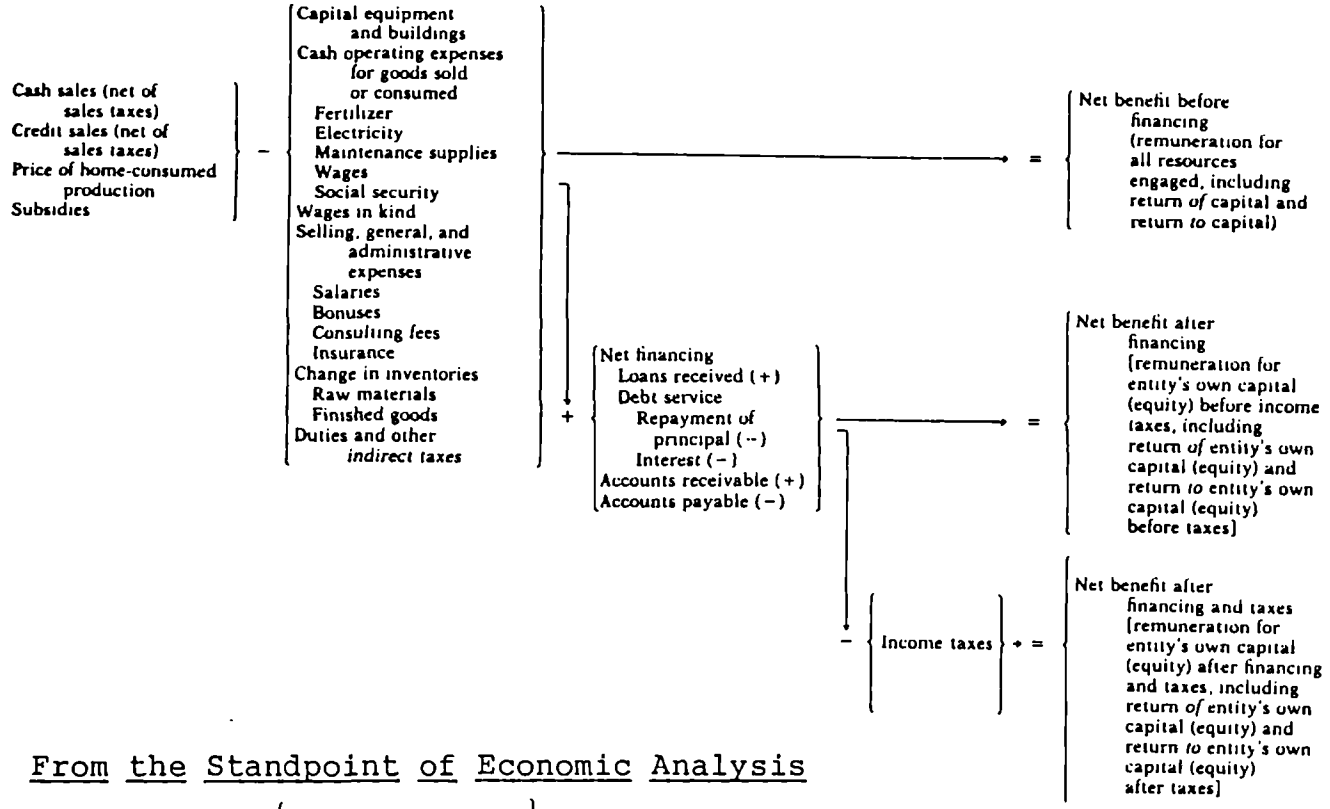
Generally speaking, there are essential differences between financial and economic analysis in determining the incremental net benefit of a project. Some of these differences, such as transfer items, are discussed somewhere in this chapter. The most important non-cash item which affects the incremental net benefit of a project is home-consumed production, representing goods that are produced on a project and consumed by the peasants and labour. This item should be included in both analyses as an economic value or market price of the project's output. Figure (7.2) shows the elements of net benefit from the standpoint of both financial and economic analysis.

However, it can be argued that the project appraisal requires an examination not only of the project itself, but also of all the circumstances surrounding it, to ascertain whether they allow for a reasonable economic and financial return. The feasibility study should therefore investigate various other aspects, technical, managerial, social, and commercial (14). Thus a group of experts with a variety of specialists is required in preparation of the project appraisal (15).

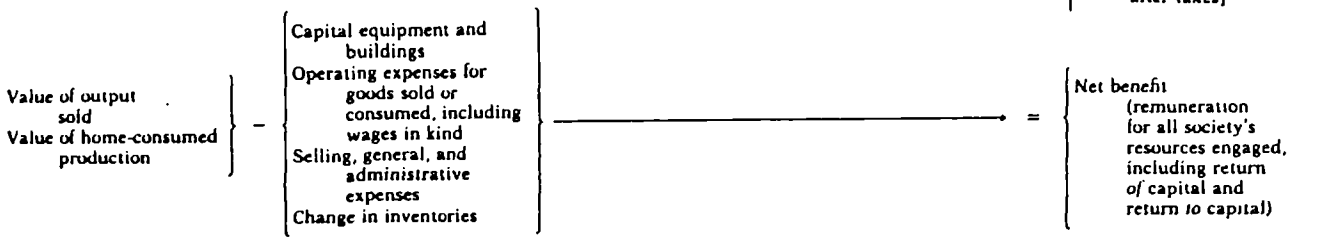
Figure 7.2

Element of Net Benefit

From the Standpoint of Financial Analysis



From the Standpoint of Economic Analysis



Source: Gittinger, J. P. 1982, P.320.

Despite the importance of the financial and economic analyses, they cannot answer all the questions regarding the environmental implications of the project. They are unable to answer, for example, questions about cropping patterns and frequency, job creation, marketing system, price policies, and the like. These aspects are interrelated, so that a judgement about one aspect affects judgements about all the other - Figure (7.3) shows the integrated steps of agricultural project analysis.

Prior to financial and economic analysis, a technical appraisal should be made in order to determine and define the project framework. This appraisal is of considerable importance because all other aspects of the project analysis proceed from it. Location and layout are technical factors that must be taken into account, considering them in relation to the source of water, peasants, labour, power and fuel as well as to the market to be served. There may need to be soil surveys, pest-control surveys, and other local information to

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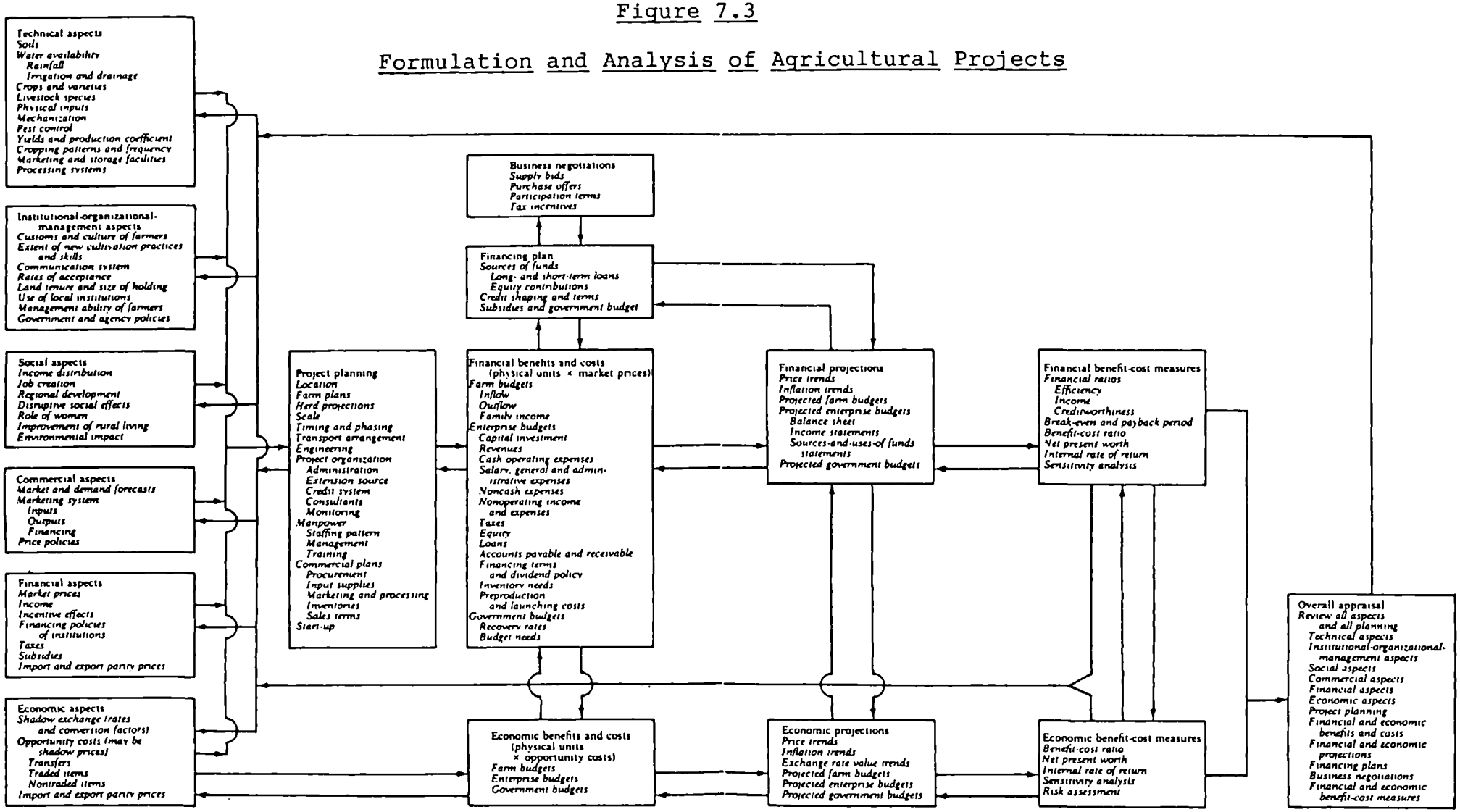
(14) For details see (A) Ripman, H.B. "Project Appraisal" Finance Development, Vol. 1 No.3, December 1964, pp.178-183. (B) Gittinger, J.P. "Economic Analysis of Agricultural Projects", 1982,pp.12-21. (C) King, J.A. "Economic Development Projects and their Appraisal", 1967, pp.4-14.

(15) This requirement was recognised eventually by the Ministry of Agriculture and accordingly the feasibility study of the second stage of this project was performed by a group of experts (See chapter eight).

Figure 7.3

Formulation and Analysis of Agricultural Projects



Source: Gittinger, J. P. 1982, P.39.

identify the quantity, quality and cost of the required inputs.

Inadequacy of management experience and ability is one of the main difficulties standing in the way of economic development in any agricultural project. A faulty decision may generate unforeseen costs which may perhaps lead to project failure. Therefore the appraisal of management, training programmes, and other factors forms an essential element in the feasibility study, and provision must be made for the administrative costs of the project.

The appraisal of the project from a social point of view represents an attempt to answer questions about the impact of the project on the surrounding area, improvement of rural living, regional development, the opportunity of job creation, and similar factors. On the other hand, it reveals the cost to the environment as a result of execution of the project. The investigation of these costs and benefits is an important task of the feasibility study.

The analysis of the commercial aspects of the project requires careful examination in the feasibility study. It focusses upon the proposed arrangements for procuring the goods and services needed for construction, and the arrangements for obtaining the raw materials, power, water, and labour required for the operation of the project and for marketing its product.

The expected sale prices of the products must be considered according to the government's prices policy, and estimated future subsidies should be taken into account.

A further aspect to be added to the diagram in figure (7.3) is "government policy ". Any proposed project must be implemented within the framework of policies set by the government. If serious impediments are put in the way of a project's implementation, then the project cannot be expected to achieve satisfactory results. The greenhouse project has been executed by two different foreign companies (the Bulgarian company in 1977 and Italian company in 1979) according to the trend of government policy.

For example, the sale prices of the project crops are not subject to demand and supply theory. Prices are usually determined by The State Organization of Fruit and Vegetable Marketing according to government policy; therefore present and future government policy should be taken into account in the preparation of the feasibility study of the project.

In conclusion, in the preparation and analysis of the feasibility study, consideration should be given to each aspect discussed above. In general, the feasibility study should first define the objectives of the national plan clearly, deciding whether the proposed project is appropriate. The economic desirability of the

project then should be assessed and the costs and benefits generated valued along the lines discussed.

7.6 The Project in Operation (16)

In June 1976, the Al-Khalis agricultural administration began to execute the project in co-operation with the Bulgarian Techno-Export Company. In December of the same year, the first stage, which consisted of four greenhouses covering an area of 24 donums, was completed. Two of the greenhouses, (12 donums) were planted by the company as an experiment, according to the signed contract between Iraq and the company.

On the basis of the success of the experiment and the results of the feasibility study, Iraq signed another contract with the same company in July 1977, to build four more greenhouses covering an area of 24 donums, thus bringing the area covered by greenhouses to 48 donums (Dawood, M.S., 1978, p.2.). This extension formed the second stage of the project. In 1978, the third stage was begun, namely the building of eight more greenhouses covering an area of 48 donums, bringing the total area covered to 96 donums. This stage, which represented a 100% extension of the project, was executed without a feasibility study.

(16) The data, tables and figures in this section are largely derived from the actual book-keeping records and internal reports of both Al-Khalis Agricultural Administration and the Greenhouses Farm Project in Al-Rashdiya during my field study in Iraq. To avoid repetition in references, references will only be given in this section for data from other sources.

Our discussion covers the agricultural seasons of 1977/78, 1978/79, 1979/80 and 1980/81, provides an explanation of the agricultural process in the farm, the establishment costs, the production capacity, the operating costs, the manpower employed, the revenues and profits, and the efficiency indicators.

7.6.1 Establishment Cost

The following table (7.3) states the total establishment costs for the three stages which were executed by both Al-Khalis Agricultural Administration and the Bulgarian company. The costs of the greenhouses, boilers, machinery and implements, and safety devices were paid to the company in foreign currency at the parity price. This price included the construction cost and supervision of planting of the first season. The table shows the percentage and annual depreciation expense of each item as implemented in the project. The total establishment costs amounted to more than five million Iraqi Dinar (I.D.) and the annual depreciation expenses are calculated at 282,912 I.D.

7.6.2 Production Capacity

The average productivity of a donum planted with tomatoes and cucumbers during the experimental agricultural season of 1976/77 was considered as a standard average and a base for measuring the production efficiency in the future. Table 7.4 following, shows

the production and average productivity of a donum during the experimental season of 1976/77.

In respect of types of vegetables produced the production budgets which were applied in each season were unrelated to the plan in the feasibility study, which was totally ignored. It seems that the purpose of that study was merely to decide whether or not the project should be accepted, and the production alternatives which were discussed in detail in the feasibility study seem to have had no practical application. The seasonal production plans, which state only the area and the type of vegetables to be produced (17), are usually prepared by the manager of the greenhouses project and are submitted to the Al-Khalis Agricultural Administration for approval. The expected operational costs and the amount of the vegetables produced would be assessed accordingly. The following tables (7.5, 7.6, 7.7, and 7.8) show the actual crop produced and the average productivity per donum for the seasons of 1977/78, 1978/79, 1979/80, 1980/81 prespectively.

Many criticisms may be made of the way in which the above productivity tables were constructed :

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(17) For the first time, a proposal for a five-year production plan (1981-1985) was submitted by the project manager (report No. 1007 dated on 22/6/80) to Al-Khalis Agricultural Administration for approval. This report included the type of vegetables required to be produced during these years and the annual production budgets.

1. It was mentioned previously that the main reason behind the project establishment was to supply tomatoes and cucumbers out of season. From the productivity tables for the four seasons (tables 7.5, 7.6, 7.7, and 7.8) it can be seen that the vegetables produced differ from one season to another. This suggests that the production budgets were determined arbitrarily, without reference to the objectives of the project and ignoring the feasibility study, a situation which led to a lack of connection with the national development objectives and uncontrolled implementation.
2. The differences in allocation of the cultivated areas to the desired crops from season to season may indicate confusion in the planning process on the part of the project's management. These changes would certainly lead to differences in the operating costs for each season, thus making comparison between them for monitoring and control purposes very difficult. In fact, we know that the feasibility study concluded that the second alternatives, which allocated the area at 50-50 between tomatoes and cucumbers, represented the optimal choice.
3. In comparison between the average productivity of a donum planted for each product during the experimental agricultural season of 1976/77 (table

7.4) which was considered as a standard average and base for measuring the productivity efficiency, with those shown in the four tables under review, one can note the alarming decrease in productivity in these seasons. The productivity averages were 14-30, 12-14, 4-13, and 5-13 for cucumbers, tomatoes, capsicums, and aubergines respectively. This suggests that the project was facing serious problems potentially leading to failure. An accurate control, monitoring, and feedback system may have been able to retrieve the situation.

Table 7.3

The Establishment Costs of the Three Stages

ITems	Cost I.D.	Depre. Percentage	Annual Depreciation Expense
A. Items Provided by the Co.			
4 greenhouses - first stage	775,000	5%	38,750
4 greenhouses - second stage	995,000	5%	49,750
8 greenhouses - third stage	2050,000	5%	102,500
Boilers	40,200	5%	2,010
Machines and equipment	46,351	15%	6,953
Agricultural equipment	3,381	15%	507
B. Items carried out by the Al-Khalis Administration			
Foundations of greenhouses	888,800	5%	44,440
Soil improvement	33,735	5%	1,687
Marketing trucks	38,192	15%	5,729
Transportation vehicles	73,639	10%	7,364
Furniture	13,115	5%	656
Plastic boxes	8,558	20%	1,711
Administration building	48,710	5%	2,435
Information building	4,732	5%	237
Restaurant building	33,124	5%	1,656
Service department building	47,776	5%	2,389
Bath building	21,263	5%	1,063
Mobilization store	25,373	5%	1,269
Switchboard and transformers store	7,323	5%	366
Garages and workshop	41,387	5%	2,069
Poisons store	69,321	5%	3,466
Fertilizers store	9,545	5%	478
Opened fertilizer store	7,341	5%	367
Total of establishment costs	5,281,866		282,912

Table 7.4

The Amount Produced and Productivity During the Experimental Season (1976/77)

Crop	Planted area (Donums)	Amount produced (tons)	Productivity average (tons/donum)
Cucumbers	6, -	270,4	45, -
Tomatoes	3, 8	80,5	21, 2
Capsicums	1, 6	20,-	12, 5
Aubergines	0, 6	12,5	20, 8
	12, -		

Table 7.5

Production of 1977/78 Season

Crop	Cultivated area (Donums)	amount produced (tons)	productivity average (tons/Donum)
Cucumbers	18,750	566,789	30,23
Tomatoes	18,750	258,182	13,77
Aubergines	6, -	6, -	1, -
Capsicums	3, -	40,245	13,42
Water Melon	-,750	-,920	1,23
Melon	-,375	-,292	-,78
Squash	-,375	-,119	-,32
Total	48, -		

Table 7.6

Production of 1978/79 Season

Crop	Cultivated area (Donums)	Amount produced (tons)	Productivity average (tons/Donum)
Cucumbers	36, -	592,576	16.46
Tomatoes	42, -	582,640	13,87
Aubergines	8,220	21,800	2.65
Capsicums	3,780	21,217	5.61
Water Melon	1,370	9,198	6.71
Melon	1,074	1,775	1.65
Squash	1,389	19,322	13.91
Peas	1,019	-,045	0.04
Okra	1,148	-,317	0.28
Total	96		

Table 7.7

Production of 1979/80 Season

Crop	Cultivated area (Donums)	Amount produced (tons)	Productivity average (tons/Donum)
Cucumbers	42	847,118	20.17
Tomatoes	30	370,608	12.35
Capsicums	12	65,602	5.47
Aubergines	12	69,288	5.77
Total	96		

Table 7.8

Production of 1980/81 Season

Crop	Planted area (Donums)	Amount produced (tons)	Productivity average (tons/Donum)
Cucumbers	36	504,194	14, -
Tomatoes	48	704,369	14.67
Capsicums	12	57,617	4.80
Total	96		

7.6.3 Operating Costs

There are the costs of carrying on the normal activities of the project, and are distinguished in the project's records on the basis of their direct or indirect relation to production. The following tables (7.9, 7.10, and 7.11) show the operating costs for the agricultural seasons of 1978/79, 1979/80, 1980/81. The 1977/78 season is omitted because of lack of available data in the project.

Two points in table 7.9 require clarification:

1. Irrigation water cost: the project depends for its irrigation on the Al-Khalis Irrigation Project which is affiliated to the Al-Khalis Agricultural Administration. The greenhouses project pays nothing for the water supplied and it is the imputed cost of water for each greenhouse is seven Iraqi Dinars. This figure does not match the real costs, but is a notional amount for the purpose of calculating the operating cost.
2. Land use cost: the project land is government property, which is transferred to the project free of charge. For the calculation of the production cost of the project, it is suggested that the land should be recorded as a rented property with a notional charge of nine Dinars per greenhouse a year.

Table 7.9

Operating Costs for the 1978/79 Season

Items	Cost (I.D.)	Percentage of item cost to total costs
Seeds	1,123	.18
Fertilizers	19,678	3.10
Poisons	3,492	.55
Boiler fuel	45,483	7.16
Hay	15,750	2.48
Irrigation water	112	0.02
Total of direct cost	85,639	13.49%
Oil and lubricant	3,104	.49
Spare Parts	18,284	2.88
Miscellaneous materials	6,306	.99
Stationery	-	-
Service equipment	2,443	.38
Maintenance	26,270	4.14
Salaries	37,064	5.84
Total of indirect cost	93,471	14.72%
Labour wages	151,964	23.93
Pension appropriation	13,401	2.11
Total of labour cost	165,365	26.04%
Depreciation	282,912	44.56
Land use	860	0.14
Insurance	1,560	0.24
Selling expenses	1,314	.21
Administrative expenses	3,822	.60
Total costs	634,943	100%

Table 7.10

Operating Costs for the 1979/80 Season

Items	Cost (I.D.)	Percentage of item cost to total costs
Seeds	11,803	1.35
Fertilizers	8,891	1.02
Poisons	26,329	3.01
Boiler fuel	77,765	8.89
Hay	5,375	0.61
Irrigation water	112	0.01
Total of direct cost	130,276	14.89%
Oil and lubricant	4,482	0.51
Spare Parts	19,932	2.28
Miscellaneous materials	10,933	1.25
Stationery	991	0.11
Service equipment	1,746	0.2
Maintenance	37,164	4.25
Salaries	96,298	11.01
Total of indirect cost	171,546	19.61%
Labour wages	240,680	27.51
Pension appropriation	18,380	2.10
Total of labour cost	259,060	29.61%
Depreciation	307,800	35.18
Land use	860	0.1
Insurance	2,604	0.29
Selling expenses	1,602	0.18
Administrative expenses	1,220	0.14
Total costs	874,968	100%

Table 7.11

Operating Costs for the 1980/81 Season

Items	Cost (I.D.)	Percentage of item cost to total costs
Seeds	12,128	1.97
Fertilizers	9,281	1.50
Poisons	9,580	1.55
Boiler fuel	22,636	3.67
Hay	2,634	0.43
Irrigation water	112	0.02
Total of direct cost	56,371	9.14%
Oil and lubricant	3,300	0.53
Spare Parts	6,402	1.04
Miscellaneous materials	331	0.05
Stationery	113	0.02
Service equipment	1,182	0.19
Maintenance	22,918	3.72
Salaries	38,493	6.24
Total of indirect cost	72,739	11.79%
Labour wages	202,329	32.80
Pension appropriation	2,978	0.48
Total of labour cost	205,307	33.28
Depreciation	271,764	44.05
Land use	860	0.14
Insurance	3,696	0.60
Selling expenses	2,750	0.45
Administrative expenses	3,413	0.55
Total costs	616,900	100%

Table 7.11 shows that costs of seed, poisons, boiler fuel, miscellaneous materials, and maintenance are very high, and the costs of fertilizers, hay, and services equipments are low in comparison with those in table A7.7. However, these cost figures do not reflect the true value of materials spent in the given season due to the accounting system applied in the project. As mentioned in the previous chapter, the Governmental Accounting System in Iraq adopts the cash basis which requires that all expenditure and materials purchased in a particular year must be recorded as an expenditure for that year, even if the materials are to be used in the following year. Thus a project may use materials which do not appear in its records for that year because they were considered as expenditure for the previous year. This may account for the stationery expense appearing as zero in table 7.9. Thus, the Governmental accounting system neither provides a true picture of costs, nor does it facilitate monitoring and control purposes.

However, it is necessary to stress the irrelevance of the depreciation figure, which represents more than 44% of the total costs. It has been mentioned that no allowance should be made for depreciation, for capital costs are recorded in the year in which they occur and the deterioration in the value of these assets over time will be taken into account in the estimate of the

economic life of the project (HMSO, 1977, p. 18).

7.6.4 Manpower Employed

It can be seen from these tables that manpower costs are of considerable importance in comparison with the other operating costs, excluding depreciation. The project's administration recognised the influence of these costs on profitability and proposed the appointment of an expert committee to restrict the increase of these costs. Accordingly, in August, 1978, the Ministry of Agriculture set up a committee consisting of the Director of Studies and Research Division in the Ministry and two other experts, one of whom was the agricultural manpower expert from the Bulgarian company (Ministry of Agriculture, September, 1978). The committee's report discussed production at the farm, the manpower and skill requirements and the organisation of manpower,and recommended that the seasonal labour (18) for each greenhouse should be reduced from fifteen to ten workers and the number of officials reduced as much as possible. Their decision led to a reduction of manpower cost from I.D. 355,358 in the 1979/80 season to I.D. 243,800 in 1980/81. The following table 7.12 shows the costs of manpower for the three seasons and the percentage of the total they represent.

(18) Seasonal labour is that employed from September to June of the following year, while permanent labour is employed throughout the year.

7.6.5 Revenue and Profit

Sales revenues of the crops produced during the 1978/79, 1979/80, and 1980/81 seasons reached 162.079, 323.559, and 608.207 I.D. respectively. The following tables 7.13, 7.14, and 7.15 show the cultivated area, production, sale price, and the sales revenues of each type of crop.

The sales revenue for the seasons under consideration shows an increase from the agricultural season of 1978/79, with total revenues for 1980/81 being twice those for 1978/79. However, this improvement in revenue is not an optimistic indicator for the future since it is generated as a result of increasing the sale price, and is not due to enhanced productivity or improved sales volume. It is arguable that the revenue increase is not relevant to the project efficiency, but is related to the national prices policies.

In spite of the revenue increase, the project suffered a loss in these seasons amounting to 472.864, 227.850, and 332.252 I.D. respectively. The following tables 7.16, 7.17, and 7.18, show the profit and loss account for each season.

Table 7.12

Manpower Costs for the Seasons 1978/79, 1979/80, and 1980/81

Item	1978/79 I.D.	1979/80 I.D.	1980/81 I.D.	Total
Seasonal labour	96,577	173,559	127,148	397,284
Permanent labour	68,788	112,501	78,159	259,448
Officials	37,064	69,298	38,493	144,855
Total	202,429	355,358	243,800	801,587
Percentage of total	25.25	44.33	30.42	100%

Table 7.13

Sales Revenue of 1978/79 Season

Crops	Cultivated area (D.)	production (ton)	sale price of ton (I.D.)	sales revenues (I.D.)
Cucumbers	36	593	115	68,195
Tomatoes	42	583	113	65,879
Aubergines	8	22	393	8,646
Capsicums	4	21	494	10,374
Other products	6	30	-	8,985
Total	96			162,079

Table 7.14

Sales Revenue of 1979/80 Season

Crop	Cultivated area (D.)	Production (tons)	Sale Price of ton (I.D.)	Sales revenues (I.D.)
Cucumbers	42	847	215	182,105
Tomatoes	30	370	196	72,520
Aubergines	12	66	528	34,848
Capsicums	12	69	494	34,086
Total	96			323,559

Table 7.15

Sales Revenue of 1980/81 Season

Crops	Cultivated area (D.)	Production (tons)	Sale Price of ton (I.D.)	Sales revenues (I.D.)
Cucumbers	36	504	233	117,432
Tomatoes	48	704	196	137,984
Capsicums	12	58	504	29,232
Total	96			284,648

Table 7.16

Profit and Loss Account for the 1978/79 Season
I.D.

Sales Revenue		162,079
Less: Cost of Vegetables Sold		346,895
Gross Loss		(184,816)
Less: Depreciation	282,912	
Selling Expenses	1,314	
Administrative Expenses	3,822	
		288,048
NET LOSS		(472,864)

Table 7.17

Profit and Loss Account for the 1979/80 Season
I.D.

Sales Revenue		323,559
Less: Cost of Vegetables Sold		564,346
Gross Loss		(240,787)
Less: Depreciation	307,800	
Selling Expenses	1,602	
Administrative Expenses	1,220	
		310,622
NET LOSS		(551,409)

Table 7.18

Profit and Loss Account for the 1980/81 Season
I.D.

Sales Revenue		284,648
Less: Cost of Vegetables Sold		338,973
Gross Loss		(54,325)
Less: Depreciation	271,764	
Selling Expenses	2,750	
Administrative Expenses	3,413	
		277,927
NET LOSS		(332,252)

Since the operating costs for 1978/79 are almost equal to those for 1980/81, (19) it is possible to compare revenues on the assumption that the sales prices are stable as at 1978/79. Hence, the sales revenues of 1980/81 would become 160,306 I.D. and the net loss would increase to (714,662) I.D. Under these circumstances, it could be argued that the project is facing serious problems which need careful attention using eco-accounting techniques, and accurate monitoring and control.

However, the project failed to incorporate these

(19) The reduction of manpower costs, as mentioned in the previous section, may be considered the sole step in this regard which influenced the operating cost of 1980/81.

problems in its final reports, nor was any solution to the problems suggested, apart from ascribing them to technical factors which hampered productivity.

7.6.6 Efficiency Indicators

As a result of the project's losses, several studies (20) were instigated in order to identify the problems and to suggest remedies. Most of these studies focussed on the deficiencies in the project's productivity. Accordingly, many proposed physical budgets and productivity schedules were suggested. The following indicators were used to measure the project performance in order to compare them with the results which they expected from their analysis.

1. Aggregate value added = value of outputs - value of inputs (production requirements costs).
2. Net value added= aggregate value added - depreciation.
3. Works productivity = aggregate value added - total wages.
4. Efficiency of works productivity = value of output - total wages.
5. Net income = total revenues - current expenditures.
6. Economic profit = total revenues - total costs.
7. Profit efficiency = profits - total costs.

(20) The authors of these studies were: Al-dahri, A.M., 1977; Sa'eed, J.M., 1978; Yas, K.S., 1979; Mohamed, M.S., 1981; and Ahmed, A.K., 1982

8. Average return of invested Dinner = total revenues - total costs.

9. Payback period = $\frac{\text{investment cost}}{\text{net profit + depreciation}}$

10. Efficiency of variable costs = $\frac{\text{total revenues}}{\text{total variable costs}}$

The following table (7.19) shows the result of application of the above indicators on the agricultural seasons under consideration.

Table 7.19

The Efficiency Indicators of Seasons 1978/79, 1979/80, and 1980/81

Indicator	1978/79	1979/80	1980/81
1. Aggregate value added	20,033	118,035	194,031
2. Net value added	(262,879)	(189,765)	(77,733)
3. Works productivity	,121	,456	,945
4. Efficiency of works productivity	,859	,793	,441
5. Net income	(182,396)	(237,323)	(49,769)
6. Economic profit	(472,864)	(551,409)	(332,252)
7. Profit efficiency (%)	(74.47)%	(63.30)%	(53.86)%
8. Average return of invested Dinar	,255	,577	,461
9. Payback period	27.8	21.7	87.3
10. Efficiency of variable costs	,52	,69	,95

Whether or not the above indicators reflect the actual performance of the project, it is argued that they do not pay sufficient attention to controlling costs in the future. To achieve this end, a comparison between the planed and the actual results should be made.

7.7 Comparison Between Planned and Actual Performance

Comparison between the planned and the actual results is an effective tool for measuring a project's efficiency in achieving its intended goals. The feasibility study of the greenhouses project ignored its execution, and the project's management was responsible for the preparation of the annual comprehensive plan of the project. Unfortunately, little was done in this regard except the preparation of a physical production budget. The other budgets, such as cash budget, sales budget, operational budget, and the like were omitted. The physical production budget, for example, for the agricultural season of 1980/81, consisted of the following (Dawood, M.S., 1980):

First: the cultivated area:

1. Tomatoes 8 greenhouses (48 D.).
2. Cucumbers 6 greenhouses (36 D.).
3. Capsicums 2 greenhouses (12 D.).

Second: the following table shows the amount of expected crops, seeding timetable, and the end of reaping period.

Third: the quantity of commodities required: these included an assessment of the amount required for the following items:

1. Seeds
2. Organic and chemical fertilizers
3. River soil
4. Poisons
5. Safety device requirements.

TABLE 7.20

The Physical Production Budget for Season 1980/81

Crops	Product-ivity ton/D.	total production	seeding time-table	end of reeping period
Tomatoes	20	960	1 - 15/9	1 - 10/6
Cucumbers	30	1080	16 - 30/9	16 - 25/5
Capsicums	13	156	1 - 20/8	20 - 30/6

The above physical production budget considers only the quantity and quality of the input required for the production without any regard to their costs. Failure to estimate these costs leads to difficulty in establishing the standard cost for each product and consequently, comparison between standard cost and actual cost of the products becomes impossible. Therefore, it may be argued that cost control of the project is non-existent.

However, comparison between the planned and the actual production can provide useful indicators for the

decision-maker. The following tables (7.21, 7.22, and 7.23) show these comparisons for the 1978/79, 1979/80, and 1980/81 season.

An examination of these tables suggest many arguments against the way in which the figures are constructed.

1. The estimated productivity per donum is decreasing season after season. The planned productivity per donum from the cucumber crop, for example, for the 1978/79, 1979/80, and 1980/81 seasons was 50, 42, and 30 tons per Donum respectively. Accordingly, the percentage increases of the actual to planned production shown in these tables are deceptive.
2. Nevertheless, the actual productivity of crops for the three seasons was very low in comparison with that estimated, amounting in most cases to less than 50%. In this regard, it is worthwhile comparing the actual productivity of the three seasons with the experimental season of 1976/77 (see table 7.4). The productivity averages of the experimental season for cucumbers, tomatoes, capsicums, and aubergines were 45, 21.2, 12.5, and 20.8 ton/D. respectively. If these figures are taken as a basis for the comparison, the achieved productivity percentage of a donum for the three seasons would be as in table 7.24.

Table 7.21

Comparison Between the Planned and Actual Production for the 78/79 Season

Crops	Planned Production			Actual Production			(%) of Actual to Planned Production
	Amount (ton)	Cultivated area (D.)	Productivity ton/D.	Amount (ton)	Cultivated area (D.)	Productivity ton/D.	
Cucumbers	1800,-	36,-	50	592,567	36,-	16,46	32.9
Tomatoes	840,-	42,-	20	582,640	42,-	13,87	69.4
Aubergines	106,860	8,22	13	21,800	8,22	2,62	20.4
Capsicums	56,700	3,78	15	21,217	3,78	5,61	37.4
Other vegetables	-	6,-	-	-	6,-	-	-
		96,-			96,-		

Table 7.22

Comparison Between the Planned and Actual Production for the 79/80 Season

Crops	Planned Production			Actual Production			(%) of Actual to Planned Production
	Amount (ton)	Cultivated area (D.)	Productivity ton/D.	Amount (ton)	Cultivated area (D.)	Productivity ton/D.	
Cucumbers	1932	42	46	847,118	42	20.17	43.8
Tomatoes	525	30	17.5	370,608	30	12.35	70.6
Aubergines	180	12	15	65,602	12	5.47	36.4
Capsicums	180	12	15	69,288	12	5.77	38.5
		96			96		

Table 7.23

Comparison Between Planned and Actual Production for the 80/81 Season

Crops	Planned Production			Actual Production			(%) of Actual to Planned Production
	Amount (ton)	Cultivated area (D.)	Productivity ton/D.	Amount (ton)	Cultivated area (D.)	Productivity ton/D.	
Cucumbers	960	36	30	504,194	36	14.-	52.5
Tomatoes	1080	48	20	704,369	48	14.67	65.2
Capsicums	156	12	13	57,617	12	4.80	36.9
		96			96		

Table 7.24

The Productivity Percentage of a Donum Related to the Experimental Season of 1976/77

Crops	1978/79 (tons/D.)%	1979/80 (tons/D.)%	1980/81 (tons/D.)%
Cucumber	36.58	44.82	30.11
Tomatoes	65.42	58.25	69.20
Capsicums	44.88	46.16	38.40
Aubergines	12.74	26.30	-

The above percentages give a clear picture of the difficulties and problems which confronted the project.

3. It is worth mentioning that the reason for the establishment of the project was to produce cucumbers and tomatoes following one of the three proposed alternatives regarding the cultivated areas. The planned productivity of the seasons discussed was not in accordance with these proposals, as regards either the type of vegetable planted, or the proposed area of cultivation of each product. The physical production budgets of the seasons were drawn up in an arbitrary manner, creating considerable difficulty in the comparison and control processes.

4. The sale prices of products, which are determined

by the State Organization of Fruit and Vegetable Marketing, depend partly on product costs as an indicator for the price decision. Since there is no accurate cost system in the project, the price decision would accordingly be inaccurate.

5. If the current prices of products for years 1979, 1980, and 1981 are considered for both planned and actual production, the loss in revenues as a result of the deficiencies in the project can readily be recognised. The following tables (7.25, 7.26, and 7.27) show the variations in revenue for the three seasons.

Table 7.25

Sales Revenue Comparison Between the Planned and Actual Outcome for the 1978/79 Season

Crops	Planned revenue (I.D.)	Actual revenue (I.D.)	Variations (I.D.)
Cucumber	207,000	68,195	(138,805)
Tomatoes	94,920	65,879	(29,041)
Aubergines	41,996	8,646	(33,350)
Capsicums	28,010	10,374	(17,636)
Other products	None	-	-
Total	371,926	153,094	(218,832)

Table 7.26

Sales Revenue Comparison Between the Planned and Actual Outcome for the 1979/80 Season

Crops	Planned revenue(I.D.)	Actual revenue(I.D.)	Variations (I.D.)
Cucumbers	415,380	182,105	(233,275)
Tomatoes	102,900	72,520	(30,380)
Aubergines	95,040	34,848	(60,192)
Capsicums	88,920	34,086	(54,834)
Total	702,240	323,559	(378,681)

Table 7.27

Sales Revenue Comparison Between the Planned and Actual Outcome for the 1980/81 Season

Crops	Planned revenue(I.D.)	Actual revenue(I.D.)	Variations (I.D.)
Cucumbers	223,680	117,432	(106,248)
Tomatoes	211,680	137,984	(73,696)
Capsicums	78,624	29,232	(49,392)
Total	513,984	284,648	(229,336)

However, in examining the total figures for planned revenue in tables 7.26 and 7.27, it can be seen that the project's management reduced it from 702,240 I.D. for the 1978/79 season to 513,984 I.D. for the 1980/81 season as an attempt to match the actual revenues which were comparatively very low. This may indicate that the project's management did not grasp where the fault lay and/or the planned figures were determined arbitrarily.

Although the problems of the variations in revenues between the planned and actual outcome should be given considerable attention, it seems that neither the project's management nor the controllers at the sectoral level incorporated them in their final reports, which were limited to the consideration of the actual project productivity, while the financial profitability and the social aspects were ignored.

7.8 Measuring the Gap Between Planned Objectives and Actual Performance

In considering the Greenhouse project, it is clear that the deficiencies of the project can be largely ascribed to the absence of effective planning and control systems. This has resulted in an actual performance unrelated to that expected or planned, and as a consequence, the project has continued to operate inadequately, without regard to the extent to which the desired objectives are attained.

In the control process, three interrelated stages can be distinguished according to Arnold, J. and Hope, T. (1983, p.269).

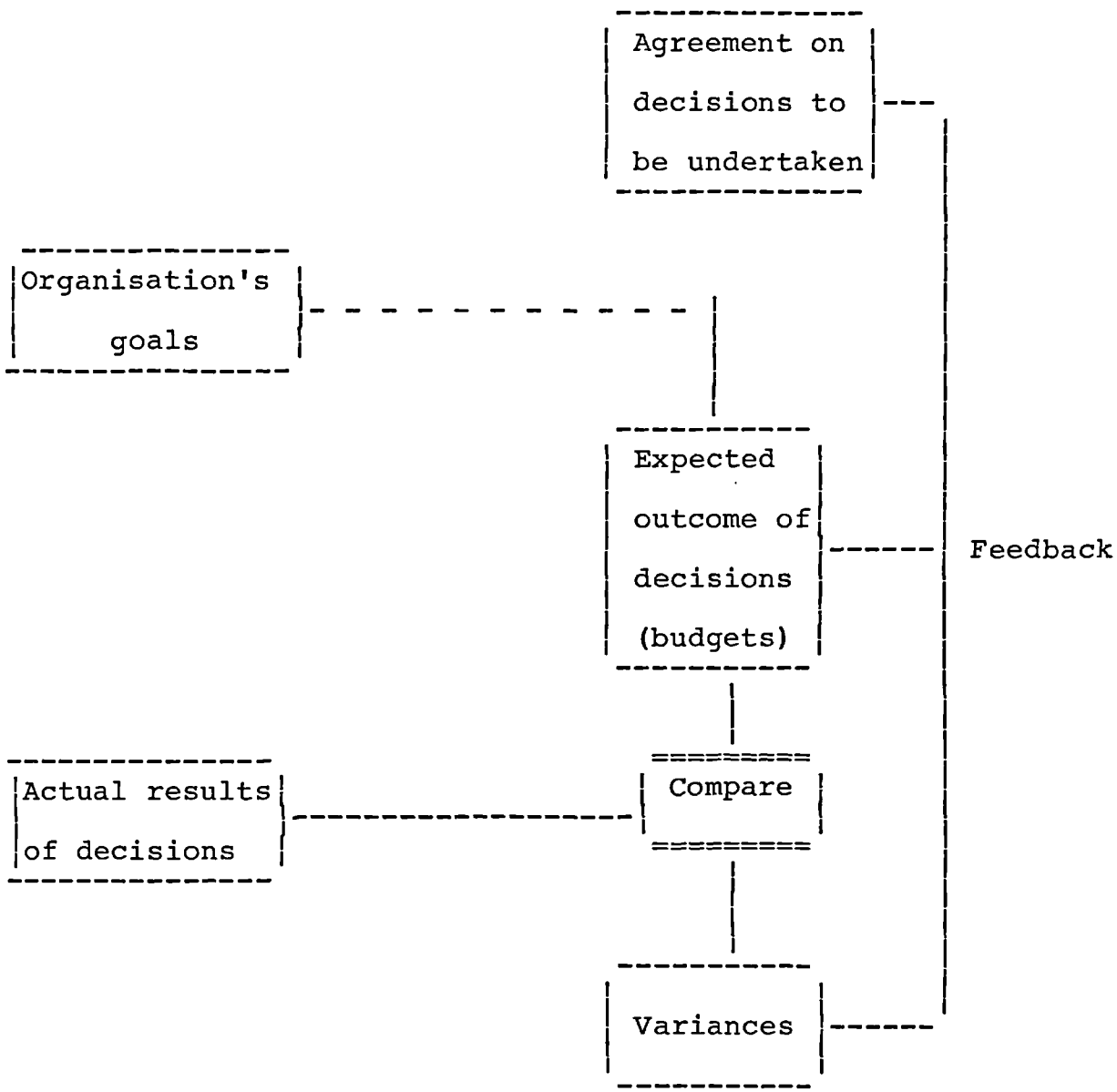
> "We might say that the control process involves three sequential, but inter-related stages: the recording of actual performance, the comparison of actual performance with expected performance and, as a linking stage, the provision of regular feedback to allow continual monitoring of events."

These three steps are brought together in the following figure (7.4) to depict a simplified view of the control process.

The recording of the actual performance of the project, as noted previously, is carried out in accordance with the Government Accounting System which is based on cash-basis accounting. Under this method, sales are not recorded until the period in which payment is received in cash, while costs are subtracted from

Figure 7.4

The Control Process



Source: Arnold, J. and Hope, T. 1983, p.270.

sales in the period in which they are paid for in cash. Use of the cash basis in a project therefore prevents measurement of net income in the accounting sense, because it does not reflect either the realisation or the matching concept.

Thus many of the shortcomings in actual performance are related to the application of the Government Accounting System because of its failure to disclose appropriate information for planning and control. However, the project's inadequate performance continued after the change to the Uniform Accounting System. This would suggest that the failing lies not only in the accounting system itself, but also in defects in the follow-up and monitoring processes.

Accounting practice and techniques thus, play an important role in project planning and control which in turn influence the managerial decision-making aspects in the implementation stages. The need for uniformity in accounting in Iraq derives largely from the necessity to harmonize the planning and control processes of economic activities. The system is also concerned with the uniformity of accounting plans, the disclosure system, and the financial period.

7.8.1 Budgets as Plans

In accounting terminology, budgets are fairly tentative plans expressed in financial terms, and

covering a specified period of time (Anthony, R.N., 1965, p.316). Budget targets represent the goals of an enterprise; they may be formulated for the enterprise as a whole, or for any sub-unit. A master budget summarises the objectives of all sub-units of an enterprise: sales, production, and so forth, quantifying expectations regarding future income, cash flows, financial position, and supporting plans. To qualify as plans, budgets must be subject to revision, otherwise they refer to decisions rather than plans. Budget development within the enterprise can best be considered as an iterative process, in which initial proposals are most commonly developed by line managers for separate segments of the enterprise. When budget proposals have passed through all management levels, they are incorporated into the agreed budget (Amey, L.R. and Egginton, D.A., 1973, p.451). It must be stressed at this stage that the benefits of any system of budgeting should be judged in relation to the costs of setting up and operating the system. No managerial activity should be viewed in isolation from its attendant costs and benefits (Arnold, J. and Hope, T., 1983, p.267).

However, the design and content of budgets will depend upon the requirements of a project. In the case of a project of some size and importance, the following budgets, at least, ought to be prepared.

1. Sales budget: this should be prepared early in the

budget process, for it affects most of the other budgets. It proceeds from the forecast of demand for the project's products at the expected sale prices. Since the purpose of the project is to satisfy the high demand for vegetables in the middle region of Iraq, all of the project's production is assumed to be absorbed by the market, and there are no forecasting problems.

Nevertheless, the project should schedule its expected sales in accordance with the expected sale prices. The Iraqi uniform accounting system includes such a budget and Table 7.28 shows the formulation of the sale budget as recommended by the system.

The selling expense budget follows after the preparation of the sale budget. It is a relatively straight-forward task which is influenced by the sales budget. In addition, as long as the market can absorb the full production capacity of the project, the sales and production budgets will be equal in physical terms.

2. Manpower cost budget: It is well known that the price of labour in a free market economy would be determined by its marginal product value. That is, the wage would be equal to the value of the additional product that one additional labourer could produce. This concept may not be followed

Table 7.28

The Formulation of Sales Budget as Recommended by the Iraqi Uniform Accounting Ststem

Products	Charts of Accounts Codes	First Season		Second Season		Third Season		Fourth Season		Total		Planned of the previous year		Planned of the prior to previous year	
		Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Total of values															

Source: National Centre for Consultants and Administrative Development, The Uniform Accounting System, Iraq, 1983, p.6.

exactly in a socialist economy, such as Iraq, due to the consideration of employment benefit. Nor is it desirable to hire functionless labour. However, it can be seen from the previous sections that the manpower costs in the project have accounted for a considerable proportion of the total operation costs for each year under examination and the manpower cost increased year by year regardless of the size of production. Therefore, a budget of the manpower cost may identify the number of employees required in accordance with the expected cultivated area. Table 7.29 shows a manpower cost budget as recently applied in the Iraqi public sector.

3. Capital expenditure budget: This is essentially concerned with the estimated cost of new capital assets required for the future, including the cost of replacing existing assets, the cost of project expansion, if any, and the costs required for new products. The estimation of the capital budget elements is susceptible to an economic analysis (Anthony, R.N. and Reece, J.S. 1983, p.882). The required funds for each estimated item can be determined in the budget. Table 7.30 shows the formulation of capital expenditure budget.

Table 7.29

The Formulation of the Manpower Cost Budget as Recommended by the Iraqi Uniform Accounting System

Charts of Accounts Codes	Accounts Name	Cost Centres					Total	Comparison		
		Production	Production service	Marketing	Administrative	Capitalistic		Planned of previous year	Planned of prior to previous year	Actual of prior to previous year
	No. of clerks No. of labours No. of un-Iraqi labours No. of temporary labours									
	Total									
311 3111 ⋮ 312 3121 ⋮ 313	Clerk's cash salaries Salaries ⋮ Workers' cash wages Wages ⋮ Un-Iraqi workers' wages									
	Total									

Source: National Centre for Consultants and Administrative Development, the uniform accounting system, Iraq, 1983, p.9.

Table 7.30

The Formulation of the Capital Expenditure Budget as Recommended by the Iraqi Uniform Accounting System

Charts of accounts	Accounts name	Aggregate costs	Required funds	notes
111	Land			
112	Buildings,Construction and roads			
113	Machine & Instruments			
114	Transportation means			
115	Tools & Moulds			
116	Furniture & Clerical equipment			
117	Plants & Animals			
118	Deferred revenue expenditure			
Total				

Source : Ibid, p.13.

4. Cash budget: For financial planning purposes, the above budgets should be translated into cash receipts and expenditures. This process results in the cash budget. The data required for the cash budget may be analysed relative to both the short-term (monthly cash budget) and the long-term (year or more) cash position of the project (Anthony, R.N. and Hekimian, J.S., 1967, p.103). It is important to stress that the project's cash flow is far from straight-forward. For this reason a precise cash budget should be prepared as shown in Table 7.31

7.8.2 Budgets as Control Devices

It can be argued that budgets represent an integral part of the internal control model. The accuracy of a control model in any project may be seen through its response to the discrepancy between the planned and actual positions, which should be incorporated in the control model in order to monitor these interactions. If the pursued targets of a project are to be attained, it is necessary to forge stronger links between the desired and the actual results, for the budget does not, of itself, guarantee the attainment of its objective. It merely shows, by revealing variances, to what extent the control has been effective (Amey, L. R. and Eggington D.A., 1973, p.563).

Table 7.31

The Formulation of the Cash Budget as Recommended by the Iraqi Uniform Accounting System

Chart of account	Accounts name	Seasons				
		First	Second	Third	Fourth	Total
	Cash receipts					
	Cash balance beginning of year.					
43	Cash sales revenues					
44	Revenues from others					
46	Interest & rent of land					
47	Subsidies					
48	Transferable revenues					
49	Other revenues					
Total						
	Cash disbursements					
31	Wages & salaries					
32	Physical requirements					
33	Services requirements					
34	Contracts & services					
35	Cost of goods purchased for sale					
36	Interest & rent of land					
38	Transferable expenses					
39	Other expenses					
Total						

Source:Ibid, p.14.

Since our concern is to appraise a project in a socialist economy, the effectiveness of the control model, however, is viewed in terms of economic efficiency. In other words, controls are only useful if they are effective and economically justified and this leads to the use of to the planning-programming-budgeting system (PPBS).

PPBS originated in the early 1960's in order to facilitate managerial and economic decision-making at the higher levels, with the main emphasis on resource allocation. It is characterised by an economic orientation, combined with the maintenance of managerial accountability. PPBS is applicable, not only in the government sector, but also in enterprise accounting. Enthoven, A.J. (1977, p.64) described the system as follows:

> "PPBS is oriented towards economic planning and has its roots in both performance budgeting and economic analysis. PPBS attempts to integrate planning-budgeting-accounting-reporting-stewardship into one coherent and integrated system. Its aim is to convert the regular annual budgetary routine to an evaluation and formulation of projects in the light of the future objectives and policies, and to establish such policy-making on a more rational footing by means of data on individual and/or social costs and benefits of alternative way and output measurements for the attainment of certain objectives and needs".

The essential features underlying the PPBS framework, however, are the specification of basic

programme objectives of an enterprise, analysis and measurement of its costs and benefits over the next several years, and comparison between alternative activities. It may be said, therefore, that PPBS represents the overall approach of which cost-benefit analysis forms one part. Although much has been written in criticism of PPBS, it has never been demonstrated that the basic concepts of the system are unsound.

The PPBS process and its essential activities are described by Jablensky, S.F. and Dirsmith, M.W. (1978, p.216) as follows:

> "1. The objectives of the organization are defined as specifically as possible.
>
> 2. Specific programmes and possible alternatives capable of attaining stated objectives are determined.
>
> 3. Major issues to be resolved in the specification of objectives and development of programmes are identified.
>
> 4. An annual cycle is delineated with appropriate components which include planning, programming, and budgeting steps to ensure approaching the problem area in a rational manner, and to make appropriate amounts of time available for analysis and decision-making at all levels of management.
>
> 5. Recognition that a continuing process of re-examining the programme results in the light of anticipated costs and outcomes is necessary in order to determine the need for changes in stated programmes and objectives.
>
> 6. Recognition of problems that span a single annual cycle so that they can be identified and addressed across periods.

7. Analysis of existing programmes and alternatives concerning probable outcomes and direct and indirect costs.

8. The construction and use of analytical tools necessary to measuring costs and benefits.

9. The continued development of multi-year programmes and financial plans while recognizing that current programme commitments often require resource demands spanning several years.

10. The adaptation of existing performance evaluation and reporting systems, both statistical and accounting, to provide useful inputs to the PPBS concerning resources used and objectives attained."

The above points represent the pillars of cost-benefit analysis. Alternatives are to be compared, costs and benefits are to be specified and measured and decisions taken accordingly. In real-world situations, both accounting and economic factors are taken into account in each of these steps in order to obtain an optimal decision which enables society to make the closest possible approximation to an equitable and efficient allocation of resources (Gramlich, E.M., 1981, p.49). In other words, the accounting information for an accurate planning and control system in any project should be economically realistic and have comprehensive standardised content.

Strictly speaking, two main arguments can be raised against the way in which the greenhouse project is operated. Firstly, as we have previously mentioned, the

project's management did not adopt the feasibility study, nor did they prepare adequate plans to follow. The omission of the plans (budgets) would obviously create ambiguity in the objectives of the project, hence making them difficult to attain. As a consequence, the project would lose the connecting link with the national objectives which had led to its initiation.

Secondly, empirical observation of the project reveals that the adoption of the government accounting system, which lacks of a superior budgetary system, and the absence of qualified management capable of using accounting techniques for planning and control purposes, failed to bring about any progress in the performance of the project. It can be said, therefore, that the deficiencies of the project are attributable to lack of planning and to the omission of a monitoring and control system. The significant causes of the problem have been ignorance of budgets, if any, lack of comparison, insufficient feedback and, as a consequence, failure to take corrective action to correct the variations between the plan and the practice. Therefore, it is plausible to argue that an accurate control system and perfect follow-up are vitally necessary, otherwise the project would continue to be operated in an arbitrary manner, and any development decision for its rescue would be doomed to failure.

CHAPTER EIGHT

CASE STUDY II

THE APPRAISAL OF THE GREENHOUSES FARM PROJECT IN AL-RASHDIYA

(THE ITALIAN GROUP)

8.1 Introduction

The appraisal of a proposed project, whether as an extension of a previous project, or as an independent one, requires careful analysis and investigation of the costs and benefits expected to be generated during its implementation. These costs and benefits should also reflect the net benefit to be gained by the overall economic environment, of which the project will form a part.

Accounting data may provide an accurate yardstick for the planning, decision-making and implementation of the project, and for the monitoring and control, which are of considerable importance for its success.

This chapter discusses the preparation of a major feasibility study which may help to throw some light on the shortcomings of appraisal techniques in practice, and of the feasibility study. Following this, the project implementation will be discussed and a comparison made between the planned and actual results. The final part of the chapter examines the deficiencies of the project and makes recommendations accordingly.

8.2 Preparation of the Project

The experimental 1976/1977 season of the Bulgarian greenhouses group in Al-Rashdiya had produced satisfactorily high productivity, as shown in table

(7.4) in the previous chapter. This encouraged the establishment of another greenhouses project containing 17 greenhouses, all but one of which had an area of 6 donums. The exception had an area of 4 donums, making a total area for the group of 100 donums. A contract was signed with an Italian company (semi-international co.) in 1979 to undertake the project according to the following conditions:

1. Al-Khalis Agricultural Administration was responsible for the execution of all the civil engineering works, building construction, land reform, electricity power and foundations of the greenhouses.
2. The Italian company was responsible for the supply and construction of the greenhouses, heating boilers, machines and other equipment required for the project.
3. The foreign company was responsible for supplying seeds, fertilizers, poisons and other materials for the production of the first two seasons. The costs of these materials would be paid on delivery.
4. The company was responsible for planting, organising and supervising the project for two seasons.
5. The foreign company undertook to meet the following minimum production targets:

A. Tomatoes 37.5 ton/donum.

B. Cucumbers 63.5 ton/donum.

C. Capsicums 25 ton/donum.

D. Aubergines 22.5 ton/donum.

8.2.1 Location

At the time of the decision to undertake the project, no specific location for the site was determined, the ultimate decision being left to the recommendations of the feasibility study. However, the project was undertaken as an extension to the main (Bulgarian) project, which is situated at a distance of 20 km north of Baghdad city at the motorway junction of Baghdad - Al-Khalis with the Al-Rashdiya district, a site chosen for the following reasons:

1. Its proximity to the main roads.
2. The project's proximity to Baghdad city, which represents the biggest consumer centre in the country.
3. The situation of the area within the agrarian reform programme executed by the Al-Khalis agricultural Administration.
4. The suitability of the soil texture of the location for vegetable production.

8.2.2 The Establishment Stages

It has been mentioned that a contract was made with an Italian company in 1979 for building 17 greenhouses,

covering a total area of 100 donums. The contract was conditional upon the completion of all the greenhouses by the beginning of the 1980/1981 agricultural season. A further condition was that these greenhouses should be planted under the supervision of the foreign company. The manpower required for the process would be supported by Al-Khalis Agricultural Administration, and would include engineers, technicians, machinists, unskilled labour and agricultural labour. The cost of the contract was about 3,6 million Iraqi Dinars, exclusive of the cost which was borne by Al-Khalis Agricultural Administration (about 1,5 million I.D.) for civil engineering work, building construction, land treatment, electrical power, and the foundations of the greenhouses.

In the event, the foreign company did not complete all the required greenhouses in the specified time; only six were completed due to lack of efficiency (Directorate of the Greenhouses Farm, 1981, p.19). These greenhouses were planted at the beginning of the season, one with tomatoes and the other five with cucumbers.

The second stage consisted of the building of nine greenhouses which were completed at the beginning of the agricultural season 1981/1982. Thus, the total of greenhouses planted for the 1981/1982 season was 15. The other two, which were required by the contract to bring the total to 17, were completed by the beginning

of the 1982/1983 season.

8.2.3 Preparation for the Season

At the beginning of July in each season, soil cultivation, treatment with organic fertilizers, and land demarcation are performed in readiness for transplanting (Directorate of the Greenhouses Farm project in Al-Rashdiya, 1981, pp. 4-5). Meanwhile, seeding is carried out during August and September in the seeding greenhouse which covers only four donums. In October the seedlings are planted in the greenhouses. Thereafter, the plants are left to grow, and appropriate pesticides and fungicides applied as necessary.

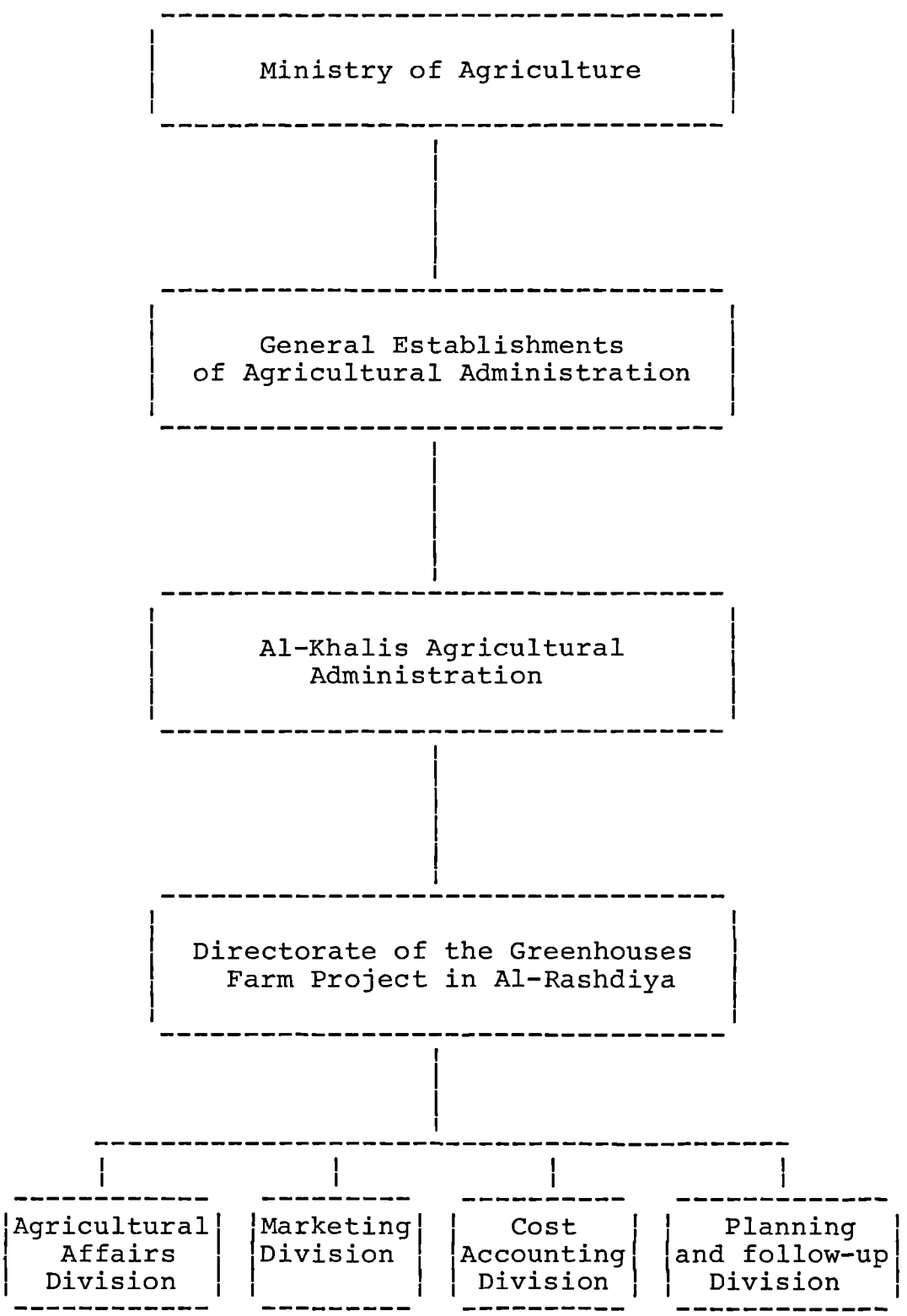
From the middle of December to the end of the following May, the crops are harvested, and during June the plants are broken up and the greenhouses cleaned in readiness for the next season.

8.2.4 Structure of the Project

Due to the acceptance of this project as an extension to the main one in Al-Rashdiya, increasing it from 16 greenhouses covering an area of 96 donums to 33 greenhouses covering an area of 196 donums, many divisions were established to organise information for planning and control (see figure 8.1) (Directorate of the Greenhouses Farm Project in Al-Rashdiya, 1982, p.1):

Figure (8.1)

The Structural Forms of the Project



1. Agricultural Affairs Division: This was headed by an agricultural engineer, and may be regarded as the main division of the project, consisting of all engineers, technicians, agricultural supervisors, and agricultural labour. The division was responsible for all project activities before the establishment of the other divisions.
2. Marketing Division: This consisted of only two officers and some truck drivers. Its main objective was to supply the crop to the domestic market at the prices administered by the State Organization of Fruit and Vegetable Marketing, during the harvest period from December to May of the next year. The division was responsible for remission of the sales revenue to the accounting department in the Al-Khalis Agricultural Administration. It is worth noting that the recommendation of the feasibility study, that the State Organization of Fruit and Vegetables Marketing should be responsible for marketing the crop, was not followed.
3. Cost Accounting Division: This contained only one officer, who was responsible for estimating production costs for the next season. It was his duty also to record the actual operating costs of the current agricultural season in order to compare estimated and actual costs and to identify

cost variations. He reported monthly to the Cost Accounting Department of the Al-Khalis Agricultural Administration.

4. Planning and Follow-up Division: The main objective of this division was to draw up a physical production budget and to compare the planned and the actual production. This division contained only one officer, who reported monthly to the planning and follow-up department of the Al-Khalis Agricultural Administration for preparation of the project's annual report.

8.3 The Preparation of the Feasibility Study

On 8th April, 1978 a committee of five agricultural experts was formulated to prepare a feasibility study of the project. This committee was headed by a member of the Supreme Agricultural Council. On 18th May, 1978 the feasibility study was completed and, with the committee's report, submitted to the Supreme Agricultural Council for approval. The committee concluded that the project should be accepted and located in Al-Rashdiya as an extension to the main project (the Bulgarian project). They justified their conclusion on the grounds that the project seemed financially profitable and was compatible with the desired economic indicators.

The introduction to the feasibility study showed

that Mr.Al-Selkeni, A. played the most significant role in the preparation of this study (1). However, it was compiled in four parts which will be examined and critically appraised in the light of sound agricultural project appraisal, referring to the critical analysis in the previous chapter where appropriate.

8.3.1 Choice of the Project Site

Many factors were considered in the choice of the project's site. The committee argued that the chosen location should be close to main roads, near the market centre of a main city, and within an area with irrigation and an electricity network. Its soil texture should be suitable for agriculture, and the manpower required should be available in the vicinity.

The committee considered two alternatives for the location of the project, namely, the Al-Rashdiya district, or an unspecified area elsewhere. It can be see from the feasibility study (Appendix 8.1) that part three appraised the project from the standpoint of its possible location in Al-Rashdiya, while part two appraised it in the basis of a site outside Al-Rashdiya, with no mention of where these locations might be.

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(1) Mr. Al-Selkeni was an economist in the Department of Planning and follow-up/Al-Khalis Agricultural Administration. He had prepared the feasibility study of the earlier greenhouses project. It is worthwhile mentioning that Mr. Al-Selkeni was not a member of the committee which was authorised to prepare the study.

In view of this approach, it would be useful to refer to the case of the Third London Airport, which was discussed in Section (3.4.3) of chapter three. It was pointed out that four possible sites had been suggested for the airport, namely Cublington, Thurleigh, Nuthampstead and Foulness. One of the four alternatives was to be selected, the decision of the commission depending primarily on a cost-benefit analysis of each site. They declared that:(Dasgupta,A. & Pearce,D. 1978,pp.201-202).

> "Recognising, as we always have, both the strengths and limitations of cost-benefit analysis, we used it to assist in the short-list selection and, as is well known, the Research Team used it in the work which we published in January 1970. Nothing has happened to make us regret our decision. No one has yet suggested a better alternative"

Therefore, it is plausible to argue that the choice of a project site among a number of alternatives should be based on the cost-benefit concept.

In the case of the Greenhouses project, the committee identified neither the other possible locations, nor any logical reasons besides the general points listed above, which caused them to select Al-Rashdiya for the project. The chosen site was examined in isolation without comparing it with alternative locations, thus restricting the area of selection and possibly leading to the inefficient allocation of resources.

Nevertheless, it is still useful to cite the criteria adopted in the feasibility study for evaluating the project in the light of the elements of agricultural project appraisal.

8.4 The Project Appraisal for Location Outside Al-Rashdiya District

This section examines and criticises the evaluation techniques adopted in the feasibility study (See Appendix 8.1). While part two of the study is concerned with the appraisal of an independent agricultural project, part three deals with the project when considered as an extension to the main project in Al-Rashdiya. Accordingly, this chapter analyses both possibilities and illustrates the weaker elements of project appraisal in the agricultural sector in Iraq.

Although this chapter and the previous one are concerned with two different projects, the criticisms made earlier are also applicable to the project discussed here, and to any other similar agricultural project. This chapter is confined to an exploration of those deficiencies of the feasibility study which are not included in the previous one, and the emphasis will be on the differences in the methods of evaluation, rather than the similarities. Later, an attempt is made to explain in some detail the main similarities between the feasibility study of the "Bulgarian Project" and that of the "Italian Project".

8.4.1 The Financial Appraisal

In addition to the arguments discussed in section (7.5.1) of the previous chapter, it is worth emphasising the importance to the project's evaluators, of the following factors which were discussed in the feasibility study (Appendix 8.1) under the headline of "data requirements" :

1. Depreciation. In accounting terms, depreciation refers to the process of allocating the cost of a fixed asset to a determined accounting period during the life of that asset. It has been defined as follows, (Briston, R.J.1981, p.33):

> "Depreciation is a procedure which aims to distribute the cost (or valuation) of fixed assets, less salvage value (if any) over the estimated effective life of the unit in a systematic and rational manner. It is a process of allocation and not of valuation".

However, in determining the desirability of a project, depreciation should not appear in the analysis as a cost, for the cost of an asset is taken into account in the year in which it is incurred. Therefore, no depreciation allowance is needed to show the proportion of the value of the asset used in any given year. In this regard HMSO (1973,p.18) argued that:

> "No allowance should be made for depreciation in the sense used by accountants as this is not a real resource cost. Capital costs will be

> recorded in the years in which they occur and the deterioration in the real value of these assets over time will in fact be taken into account in the estimate of the economic life of the project, or in the estimates of annual repair and maintenance cost and plant's terminal value."

2. Discounting. It is unwise to trust any financial indicator, such as the payback period adopted in the feasibility study, as a measure of a project's worth, without paying adequate attention to the timing of future cash flows. Instead, net present value techniques should be used in order to measure the expected costs and benefits, and the net worth of the project as a whole. This technique gives a clear expression of the total costs and benefits expected from a given project. All expected expenditure and revenues resulting from a project are taken into consideration for its whole life. These estimated figures are discounted to their present value, adopting an adequate discount rate and the period of time over which it is sensible to consider costs and benefits, to show the net cash inflows (or net benefits) generated.

There are two viewpoints in the appraisal of a project,first the analysis from the commercial point of view, which entails recording all the expected costs, including taxes, and secondly the economic point of view which deals with all costs and benefits to society.

For the latter, taxes should be considered as a transfer payment, whilst subsidised items should be recorded as a full cost. In this regard, Gittinger ,J.P. (1982, p.51) argued that:

> "In financial analysis a tax payment is clearly a cost. When a farmer pays a tax, his net benefit is reduced. But the farmer's payment of tax does not reduce the national income. Rather, it transfers income from the farmer to the government so that this income can be used for social purposes presumed to be more important to the society than the increased individual consumption (or investment) had the farmer retained the amount of the tax. Because payment of tax does not reduce national income, it is not a cost from the standpoint of the society as a whole. Thus, in economic analysis we would not treat the payment of taxes as a cost in project account. Taxes remain a part of the overall benefit stream of the project that contributes to the increase in national income .... subsidies are simply direct transfer payments that flow in the opposite direction from taxes."

Since our main concern is to appraise a public project, we must depart from the private evaluation, and adopt a social appraisal approach. Accordingly, the payment of taxes, if any, should be considered as merely a transfer of payment from one sector to another, and subsidies should be taken into account as a transfer in the opposite direction.

8.4.1.1 Establishment Costs

It is worth mentioning that the estimates of the project's establishment costs were based on the actual establishment costs of the Bulgarian project, with the

addition of 10% of the actual cost as a reserve for price increases. It can be seen from Table A8.6 that the establishment costs are broken down into two parts. Part one represents the works to be executed by the Italian company. These include the construction of 17 greenhouses, heating boilers, machinery and accessories, and the company's supervision for two seasons. The total costs of these items were estimated at 3,576,000 I.D. The second category of items in the table are those to be executed by Al-Khalis Agricultural Administration which included land reform, the greenhouse foundations, civil engineering works, electrical power, improvement of soil content, and the import of vehicles and agricultural implements required. The total costs of these items were estimated at 1,705,000 I.D. The total establishment costs, therefore, would be 5,281,000 I.D.

Due to the similarities between the manner of estimation of the establishment costs of this project, and those of the Bulgarian one, it is plausible to refer to the criticisms made in section (7.5.1.1) of the previous chapter. Furthermore, there are many arguments that can be raised regarding the way in which table A8.6, in Appendix 8.1, is constructed :

i) It can be seen from the above table that the evaluators divided the costs of the items to be executed by Al-Khalis Agricultural Administration

into three parts. The total costs of the first and second items had been estimated at 1,550,000 I.D. This estimate seems unrealistic in that the figures were not related to the project's actual location. The evaluators made a general estimate for any location outside the Al-Rashdiya district, without considering any specific site, whereas it is hard to believe that the cost of land reform, improvement of soil content, etc. would be identical for any chosen site.

ii) A distinction should be made between capital and recurrent costs such as the cost of river soil, petmosit and hay. Additionally the costs should be broken down to show local and foreign exchange components which may include expenditures for both direct and indirect imported goods and services such as those required by the contract with the Italian company. The main objective behind this separation is to determine whether the proposed project can earn or save foreign exchange through export or avoidance of vegetable imports.

iii) One can argue that a feasibility study may be considered as a proposed plan for the project's construction and operation. Therefore, the estimation establishment costs should involve a provision allowance anticipated during the construction period for the effect of inflation,

change or modifications in design, change in domestic or foreign prices. In this regard, Gittinger, J.P. (1982, p.53) argued that:

> "Sound project planning requires that provision be made in advance for possible adverse changes in physical conditions or prices that would add to the baseline costs. Contingency allowances are thus included as a regular part of the project cost estimates. Contingency allowances may be divided into those that provide for physical contingencies and those for price contingencies."

Accordingly, it is implausible to base project cost estimates on the assumption of absolute stability during the specified period.

8.4.1.2 Operational Costs & Expenses

In general, operating costs are divided into variable and fixed components. The former cover raw materials and supplies which will vary directly with the volume of production. Fixed costs contain such items as maintenance, administration, and managerial charges, which are normally relatively fixed with respect to the volume of production. For financial analysis from a national point of view, tax and depreciation elements will normally be netted out of the calculations (Irvin, G. 1978, p.8).

In the project in question, the evaluators divided the operating costs of the three proposed production alternatives into variable and fixed costs. The variable costs included seeds, fertilizers, poisons,

fuel, oil, maintenance, etc. and interest charges on working capital (see table A8.11), while the annual fixed costs (See table A8.10) included depreciation of buildings, greenhouses, vehicles, machinery, etc., cost of manpower, and interest charges on fixed capital. The feasibility study estimated the fixed costs, which were applied for the three alternatives, at 663565 I.D., whilst the variable costs ranged between 114460 and 148495 I.D., depending upon the alternative.

However, a number of arguments can be raised against the way in which tables A8.10, A8.11, A8.12, and A8.13 were constructed.

i) It can be seen from table A8.10 that the cost of manpower is considered as a fixed cost, and it is assumed that there is no relation between the manpower required and the volume of production. Under generally accepted methods of accounting, manpower should be considered as a variable cost due to the fact that it responds to small changes in volume (Shillinglaw, G. 1972 ,P.41). The distinction between fixed and variable costs is clearly useful for decision-making, and a failure to classify the types of costs correctly may lead to unsound evaluation.

ii) Another defect in the calculation is that it ignored insurance expenses, which should be taken into account as an annual fixed expense. This item

seems to have been entirely omitted, being mentioned neither in the table, nor elsewhere in the feasibility study. The following table (No. 8.1) illustrates how the fixed and variable costs of alternatives should be constructed.

iii) Tables A8.11, A8.12, and A8.13 show fuel, oil and maintenance in one single figure under the heading of variable costs. For the purpose of planning and control, these costs should be shown separately (Taylor ,A.H. and Shearing ,H. 1979, p.226). There are many ways to group costs, but it is wise to distinguish between those for operation and those for assets maintenance. Furthermore, in most cases maintenance cost is classified as a fixed cost.

8.4.1.3 Sales Revenue & Profit

Two main arguments can be raised against the way in which the expected production and revenues are estimated in tables A8.7, A8.8 and A8.9 in the feasibility study:

i) It may be seen from the table 8.2 that the prices of both cucumbers and tomatoes are estimated at almost 250 I.D. per ton. This figure, representing average sale prices from December to June of the next year, seems an overestimate judging by past prices for the products. The actual prices for cucumbers and tomatoes produced by the Bulgarian

Table 8.1

The Estimation of Annual Cost for an Alternative.

Items	Annual Costs (I.D.)	Grand Total (I.D.)
A. Fixed Costs		
1. Depreciation (Total)	xx	
2. Maintenance	xx	
3. Insurance	xx	
4. Soil Improvement Materials	xx	
5. Others	xx	
Total		xx
B. Variable Costs		
1. Wages & Salaries	xx	
2. Seeds	xx	
3. Fertilizers	xx	
4. Poisons	xx	
5. Other Raw Materials	xx	
6. Fuel	xx	
7. Oil	xx	
8. Electricity	xx	
9. Water Supply	xx	
10. Packaging	xx	
11. Selling & Administrative Exp.	xx	
Total		xx
C. Interest Charges on Capital		
1. 5% of Fixed Assets	xx	
2. 5% of Working Capital	xx	
Total		xx
Grand Total		xx

Table 8.2

The Estimation of Production and Revenues for the Three Alternatives

Alternative	Cucumbers		Tomatoes		Total
	Production (ton)	Revenues (ton)	Production (ton)	Revenues (ton)	(I.D.)
1st	2500	625230	1000	250180	875410
2nd	3750	951750	500	126500	1078250
3rd	5000	1250460	---	--	1250460

Source: Tables A8.7, A8.8 and A8.9 of Appendix 8.1

project during the 1978/79 season (2) were 115 I.D/ton of cucumbers and 113 I.D/ton of tomatoes (see table 7.13 of the previous chapter). Therefore, it may be argued that failure to forecast the sale prices of the production in appraising the project may lead to a false estimation of profits and thus to wrong conclusions in the project evaluation. (Beyer, R. 1963, p.273) argued that:

> "The area of product pricing requires perhaps the most important marketing decisions in the entire profit-planning process, and it is an area in which accounting data should have a significant, although not necessarily a decisive, effect."

However, it can be concluded that estimates of revenues and profits stemming from a project should

(2) We refer to the sale prices of the 1978/79 season because the feasibility study was prepared in 1978 and the project was began in 1979.

be carried out according to relative prices adjusted for the expected rate of inflation.

ii) In respect of production, the evaluators seem to have been over-optimistic. They estimated that one planted donum would produce 50 tons of cucumbers and 20 tons of Tomatoes (see tables A8.7, A8.8 and A8.9 of Appendix 8.1). This estimation is unrealistic, given that at the time of preparation of the feasibility study, the productivity of the Bulgarian greenhouses for the agricultural season 1978/1979 was 16.5 tons/donum for cucumbers and 13.8 tons/donum for tomatoes (see table 7.13 in the previous chapter). The over-estimated production figures would lead to a false view of revenues and profits, and as a consequence to incorrect evaluation of the project.

8.4.2 The Economic Appraisal

It can be seen that there are close similarities between the manner of preparation of the feasibility study of this project and that of the previous one (the Bulgarian project) . Whilst both projects shared to some extent the same techniques for their appraisals, these techniques were deceptive in both financial and economic appraisals since they were derived from a false picture of costs and benefits. It has been mentioned (section 7.5.2) that the evaluators paid more attention to

financial aspects than to economic aspects of the projects. They focussed on the financial profitability of the project, appraising the economic aspects solely on their personal intuition.

It is generally recognised that the main feature of cost-benefit analysis is the quantification of a project's costs and benefits in all aspects. In this regard Prest, A. R. and Turvey, R. (1965 p.370) argued that:

> "An important advantage of cost-benefit study is that it forces those responsible to quantify costs and benefits as far as possible rather than rest content with vague qualitative judgements or personal hunches".

Some concepts which should be taken into account in economic appraisal of the project have already been discussed in the previous chapter. However, it is also worth stressing that assessing the desirability of the project from the economic point of view involves the problems of opportunity cost of land and capital, which require attention in the analysis since they are viewed as scarce resources.

8.4.2.1 Opportunity Cost of Land

The evaluators attempted, in this part of the feasibility study, to discuss the desirability of the project, should its site be anywhere other than the Al-Rashdiya district. But it is extremely difficult to

measure the social costs and benefits of an unspecified site, for each site has unique characteristics which affect the costs and benefits for the surrounding environment and for the economy as a whole.

It is thus impossible to discuss the opportunity cost of land of this project. What may be discussed, however, is the general approach to this subject, which will indicate the deficiencies of the feasibility study and throw light on the economic appraisal of agricultural projects in the future.

From the economic point of view, cost may be considered as the sacrifice that is involved in deciding to take one course of action rather than another. Mepham , M. J. (1981, p.39) argued in this regard that:

> "The cost is the lost opportunity of using such resources in the next most profitable manner and such a cost relates to the decision by which it was incurred. Cost is thus no longer regarded as measuring the objective value of output, the basic idea is now that of a decision resulting in a sacrificed alternative opportunity: the term used to describe this concept is opportunity cost".

From the above definition, it can be argued,in the case of the project in question, that the proposed location may have fallen into either of the following categories:

i) Land which was currently being exploited for an agricultural or any other project. In this case its opportunity cost would represent the loss of existing production.

ii) The land may have been withdrawn from either private or public use. In these circumstances the opportunity cost should be measured according to the investment foregone and in terms of social values. If this cost was relatively high, this may have indicated that the proposed location was not preferable and that its selection would be a misallocation of resources.

8.4.2.2 Opportunity Cost of Capital

This represents the opportunity cost of using capital in a given project rather than in its next best alternative use, a relation usually expressed in the form of an interest rate. To clarify this point, let us assume that the project in question will displace an agricultural project in the private sector, and that the government wishes to bring the economy to the optimal level of saving and investment. In this case, if the investment foregone in the private sector could have earned a given rate, then the public sector project displacing it would not be justified unless it would earn more than that rate, and the use of any other rate may lead to misallocation of resources.

This is not, however, the whole problem. The correct yardstick of the opportunity cost of capital for a project requires that its rate of return be measured in terms of social values. Accordingly, it is incorrect

to compare the social rate of return on a public project with the rate of return on the foregone private investment. The former rate is more reliable, from the social point of view, than the latter, since it reflects a valuation of all the social costs and benefits generated by an investment. Thus both private and public projects should be evaluated on the basis of social costs and benefits for a sound comparison between their net benefits to society.

In this respect Marglin, S. A. (1963 , p.277) argued that:

> "In the planning of public investment, the present value of the social benefits of private investment that public investment displaces, evaluated at the marginal social rate of discount, supersedes the money cost of public investment as the measure of its true social cost. In other words, we plan public projects to maximize their net present value at the marginal social rate of discount, but, in evaluating the social cost of public investment, an opportunity cost reflecting the social value of utilizing resources in private investment replaces the money cost of the portion of the resources that comes from the private investment sector".

8.5 The Project Appraisal in the Event of its Location in Al-Rashdiya District

It was mentioned at the beginning of this chapter (section 8.3.1) that the evaluators appraised the project from the standpoint of its location in Al-Rashdiya district, and from the standpoint of any other location. In other words, they attempted to discover

whether or not it would be desirable to set up the project in Al-Rashdiya as an extension to the Bulgarian project.

The previous section (8.4) dealt with the project appraisal from the standpoint of a possible site location outside Al-Rashdiya as an independent project. We now turn to consideration of its appraisal as an extension to the Bulgarian project, and will examine the merit of the various criteria used for appraising the worth of the project through a discussion of the techniques used in both the financial and economic appraisal as indicated in the feasibility study.

8.5.1 The Financial Appraisal

In view of the close similarities between the techniques used in the preparation of the feasibility study in question and the previous one for the Bulgarian project, one may refer to the discussion of section (7.5.1) in the previous chapter, which examined the actual criteria employed in the feasibility study for the financial appraisal and those which should have been taken into account.

Since this project is treated as an extension to the main one in Al-Rashdiya, one particular problem is that the feasibility study considered the costs of the extension project in isolation from those of the main one, and hence a common costs between them related to

establishment, administration, operating, and manpower are apparent. These costs may pose many problems in the measurement of the profitability of the proposed project which could be a critical factor in the extension decision. All the costs incurred for one purpose only should be allocated wholly to that purpose, otherwise neither the costs of the main project nor those of the extension, can be recognised (Sizer, J. 1979, p.21).

Therefore, the analysis should ignore joint costs. The decision to produce further output depends upon whether the additional profits (benefits) generated by additional units justify the additional incremental costs involved. This view argues the importance of an incremental approach (3), which identifies the incremental costs needed to produce additional units, when a decision regarding a project extension is in question. These costs include only those costs that will change as a result of the decision being analysed. This approach, therefore, concerns the difference in total costs and revenue resulting from a contemplated change (Backer, M. and Jacobsen, L. 1964, P.20).

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(3) Incremental (or differential) costs differ from marginal costs in that the latter represents those costs added by producing one additional unit (Bierman, H. and Dyckman, T. 1976, P.25).

8.5.1.1 The Establishment Cost

As can be seen from table A8.6 in the feasibility study the establishment cost is estimated at 5,281,000 I.D. This represents the cost when the project is envisaged as an independent one. Table A8.16 shows that this cost would be reduced to 4,442,700 I.D. if the project were to be established in Al-Rashdiya as an extension to the Bulgarian project. These estimates of the project establishment costs may make the extension proposition appear preferable due to its relative low cost.

Many arguments can be raised against the way in which these estimates were constructed, to highlight which it is necessary to draw a comparison between the two estimates as shown in the following table (8.3). This table compares the estimated establishment cost when the project is assumed to be independent (A) with that when it is an extension to the Bulgarian one (B). The costs of the greenhouses, heating boilers, machines and supervision which would be provided by a foreign company are estimated at 3,576,000 I.D. for the project in position A, while it is estimated at 3,310,000 I.D. in position (B). The difference between these two estimates, which is 266,000 I.D., arose from the extension decision and not from the project location. It represents a part of the additional incremental costs which are needed to produce additional units.

Table 8.3

Comparison Between the Establishment Costs of the Project as an Independent project (A) and as an Extension to the Bulgarian Project (B)

Item	(A) I.D.	(B) I.D.	Variances I.D.
1. The Foreign Company			
Greenhouses, heating boilers, machines & supervision.	3,576,000	3,310,000	266,000
2. Al-Khalis Agricultural Administration			
Land reform, foundations, civil engineering works, electrical power.	1,284,000	1,000,000	284,000
Improvement of soil content:-			
River soil	37,500	37,500	------
Petmosit	213,500	------	213,500
Hay	15,000	------	15,000
Vehicles & agricultural implements	155,000	95,000	60,000
Total	5,281,000	4,442,700	838,300

In so far as the project was treated as an extension to the Bulgarian project, its costs should not be isolated from those of the main one, otherwise neither costs nor revenues of both projects would be credible. this view suggests that the project in question should be seen as a part of the main one and its costs are to justify the additional output expected. However, what has been said about the estimation of the above items are equally applicable to the others in table (8.3). Furthermore, table A8.16 of the feasibility study shows that the evaluators decided to dispense with Potmosit and Hay in the event of the project being as extension to the main one due to techniqual factors, as Al-Rashdiya location had proved sufficiently fertile without using these materials. This alone makes a saving of around a quarter million I.D. in favour of the extension decision. In this context, using the incremental approach in order to identify the total costs and revenue resulting from the extension, comparing them with those expected from the project in position (A) would be a critical factor in financial appraisal.

8.5.1.2 The Manpower Cost

Table A8.5 in the feasibility study shows that the manpower required for the project in case of its being set up in any location other than Al-Rashdiya district

would be 323 employees with an annual estimated cost of 165,540 I.D., while table A8.17 reveals that the required manpower for the project as an extension to the Bulgarian one in Al-Rashdiya district would be reduced to 279 employees, and consequently their estimated cost would be reduced to 130,560 I.D.

However, to justify the difference between the manpower costs for the two alternatives, which are 34,980 I.D., the evaluators argued that the decision as to the project's location has a considerable effect on the number of employees required, and thus on the manpower cost of the project. This relationship between the manpower cost and the chosen location should be dismissed since the size of the project or the area of the crop would be constant in all cases. The main reason behind this reduction is attributable to the extension decision, whereas the incremental cost approach shows the additional cost of taking one alternative compared to the cost of another, i.e. the amount by which total costs will differ if a given alternative is taken. To this end a comparison between the manpower required for the project if established as an independent project (A) with that of an extension to the Bulgarian project (B), as shown in table 8.4, is essential.

Table 8.4

Comparison Between the Manpower Required for the Project as an Independent project (A) and as an Extension to the Bulgarian Project 1(B).

Classification	No. Required (A)	No. Required (B)
Farm Director	1	NIL
Agricultural Engineer	5	3
Agricultural Supervisor	16	16
Electrical Engineer	1	NIL
Mechanical Engineer	1	NIL
Director Assistant	1	NIL
Administration Officer	2	1
Typist	2	1
Store Keeper	1	NIL
Store Keeper Assistant	1	NIL
Accounting Clerk	1	NIL
Electrical Labour	6	2
Boilers Labour	4	NIL
Class Labour	1	NIL
Welding Labour	1	NIL
Drivers	19	9
Unskilled Labour	10	5
Agricultural Labour	250	240
Total	323	279

Table 8.4 reveals that the project in position (B) can dispense with many workers such as farm director, electrical engineer, mechanical engineer, and others, in addition to which the number of other workers required is substantially lower than that required for the project in position (A). The comparison of total costs, including manpower, for the project as an extension, with those of an independent project, would then be a critical factor in the decision.

However, in deciding whether the project should be an extension to the Bulgarian one or it an independent project, the incremental cost approach has a significant role in supporting the decision-maker with a sound yardstick for his decision. It appears, therefore, that this approach should be included in the analysis when the establishment cost, manpower cost, etc. are considered. Failure to do this may cause failure to attain the diacritical points in the analysis and consequently lead to unsound financial appraisal of the project.

8.5.2 The Economic Appraisal

It can be argued, from the economic point of view, that the financial profitability of a project is not an adequate criterion for its appraisal. The major criterion is economic profitability which reflects the

net benefit generated by the project for the nation as a whole. The first step in assessing the economic profitability of a project, however, is to calculate its financial profitability, which is derived from the application of accounting principles and techniques. Therefore, a misleading financial appraisal, due to the misuse of accounting techniques and principles or to the exaggeration of imagined profits, may well lead to a spurious economic appraisal of the project.

However, in addition to the points made in this and the previous chapter about the concepts which ought to be taken into account in the economic appraisal of a project, it is worth stressing the need to pay attention to the distinction between financial and economic indicators. In tables A8.20 and A8.21 an attempt is made to reveal some economic indicators which are related to the financial aspect of the project, with the exception of value added. This concept is of considerable importance and will be discussed separately in the following section.

8.5.2.1 The Value Added Indicator

Before discussing the application of this concept as an economic indicator for the project in question, it is worthwhile to define it, highlight its components and assess its role in project appraisal.

Value added can be defined as the economic value

generated by the activity carried on within each production unit in the economy. It is measured by the difference between purchases of the input factors from outside and the value of the output generated by the enterprise. Indeed, the concept has a dual function for both micro and macro levels of a nation. It reflects the net creation of wealth which the enterprise has achieved and, as a consequence, the sum of the value added generated by each enterprise in the economy will aggregate for the national income of a nation. Burchell, S.; Clubb, C. and Hopwood, A. G. (1981, p.8) pointed out that:

> "The value added by a firm, i.e. the value created by the activities of the firm and its employees, can be measured by the difference between the market value of the goods that have been turned out by the firm and the cost of those goods and materials purchased from other producers. This measure will exclude the contribution made by other producers to the total value of this firm's production, so that it is essentially equal to the market value created by this firm. The value added measure assesses the net contribution made by each firm to the total value of production by adding up all these contributions, therefore it is possible to arrive at a total for the whole economy".

Thus, the statement of gross value added consists of the value of a firm's production at selling price less the cost of commodity requirements and service acquired. Net value added may be obtained by subtracting depreciation from the gross figure. The statement of

value added incorporates subsidies and taxes by adding the former to, and subtracting the latter from the value of production. Hence, the statement treats subsidies and taxes as merely transfer payments from one sector of society to another, and is thus relevant to the social viewpoint and thus to cost-benefit analysis (4).

It is interesting to note that the Iraqi Uniform Accounting Law of 1979 requires each enterprise, with the exception of banks and insurance companies, to maintain accounts needed for social accounting purposes, and each enterprise is required to prepare a statement of the value added by its operations to the total economy (Board of Supreme Audit, 1985, p.25). Table 8.5 shows a statement of value added required by the system, and its distribution.

Returning to the project in question, it can be seen from table A8.14 that the evaluators presented three figures of gross value added for the three proposed production alternatives which are 766400 I.D., 952980 I.D. and 1109035 I.D. respectively. These figures were obtained from the value of the expected production at selling price less the estimated costs of commodity requirements. However, as we have seen, the estimated volume of production was exaggerated, the expected

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(4) For more details see section 7.5.2.4 "Valuation of transfer items" in the previous chapter.

prices were unrealistic and the estimate of commodity requirements costs are unreliable. Thus the figures in table A8.14 are misleading.

It can be concluded from the above discussion that the feasibility study needed to be more realistic in its estimation of the costs and benefits generated by the project, and more attention should have been paid to project appraisal from the economic point of view. The economic desirability of the project should have been assessed along the lines discussed in this chapter and the previous one. Finally, the appraisal of the project as an extension to the Bulgarian one in Al-Rashdiya required careful examination in the feasibility study. Emphasis needed to be placed on an investigation of incremental costs, otherwise the ultimate decision of the evaluators and their recommendations would be unreliable.

Table 8.5

A Statement of Value Added Required by the Iraqi Accounting System

Uniform Account Code	Items	(I.D)
	1. Revenues	
41	Revenues from commodity production activities.	xx
42	Revenues from trading activities	xx
43	Revenues from service activities	xx
44	Revenues from working for others	xx
45	Cost of assets internally produced	xx
2943	Correspondent to valuation difference of finished goods inventory	xx
2944	Correspondent to valuation difference of goods purchased for sale inventory	xx
	Total revenues	xx
	2. Production Requirements	
32	Physical Requirements	xx
33	Service Requirements	xx
34	Contracts and Services	xx
35	Goods Purchased for sale	xx
	Total	xx
	3. Gross Value Added at Selling Price = (1) - (2)	xx
384	Less : Taxes and Duties	xx
	Add : Subsidies	xx
	4. Gross Value Added at Factors of Production Costs	xx
	Distribution of Value Added:	
31	Wages,Salaries,Family Allowance,social security and others	xx
361-462	Net Interest	xx
362-462	Net Rent of Land	xx
37	Depreciations	xx
	Surplus from normal operations	xx
	Gross Value added at factors of production costs.	xx

Source: The board of Supreme Audit, "Uniform Accounting System" 1985, pp.221-222.

8.6 The Overall Appraisal of the Project

The main task of a feasibility study of any public project is to determine whether the project is socially beneficial, viable, and makes the best use of its resources. Therefore, a good deal of work will be needed to present cost-benefit calculations, summarising viability and efficiency, a task which requires investigation and analysis of all the aspects mentioned in the previous chapter. The omission of any one of these factors, or its incorrect treatment will undoubtedly hamper the feasibility study.

In respect of linking project appraisal to national objectives, Schneider, H. (1975 pp.22-23) argued that:

> "Logically, the link between national objectives and project appraisal is simple. The criteria to be applied in project appraisal must be derived from, or compatible with, national objectives and reflect their interrelation .... From what has been said it should be clear that under normal conditions, linking project appraisal to national objectives is not a purely technical problem but implies value judgements. It is even very demanding on the capabilities of policy-makers".

Therefore, a feasibility study should investigate these objectives first and should be planned accordingly. The preparation of an integrated appraisal requires the expertise of a group of specialist representatives from various fields (5). It would be very useful to involve an accounting expert in any

project appraisal in order to assess and estimate the relevant items which should be incorporated into the analysis of the project.

Enthoven , A. J. (1973, p. 173) argued that:

> "The requirements of accounting in the identification and formulation of projects pertain principally to the collection and measurement of preliminary costs and benefits, preferably including available shadow prices; accounting is here primarily of a supportive planning nature. Comprehensive data on materials, labor, capital, overheads, etc. should be worked up, anticipating the future behaviour of the necessary cost-benefit items".

To return to the greenhouses project, the evaluators concluded the feasibility study with nine recommendations, the first of which was that the project should be established in Al-Rashdiya district as an extension to the main one, due to its high yield comparative to the other locations. In fact, they neither specified any other locations, nor made any actual comparison with any alternative site. The second recommendation concerned the production alternatives.

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(5) Since project appraisals must consider various aspects, such as financial, economic, technical, social and others (See figure 7.3 in the previous chapter) various specialists must be involved in the committee responsible for the preparation of a feasibility study. Unfortunately, most of the members who were delegated to prepare the feasibility study of the project in question were agricultural experts. Therefore, the project was viewed and analysed from a particular standpoint which was related to their theoretical and empirical specialisation.

Although most tables in the feasibility study considered production alternatives, the evaluators did not recommend the selection of any one of them, arguing that the choice of an optimal alternative was dependent on many variable factors such as the agricultural policy of the nation, the trend of demand, and price policy. Therefore, they left the final decision to future circumstances.

However, one may question this reasoning, for an important aspect of a feasibility study is investigation of price policy, agricultural policy and the expected demand for production, the omission of which may be considered a shortcoming in the study.

The other seven recommendations were more in the nature of general suggestions not directly related to the analysis of the project, such as whether it would be possible to plant flowers in the greenhouses, whether the greenhouses could be produced domestically instead of imported, and the like. These recommendations lack credibility because they did not incorporate the costs and benefits generated by the project, items which should have been appraised along the lines discussed in section 7.5.3 of the previous chapter.

8.7 The Project in Operation (6)

It was mentioned at the beginning of this chapter that the Italian Semi-International Company was unable to fulfil its obligation under the contract to complete the required 17 greenhouses by the beginning of the 1980/1981 season. Only six greenhouses had been completed at the appointed time, one of them being planted with tomatoes and the other five with cucumbers.

One year later, at the beginning of the 1981/1982 season, the company had completed nine more greenhouses to reach a total of 15 greenhouses, and the other two were completed at the beginning of the 1982/1983 season.

The discussion of the project implementation will cover the seasons of 1980/1981 and 1981/1982, and will consider the project's establishment costs, production capacity, operating costs, manpower employed, revenues and profits, and its efficiency indicators.

8.7.1 The Establishment Cost

The project was executed by both Al-Khalis Agricultural Administration and the Italian company. The costs of the items which were carried out by Al-Khalis

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(6) The data, tables and figures in this section are largely derived from the actual book-keeping records and internal reports of both Al-Khalis Agricultural Administration and the Greenhouses Farm Project in Al-Rashdiya obtained during my field study in Iraq. To avoid repetition, references will only be given for the data from other sources presented in this section.

Administration reached 1,379,250 I.D. as shown in table 8.6. The items provided by the foreign company consisted of the greenhouses, boilers, machines and equipment, and agricultural equipment, costing in total 3,547,290 I.D. which was paid to the company in foreign currency at the parity price.

However, it can be seen from the table that many items were omitted, such as electricity work, irrigation network and internal roads, the cost of which may have a considerable effect on the project's cost-benefit analysis. Therefore, they should be considered and included in the establishment costs of the project. A further point is that the project has no administration building, information building, or restaurant building, assuming that the buildings in the Bulgarian project will be utilised without regard to their cost. Omission of the costs of using these will obscure the real cost of the Italian project and hence will suggest a misleading profit.

Table 8.6

The Establishment Costs of the Project

Items	Cost I.D.	Dep. %	Annual Dep. expenses
A. Items Provided by the Co.			
Greenhouses	3,450,000	5	172,500
Boilers	38,400	--	1,920
Machines and Equipments	51,700	15	7,755
Agricultural Equipments	7,190	--	1,079
Total	3,547,290		
B. Items Carried Out by Al-Khalis Administration			
Foundations & Greenhouses	976,800	5	48,840
Soil Improvement Material	29,250	20	5,850
Marketing Trucks	45,310	15	6,797
Transportation Vehicles	36,790	10	3,679
Furniture	4,300	5	215
Plastic Boxes	11,660	20	2,332
Buildings	55,720	5	2,786
Mobilization Store	29,570	--	1,479
Switchboard & Transformers Store	9,400	--	470
Garages & Workshop	66,750	--	3,337
Poisons Store	98,930	--	4,947
Fertilizer Store	14,770	--	7,386
Total	1379,250		
Total Establishment Costs.	4926,540		276,319

8.7.2 Production Capacity

According to the agreement with the Italian Company, the six completed greenhouses were planted under their supervision for 1980/1981 and 1981/1982. They had undertaken that the average productivity would be at least as follows:

1. Tomatoes : 37.5 ton/donum
2. Cucumbers : 62.5 ton/donum
3. Capsicums : 25. ton/donum
4. Aubergines: 22.5 ton/donum

The following tables show the crops produced and the average productivity of a donum during those seasons.

Table 8.7

Amount Produced and the Productivity Average During 1980/1981

Crops	Planted Area (D.)	Amount Produced (Ton)	Productivity Average (T/D)
Tomatoes	6	104,345	17.3
Cucumbers	30	413,258	13.8
Total Area	36		

Table 8.8

Amount Produced and the Productivity Average During 1981/1982

Crops	Planted Area (D.)	Amount Produced (TON)	Productivity Average (T/D)
Tomatoes	30	253,512	8.45
Cucumbers	42	453,993	10.80
Capsicums	6	25,395	4.20
Aubergines	12	54,505	4.54
Total Area	90		

The productivity averages of 1980/1981 for the two products were 17.3 and 13.8 tons per donum, figures which were very unsatisfactory compared with the yield suggested by the Italian company (37.5 ton/D. for tomatoes and 62.5 ton/D. for cucumbers). However, there was no comparison between the actual performance with that expected and no regular feedback to allow continual monitoring. This lack of control led to a decrease in productivity during of 1981/1982, as shown in table 8.8.

8.7.3 Operating Costs

Tables 8.9 and 8.10 present the operating costs for 1980/1981 and 1981/1982 (7). These costs are distinguished in the project records on the basis of

(7) It is worth stressing that the planted area during the 1980/1981 season was 36 donums (6 greenhouses), while it was 90 donums (15 greenhouses) during 1981/1982.

their direct or indirect relation to production. It can be seen that wages and salaries and depreciation represent the highest percentage, around 90% of the total costs.

On the other hand, the costs of some items, such as hay and stationery, are not included, which may suggest that the project used those materials from the stock of the Bulgarian project without consideration of their cost.

A further point that electricity and water appeared in the operating costs of 1980/1981 at 30 I.D. while in 1981/1982 they appeared as 3553 I.D. Either there was a mistake in recording these costs or an omission of the true expenditures during 1980/1981. In any case, however, the precise and realistic cost for each item should be reflected in the operating costs table in order to facilitate monitoring and control.

8.7.4 The Manpower Employed

The manpower required by the project was estimated in the feasibility study at 279 employees, at an annual cost of 130560 I.D., assuming that the project was operating at full capacity (17 greenhouses). In practice, the cost of the manpower in, for example, 1981/1982, even though the project was operating with only 15 greenhouses,was 234667 I.D. , almost 46% of the total operating costs for the season. Thus considerable

attention needed to be paid to the variance of this cost to bring it into line with the planned figure.

Table 8.11 shows the cost of manpower for 1980/1981 and 1981/1982.

Table 8.9

Operating Costs for the 1980/1981 Season

Item	Cost (I.D.)	Percentage to Total Cost
Seeds	5400	1,73
Fertilizers	7074	2,27
Hay	----	----
Poisons	1623	,52
Miscellaneous Direct Materials	965	,31
Boilers fuel	8489	2,72
Total of Direct Costs	23551	7,55
Oil and Lubricant	1237	,40
Spare Parts	2400	,77
Electricity and Water	30	,01
Stationery	54	,02
Miscellaneous Indirect Materials	95	,03
Service Requirements	442	,14
Total of Indirect Costs	4238	1,37
Salaries	29875	9,58
Labourers Wages	75873	24,32
Pension Appropriation	1123	,36
Total Costs of Salaries & Wages	106871	34,25
Depreciations	177322	56,83
Total of Operating Costs	312002	100 %

Table 8.10

Operating Costs for the 1981/1982 Season

Item	Cost (I.D.)	Percentage to Total Costs
Seeds	12003	2,35
Fertilizers	12274	2,39
Hay	----	----
Poisons	1950	,38
Miscellaneous Direct Materials	1555	,30
Boilers fuel	19891	3,89
Total of Direct Costs	47673	9,31
Oil and Lubricant	2027	,40
Spare Parts	3229	,63
Electricity and Water	3553	,69
Stationery	----	----
Miscellaneous Indirect Materials	115	,02
Service Requirements	2587	,51
Total of Indirect Costs	11511	2,25
Salaries	41950	8,20
Labourers Wages	184153	35,98
Pension Appropriation	8564	1,68
Total Costs of Salaries & Wages	234667	45,86
Depreciations	217902	42,58
Total of Operating Costs	511753	100 %

Table 8.11

Cost of Manpower for 1980/1981 and 1981/1982

Item	1980/1981		1981/1982	
	Cost (I.D.)	% To Total	Cost (I.D.)	% To Total
Official Salaries	29875	27.95	41950	17.87
Seasonal Labour Wages	-----	-----	112770	48.06
Permanent Labour Wages	75873	70.99	71383	30.42
Pension Appropriation	1123	1.06	8564	3.65
Total	106871	100%	234667	100%

The above table breaks down wages between seasonal and permanent, defining seasonal labour as those employed from September to the following June, while permanent labour was employed throughout the year. Thus seasonal labour represents the unskilled labour employed in the project, while the permanent figure is for skilled labour. The figure for permanent wages for 1980/1981 actually represents the wages paid for both seasonal and permanent labour, which were not distinguished in the project records, though, as mentioned in the previous chapter, the distinction between skilled and unskilled labour is of great importance in determining a project's costs and benefits. Moreover, the Iraqi uniform accounting system, which was applied in the project, requires a distinction

to be made between these costs.

8.7.5 Revenue and Profit

The sales revenues from the crops produced in 1980/1981 and 1981/1982 were 55877 I.D. and 254403 I.D. respectively. The following tables show the production volume, production sold, waste, and the total revenues of the products in each season.

The sales revenues show an increase from 1980/1981, and the average revenue per greenhouse increased from 9313 I.D. during 1980/1981 to 16960 I.D. in 1981/1982. Similarly, the average revenue of one planted donum increased from 1863 I.D. in 1980/1981 to 2827 I.D. during 1981/1982. Such an improvement in revenues may have been a good indicator of the project's future if sales prices were stable or increased in line with the rate of inflation. In fact, the improvement in revenues was generated by an increase in sales prices, and is not due to enhanced productivity or improved sales volume. The average sales price of tomatoes was 194 I.D. per ton for 1980/1981, while it was about 244 I.D. per ton in 1981/1982. The price of cucumbers was 90 I.D. per ton in 1980/1981 and increased to 351 I.D. per ton in 1981/1982. Therefore, it may fairly be argued that the revenue increase was due, not to efficiency, but to the price decision. Table 8.14 shows total revenues, operating cost and gross profit (loss) for both seasons.

Table 8.12

Sales Revenues for 1980/1981

Crop	Production (ton)	Sold (ton)	Waste (ton)	Revenues (I.D.)
Cucumbers	414	411	2	37162
Tomatoes	104	96	9	18715
Total	---	---	-	55877

Table 8.13

Sales Revenues for 1981/1982

Crop	Production (ton)	Sold (ton)	Waste (ton)	Revenues (I.D.)
Cucumbers	454	441	13	154843
Tomatoes	253	248	5	60716
Aubergines	55	52	3	26932
Capsicums	25	24	1	11912
Total	---	---	-	254403

Table 8.14

Summary of Final Operating Results of the Project

Agricultural Season	Total Revenues (I.D.)	Operating Cost (I.D.)	Gross Profit (loss) (I.D.)
1980/1981	55877	312002	(256215)
1981/1982	254403	511753	(257350)
Total	310280	823755	(493455)

The above table shows that the project made a loss in these seasons amounting to 256125 and 257350 I.D. respectively. It may also be noted that despite increased prices for 1981/1982, which were almost twice those for 1980/1981, the project showed a significant loss. If sales prices had been stable at 1980/1981 figures, then the sales revenues of 1981/1982 would have been 126957 I.D. and the project would have shown a loss of 384796 I.D. instead of 257350 I.D. It would seen that the project faced serious problems caused by the absence of a monitoring and control process rather than by technical factors (8). To find where the flaws lie, a comparison between the planned and actual performance is of great significance.

(8) The project management argued in their final report of the agricultural season 1980/1981 that the main reason for the losses realised was traceable to technical factors such as poor quality seeds, bad climate control inside the greenhouses, and the like (Directorate of Greenhouses farm project, 1980 pp.13-14).

8.8 Comparison Between the Planned and Actual Results

The main objectives of a feasibility study of a public sector project are to decide whether it will be socially profitable and to estimate in advance the costs and benefits expected to proceed from it for several years. It may thus be considered as a plan for the project's implementation and a tool for measuring its efficiency in achieving its intended goals. Gittinger, J.P. (1982, pp. 22-23) argued that:

> "The usual step in project preparation and analysis is to undertake a feasibility study that will provide enough information for deciding whether to begin more advanced planning..... The feasibility study should define the objectives of the project clearly. It should explicitly address the question of whether alternative ways to achieve the same objectives may be preferable, and it will enable project planners to exclude poor alternatives. The feasibility study will provide the opportunity to shape the project to fit its physical and social environment and to ensure that it will be high yielding".

As far as the greenhouses project is concerned, it should be stressed that the feasibility study was totally ignored. It seems that its purpose was merely to decide whether or not the project should be accepted, and none of the concepts discussed in this study, including the productivity alternatives, seem to have been applied during the implementation period. Therefore, no comparison was made between the estimates in that study and the actual project performance.

In practice, the project's manager (9) usually prepares an agricultural seasonal plan which includes the expected cultivated area, the productivity of a planted donum, and the physical requirements of the production, as shown in tables 8.15 and 8.16. The figures in these tables act as a basis for the determination of the physical production budget, which consists of the quantities required of seeds, fertilizers, poisons,etc.

In June 1980 another proposal plan, covering five years (1981-1985), was submitted by the project manager to Al-Khalis Agricultural Administration for approval. It concerned the expected cultivated area for the project as a whole (Bulgarian and Italian Projects) and the commodities required for production.

Table 8.17 represents the proposed plan for these years.

An analysis of tables 8.15, 8.16 & 8.17, suggest many arguments against the way in which their figures were derived.

1. The average productivity of a donum is shown in tables 8.15 and 8.16 at 62.5 ton/D. for the cucumber crop and 37.5 ton/D. for the tomatoes crop, while they were estimated in the project

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(9) It is worth mentioning that the specialism of the project's manager is agronomy and hence any plan proceeding from the management of the project would be in accordance with his agricultural background.

Table 8.15

The Seasonal Plan of 1980/1981

Crop	No. of Greenhouses	Cultivated Area	Productivity (ton/D.)	Production (ton)
Cucumbers	5	30	62.5	1875
Tomatoes	1	6	37.5	225
Total	6	36	-	-

Table 8.16

The Seasonal Plan of 1981/1982

Crop	No. of Greenhouses	Cultivated Area	Productivity (ton/D.)	Production (ton)
Cucumbers	5	30	62.5	3000
Tomatoes	8	48	37.5	1125
Aubergines	2	12	22.5	270
Capsicums	1	6	25	150
Total	16	96	-	-

feasibility study and in the planning stage of the previous project (the Bulgarian one) at 50 ton/D. for cucumbers and 20 ton/D. for tomatoes. Nevertheless, the actual productivity of crops according to past records was very low in comparison with the estimated figures, in most cases less than 50%, suggesting that the average productivity figures were determined in an arbitrary manner.

2. Neither the estimated cultivated area nor the crop mixes shown in the above tables are justified. The reason behind the project was to produce cucumbers and tomatoes on the basis of one of the three proposed alternatives for the cultivated areas. Any change in the plan should be based on rational consideration, such as new factors that could affect the internal or/and external circumstances of the project.

3. It is unrealistic to consider these estimated figures as a complete plan, since the costs of related items are not included. Comparison of the planned physical items with those in actual practice would not give any indication of project efficiency and thus monitoring and control would be very difficult to achieve. The main purpose of efficiency control is to ensure that funds are used in an effective manner and according to the planned

Table 8.17

Five-Year Plan of Proposed Cultivated Area

(1980 - 1981 - 1985)

Crop	Number of Greenhouses	Cultivated Area (D)
1980-1985		
Tomatoes	16	96
Cucumbers	13	78
Capsicums	2	12
Flowers	1	6
Other Products	1	4
Total	33	196
1981-1985		
Tomatoes	14	84
Cucumbers	13	78
Capsicums	2	12
Aubergines	2	12
Flowers	1	6
Other Products	1	4
Total	33	196

figures. Costs variances, then, will indicate the extent to which the project is efficiently carried out.

4. The above tables show that two production plans were drawn up for the same period of time i.e. the seasonal plan of 1980-81 and the five-year plan of 1980-1985 for the project as a whole. This may lead to confusion and difficulty in the comparison and control processes. However, comparison between the above estimated figures and the actual results may give a partial indication of the extent of the problems. The following tables (8.18, 8.19, 8.20 and 8.21) make this comparison for the seasons in question.

There is clearly a wide gap between the planned and actual performance which requires considerable attention. It seems that the percentage of the planned production achieved declined periodically, the percentage of the tomato crop decreasing from 46% in 1980/1981 to 22% in 1981/1982, and that of the cucumber crop decreased from 22% to 17%. The project's collapse can be highlighted in a comparison between the planned revenues, which were calculated according to current prices and waste production, and the actual revenues as shown in tables 8.20 and 8.21.

The variations between the planned revenues and

actual practice suggest that there were serious problems which should have been given careful diagnosis. These are revealed by the comparison of the planned figures and actual performance, and can be traced to the absence of monitoring and control processes at both the project and the sectoral levels. The following discussion is devoted to a diagnosis of the problems confronted and to formulate appropriate recommendations.

Table 8.18

Production Comparison Between the Planned and Actual Practice for 1980/1981

Crop	Planned Production		Actual Production		Percentage
	Production (ton)	Productivity Avg.(ton/D)	Production (ton)	Productivity Avg.(ton/D)	
Tomatoes	225	37.5	104	17.3	46%
Cucumbers	1875	62.5	413	13.8	22%

Table 8.19

Production Comparison Between the Planned and Actual Practice for 1981/1982

Crop	Planned Production		Actual Production		Percentage
	Production (ton)	Productivity Avg.(ton/D)	Production (ton)	Productivity Avg.(ton/D)	
Tomatoes	1125	37.5	254	8.5	22%
Cucumbers	3000	62.5	454	11	17%
Capsicums	150	25	25	4	16%
Aubergine	270	22.5	55	4.5	20%

Table 8.20

Comparison of Sale Revenue Between Planned and Actual Performance in 1980/1981

Crop	Planned Revenues (I.D.)	Actual Revenues (I.D.)	Variations (I.D.)
Tomatoes	218185	37162	(181023)
Cucumbers	271191	18715	(252476)
Total	489376	55877	(433499)

Table 8.21

Comparison of Sale Revenue Between Planned and Actual Performance in 1981/1982

Crop	Planned Revenues (I.D.)	Actual Revenues (I.D.)	Variations (I.D.)
Tomatoes	274423	60716	(213707)
Cucumbers	1,053975	154843	(899132)
Capsicums	71764	11912	(59852)
Aubergines	139437	26932	(112505)
Total	1,539599	254403	(1,285196)

8.9 Diagnosis of the Deficiencies

The ideas put forward in the final section of the previous chapter as to the reasons behind the failure of the Bulgarian project are equally applicable to the Italian project. Absence of follow-up, monitoring, and control systems, have further weakened projects which were undermined from the outset by ignorance and lack of attention to precise planning/budgeting, which created ambiguity in the project's targets, making them difficult to attain. As a result, the projects lost their link with the national objectives which had led to their creation.

The main criterion of an investment project is its contribution to national objectives. Therefore, a special survey is often useful at the planning stage, in order to aid diagnosis of deficiencies at the decision-making, execution and operating stages. A discussion of these stages, may illuminate the role played in the control of these activities by accounting information and techniques.

8.9.1 The Project Planning Stage

The decisive criterion for project selection is the pursuit of national objectives within the broader framework of economic policy and planning. Hence, the success of a national plan may be gradually realised via the sound selection and implementation of projects. To

bring this about, there is a need for information on detailed annual budgets, prices policy, inflation, cost data, and other factors. Accounting information and techniques are of paramount importance in this regard. The role of accounting in examining the contribution of proposed projects to national objectives is significant, for it can answer many questions concerning project selection, whether they are related to the project itself or to the economy as a whole.

It has been stated that the main reason for the establishment of the greenhouses project was the production and supply of out-of-season food products to the middle region of Iraq. This suggests to indicate that a project objective was the avoidance of future increases in vegetable imports, and export promotion or import substitution. Thus, its intention was to earn or save foreign exchange. In such a case, accounting data and techniques can play a leading role in providing cost data and making a comparison between the domestic resources which would be sacrificed to earn or save the foreign exchange, and the amount which would be earned or saved. A prediction of future prices and estimates of the costs and benefits generated by the project should be taken into account to ensure that the project is in line with national objectives and that its benefit can be expressed in quantifiable terms.

In 1975 the Iraqi Ministry of Planning published a

manual of project appraisal to assist the preparation of primary feasibility studies of projects in the Iraqi public sector (See Appendix 8.2). The publication of this manual was an important step towards the rationalisation and harmonisation of these processes.

However, in the appraisal of the greenhouses project, the primary study was not done,nor were the recommendations of the project appraisal manual followed. The project was therefore, appraised in an inappropriate manner which may have led to inaccurate decision-making.

8.9.2 The decision-making stage

Project appraisal should be built on the project plan and consideration should be given to all those aspects which were discussed in the previous chapter. The feasibility study must consider all the possible alternative ways of achieving the same objectives. Detailed budgets should be prepared in accordance with the financial and economic indicators expected in the future, and extensive use of past, present, and future data is required. Accounting information and techniques, therefore, play an important role in project planning. This role is extended further to project decision-making and the control of its activities during the execution and operating stages through budgeting processes. In this regard Corbett, P. (1977, P. 179)

argued that:

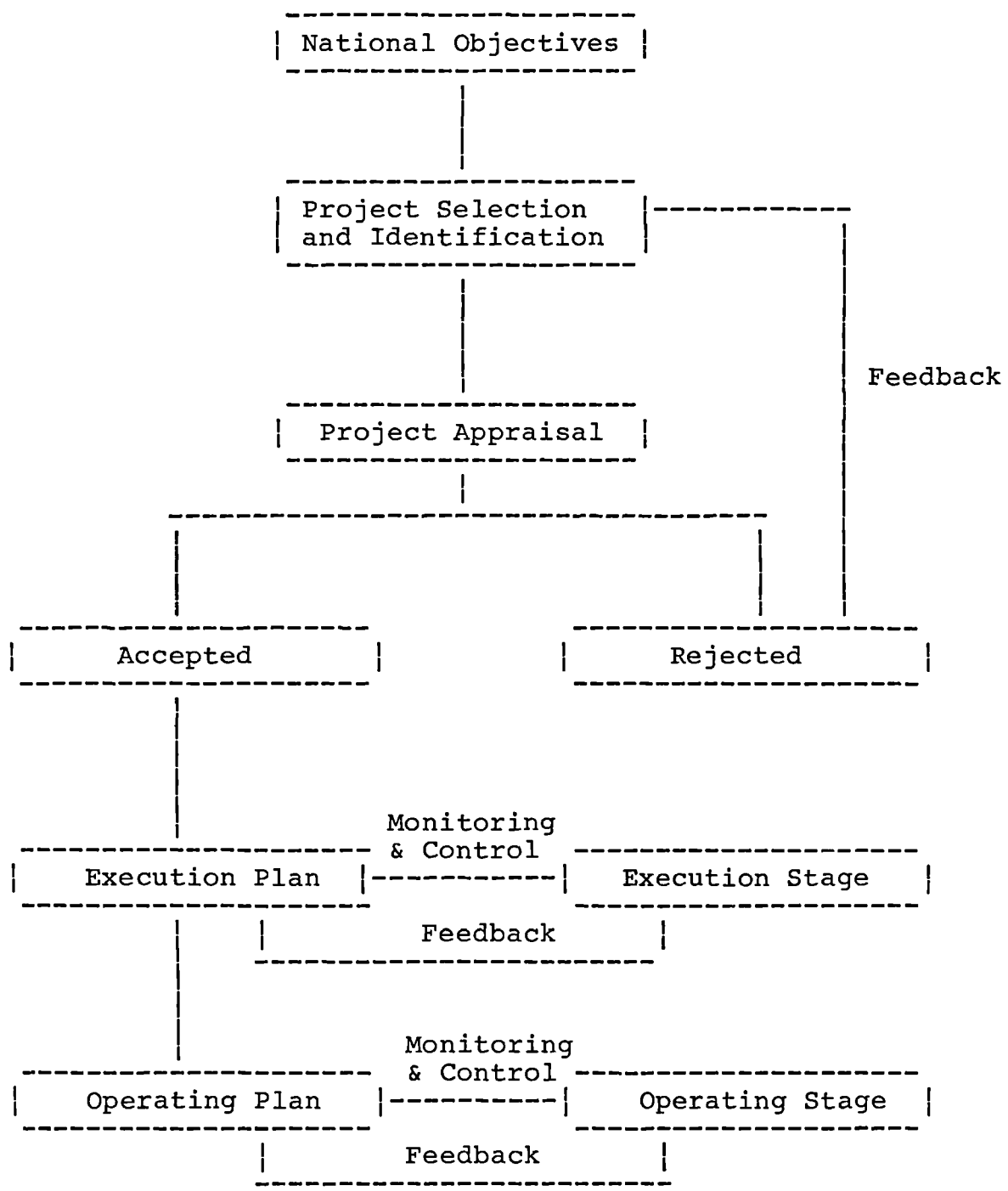
> "Planning will be seen as a way of developing a suitable strategy for meeting the company's objectives and requires financial measurements of the likely outcome of available alternatives. From this selected plan a budget is constructed which provides detailed working plans to guide the company as a whole and all its individual activities. Control and review are achieved by regularly comparing the actual results with these budgets, necessary correcting action can then be taken whilst the plan is being implemented and the experience of the whole year is used to formulate the next plan".

The above argument highlights the points made in the last section of the previous chapter regarding budgets as plans and as control devices. Furthermore, these budgets can be used as a device for decision-making purposes, for they indicate whether a project would generate sufficient benefit to justify its selection. At this stage, mutual feedback between the project appraisal process and the project selection stage can enable any necessary corrective action to be taken (see figure 8.2). Lastly, if the appraisal team concludes that the project would be financially and economically beneficial then it may proceed and the feasibility study, including the budgets, ought to be the basis or the standard yardstick for the execution and operating stages of the project.

In the case of the greenhouses project, it may be concluded that the deficiencies at the decision-making

Figure 8.2

Realisation of National Objectives Through Project Appraisal and Implementations



stage can be largely ascribed to ignorance of the main purpose of the project, namely to earn or save foreign exchange. Secondly, they may be traced to the omission of the budgeting process which is an effective tool for the planning, decision-making, and implementation stages.

It may be argued that neither the costs nor the revenues (or the benefits) were predicted on a realistic basis. Evaluators ought to estimate what will probably happen, not what they would like to happen.

8.9.3 The Execution and Operating Stages

The feasibility study, as we have seen, was totally ignored during the project's implementation period. Its purpose seems to have been only to decide whether or not the project should be accepted. The project's manager was responsible for the preparation of the annual plan which, in practice, took the form of a physical production budget only, other budgets, such as, cash budget, operational budget, and the like, being omitted. Lack of attention to the feasibility study left the execution stage of the project without a plan and, as a consequence, no control or monitoring were applied.

However, the process which should be followed during the execution and operating stages is to take into consideration all the recommended budgets, whether

prepared in the feasibility study or proceeding from the project's management, as a guide. These budgets must be accurately prepared in order to realise the predicted benefits. Variances may occur between the budget and actual results, due either to a change in circumstances, or to deficiencies in the budgets themselves. The project's manager must be able to respond to these variances through the monitoring process and feedback should take place for appropriate corrective action (see figure 8.2). Briston, R.J.(1981, pp. 293-5) highlighted the importance of monitoring and budgetary control when he argued that:

> "Steps will be taken to implement the plans, monitor progress and revise any aspects of the plans which prove to be unrealistic due to unforeseen circumstances. Budgetary control is concerned with the monitoring of actual progress and the need to revise plans .... Control will be exercised by the individual executives who will compare their actual progress against budget. Particular attention will be paid to any early warning signs of future difficulties."

Continuation of the monitoring process and revision of the budgets will accordingly refine the variances between planned and actual performance, assisting the project in achieving its planned targets. These targets may perhaps not represent the desired results due to the fact that budgets do not, of themselves, guarantee the attainment of project objectives; they merely show, by revealing variances, to what extent control has been

effective.

From observing the way in which the greenhouses project was carried out one may conclude that the deficiencies lie essentially in the omission of the budgetary control system rather than in technical problems. It is unwise to suggest either that the project should be cancelled or that it should be allowed to continue operating in the present manner until it fails. Urgent attention must be paid to its rescue. The project needs to be reappraised, its expected costs and benefits should be clearly identified, and budgets should be prepared. The project's management must then apply the monitoring and control processes. This role would be enhanced by the adoption of the uniform accounting system. If these suggestions are carried out, there may be hope for the success of the project in the future.

CHAPTER NINE

ANALYSIS AND CONCLUSIONS DRAWN FROM CASE STUDIES

The Research Summary

The research will be summarised by means of a discussion of the major findings of each chapter respectively. The conclusions will then be based on the overall research findings.

Originally, accounting was limited to recording, accumulating, and conveying financial information in order to disclose the financial position of an enterprise. This view sees the accountant as the keeper of the firm's records and the preparer of financial statements. More recently, however, the role of accounting has broadened, and it has become a significant factor in assisting economic development (Mueller, G. 1967, P. 19). Accounting has passed through many stages from double-entry bookkeeping towards more elaborate forms of financial accounting, management accounting, government accounting and social accounting. The first three are referred to as micro accounting, and the fourth as macro accounting. There has been clear recognition of the need to integrate these areas of accounting into a coherent framework for planning, control and decision-making.

Accordingly, it can be argued that accounting information and techniques should play an important role in both micro and macro economic activities, and that they can assist planning, control and decision-making at both levels. In micro-economics, accounting can assist

in the allocation of resources, in appraising the economic feasibility of a project, choosing between alternative projects, and planning and controlling individual projects. It can thus be seen as a tool in planning and controlling economic activities; and in assisting in, and measuring, economic development. Accounting and economics have in common many tools and techniques, such as cost-benefit analysis, project appraisal, input-output analysis, budgeting, etc., in the analysis of the costs and benefits of economic activities for the development of the national economy. Enthoven A.J. (1973, pp. 130-1) expressed the relationship between accounting and economics as follows:

> "Accounting and economics - particularly micro economics - largely operate from the same raw material; both are concerned with the measurement of, and relationship between, costs and benefits for a business enterprise, a government entity, or for larger aggregates ..... As yet, the historical - financial micro orientation of the enterprise and government accountant has not enabled him to perform the useful task in society to which the discipline seems to lend itself so magnificently."

The measurement of and relationship between costs and benefits for each enterprise are important elements in the formulation of coherent economic programmes which comprise the framework of the nation's economic development activities.

Project appraisal requires the extensive use of past, present, and future data which should be economically meaningful and reflect socioeconomic relationships. When appraising the feasibility of private business investment, decision-making has largely focused on purely financial factors. However, from the social point of view, both private and public investment are an integral part of a nation's economy and they should be assessed within a common framework and treated in the same way, incorporating their costs and benefits to society. Both public and private investment imply the existence of an assumed contract with society, and this has resulted in a demand that both private and public sectors should conform to desirable social ends. Accounting-economic data will be used in the analysis of the social costs and benefits of any proposed project and will thus affect the investment decision.

Enthoven's argument stresses the significance of cost-benefit analysis to economic development. It is well-known that this technique demands extensive accounting information which must be economically orientated and have a comprehensive standardised content. Therefore, the movement of accounting towards economic analysis and closer integration between micro and macro accounting should facilitate the process of cost-benefit analysis and enhance economic development

in accordance with national objectives. Thus it could be argued that the adoption of a uniform accounting system, which provides standardised accounting information, could enhance cost-benefit analysis for economic development.

As a result, it could be inferred that the tendency of some nations, particularly developing countries such as Iraq, to adopt a uniform accounting system, springs from their need to stimulate economic activity at both micro and macro levels through integrated planning, accurate control, and sound decision-making in order to accelerate economic development. Unfortunately, there have been many deficiencies in its application, creating a gap between planned objectives and actual results.

However, if one accepts the assumption that the economic development of a nation is dependent, in part, on sound planning and implementation of investment projects, then it is important to examine the evolution and quality of accounting, auditing and planning in Iraq, given that the major concern of this research is to examine critically the project appraisal techniques introduced in the Iraqi public sector.

Accounting development in Iraq has taken great steps forward since the early 1970's. Auditing has made significant progress, particularly since the law of 1980, and is expected to play an integral part in the future. Planning in Iraq may be described as a well-

organised system, unlike the control and monitoring processes, to which considerable attention will be paid later.

Since the Iraqi agricultural sector was chosen as the empirical subject of this research, it was necessary to examine the planning and control processes used at the macro level, in order to assist the understanding and evaluation of the planning and control processes used at the micro level. This sector has always been given high priority in overall development plans and has the additional advantage of the Supreme Agricultural Council to oversee the planning, control and follow-up processes in this sector. The agricultural sector is of special importance to the economy of Iraq and its contribution to economic development and the follow-up and control processes which are used are discussed in detail.

At the micro level of the Iraqi agricultural sector, two state farm projects were chosen as case studies for two reasons. Firstly, it has been decided by the Iraqi Government that state farms should play a dominant role in the agricultural sector in future. Secondly, these two farms in particular, have been very inefficient, with excessive operating costs and poor productivity, and, in consequence, have become costly to society. This research, therefore, investigated these

two projects step-by-step from the feasibility studies to the operational results.

In order to put Government policy into practice, law No. 50 of 1972 was enacted, creating the General Establishment of Agricultural Administration for the management of all state farms in the country. This consisted of eight Agricultural Administrations, of which Al-Khalis Agricultural Administration was one. The first greenhouses farm project with an area of 96 donums, (240,000 sq m) was constructed in Al-Rashdiya district in three stages in 1976-1978 under the supervision of the Bulgarian Techno-export company. The project's feasibility study, which covered the first two stages only, was prepared by an economist in Al-khalis Agricultural Administration, who concluded that the project was economically feasible and thus recommended its acceptance. This feasibility study has been critically examined in this research and evaluated according to the principles of agricultural project appraisal. Some important criteria which were not included in the feasibility study have been identified and the project's construction and operating stages, and its efficiency indicators have also been discussed and criticised.

The second greenhouses farm project, with an area of 100 donums, was constructed between 1980 and 1982 by the Italian Semi-international Company as an extension

to the Bulgarian Project, on the basis of the recommendations of a feasibility study prepared by the Supreme Agricultural Council. The appraisal techniques of the feasibility study have been critically assessed and the project's construction and operating stages and its efficiency discussed, in order to identify any deficiencies.

A comparison between the planned and actual results for each project was made in order to measure any variances, diagnose any deficiencies, and suggest appropriate remedies to bring the projects into line with national economic development plans.

The Research Conclusions

On the basis of the research findings, several conclusions can be reached with regard to the role of accounting in accelerating economic development in Iraq:

i) It has been stated that, in many developing countries, accounting information and techniques are beginning to play a stronger role in supporting national planners in their attempt to accelerate economic development. Accounting has a vital role to play in economic development, particularly in socialist countries such as Iraq. The adoption of the socialist economic system and the growth of the public sector in Iraq placed more demands on the

collection of accounting data for national economic planning, decision-making and control; a situation which led to the adoption of the uniform accounting system by all economic enterprises.

The traditional accounting system, which was formerly applied in Iraqi organisations, failed to meet the requirements of economic development. This system was based on the U.S.A./U.K. accounting system which has a tendency towards law rather than economics. The value of accounting for economic development depends upon its ability to generate useful standardised economic data for planning, decision-making and control of economic activities at both micro and macro levels.

At the micro level there are, however, many inadequacies which threaten the selection and appraisal of investment projects in Iraq. The economic priority accorded to a project and decisions as to its feasibility, require satisfactory investment criteria which require the measurement of its expected costs and benefits. The role of accounting information is to provide a measurement of the project's expected costs and benefits and to ensure that all relevant factors are incorporated in the decision model. This role has not yet been well-defined in Iraq. In order to improve the appraisal

process in Iraq, more attention should be paid to the role of accounting information and techniques in the feasibility studies on which project decisions are based.

ii) Although Iraq has adopted a uniform accounting system to tackle the problems caused by the diversity of accounting practices, there is evidence that many of these deficiencies still exist due to the inability of the accounting profession to refine the system and to cope with its implementation.

It is widely accepted that a main purpose of a uniform accounting system is to improve the reliability and consistency of accounting data for sound decision-making, planning and control. Most developing countries suffer from the lack of the reliable accounting data needed for developing their national economy, and this has encouraged them to adopt a uniform accounting system to enhance the planning and control processes for accelerating economic development.

The importance of standardised accounting data in a socialist economy is apparent. It is not confined only to the central planning function but is also used as a tool for the monitoring and control of business enterprises. An evaluation of the activities of an enterprise, and a comparison between it and

others in the same sector is essential for measuring and thus improving its overall efficiency and performance. Internal and external auditing can play a leading role in this regard. They can review the economic efficiency of an enterprise, a sector, and, indeed, the whole economy to assist in the allocation of resources (Amey, L.R. 1969, p.13).

It has been mentioned (see chapter five) that the Iraqi Law No. 194 of 1980 laid down the tasks of the Board of Supreme Audit, namely to evaluate financial and economic plans in relation to central planning objectives and to monitor the efficiency of public enterprises to ensure that resources are used in the most efficient manner. In practice, these tasks are not carried out either by the internal audit bodies in the Iraqi Public sector or by the Board of Supreme Audit, despite the fact that the introduction of the uniform accounting system has facilitated these tasks. Thus it may be concluded that the auditing and accounting professions in Iraq need to carry out their duties more efficiently and to learn to cope more effectively with problems relating to economic development.

iii) Since the Iraqi economy is centrally planned and controlled, its economic development depends largely upon accounting data from the private sector, the

public sector, and government agencies. It has been pointed out that at the beginning of the 1970's the uniform accounting system was introduced for the public sector only, while the private sector was left to apply various accounting systems and government agencies applied the Government Accounting system for all ministry headquarters and government non-profit-making agencies. These various accounting systems provided planners with confusing accounting information.

The importance of standardised accounting data for a central planning function results from two main factors (Mueller, G. 1967, pp. 77-98). Firstly, any plan is only as good as the data on which it is based and secondly, there is a high degree of interdependence among firms and among sectors of any economy when all of their respective activities are governed by a master plan. Therefore, a high level of coordination is needed between the accounting systems in these sectors in order to provide top planners with a coherent language for accurate planning and control. This requires that all accounting systems have the same basis, reflecting socio-economic relationships, and geared towards the objectives of economic development.

iv) It could argued that the quality of the control process depends to a great extent on the nature of

the accounting system adopted. However, an examination of the control process in Iraq suggests that the introduction of the uniform accounting system has not brought significant progress in this regard. It may be that these deficiencies are attributable, not to the accounting system, but to inadequacies in the control system. Major inadequacies are the omission of budgetary control, lack of comparison, insufficient feedback and, as a consequence, failure to take corrective action to remedy variances. There is thus a considerable gulf between planning objectives and actual practice which needs to be remedied if the economic development of the nation is to be achieved.

Overall, it seems unlikely that the objectives of economic development can be achieved when there are such discrepancies between the planning and the implementation of economic activities. As a consequence, many questions arise concerning the objectives of these activities, why they are being undertaken and how successful they are in meeting planning objectives, etc.

These questions represent the pillars of the Planning-Programming-Budgeting-System (PPBS), which analyses both accounting and economic factors in order to enable society to achieve an efficient

allocation of resources. In other words, PPBS reflects the overall approach of which cost-benefit analysis forms a part. To a large extent, the system is a straightforward development of current practice, which makes possible the preparation of a comprehensive forward plan, including provision for review of the plan and evaluation of performance against the plan (Peterson,A.W., 1969, p.7). PPBS thus intrinsically involves an accurate control system which could be applied to any corporate body, in either the public or private sector, and hence it would be suitable for a socialist economy, such as Iraq.

Because a uniform accounting system provides data for planning and control purposes it would enhance the role of PPBS in planning and controlling economic activities. It is thus necessary to develop the Iraqi accounting system to cover all economic sectors in order to provide accounting-economic data for all economic activities. If one accepts the view that the failure of the uniform accounting system to bring any great progress in controlling economic activities in Iraq was due to the inadequacy of the control system itself, then the adoption of PPBS would provide an accurate control system and would bridge the gap between planning objectives and actual practice, to the benefit of economic

development.

v) It can be seen from the research findings that the planning authority has realized there is a deep gulf between planning objectives and actual practice. As a result, many regulations and laws have been introduced from 1968 onwards, concerning follow-up to the implementation of national economic plans. These involved various forms which had to be completed by all Ministerial establishments to ensure accurate implementation of national development plans. These forms were designed to elicit all possible information about a project's execution, productivity, and sales, and require detailed information about the planned and actual performance of all economic activities and the causes of variances.

This follow-up system seems to be used as an excuse for a development project's failure rather than for following-up and remedying the deficiencies in actual performance. The empirical examination of project implementation within the national development plan in Iraq provides strong evidence for this argument, as may be seen in the discussion of the case studies in chapters seven and eight.

It can be seen that many investment projects, particularly in the agricultural sector, fail to meet

the requirements of economic development, which suggests that there is a deficiency in the operation of the follow-up system. This is perhaps attributable to the failure of this system to remedy the causes of variances between planned and actual performance. It is not enough to recognize the causes of variances in the projects; the most important thing is to identify and implement appropriate remedies.

vi) The empirical examination of the agricultural sector in Iraq demonstrates that the sector suffers particularly from the lack of the monitoring and control process. This has led in many cases to wrong decisions as may be seen in the following criticisms of the agricultural projects selected to represent the micro level of this sector:

1. The essential criterion for project selection is the achievement of national objectives within the broader framework of economic policy and planning. The accurate appraisal and selection of projects influences the achievement of these objectives and thus of economic development. Accordingly, in the feasibility study of any project consideration should be given to all aspects, financial, economic, and technical, to ensure that the

project is likely to generate the desired benefits for society.

The main reason for the acceptance of the greenhouses projects was to produce and supply out-of-season food products to the central region of Iraq. This objective involved saving the foreign exchange which would be required if these products were imported. Hence, the main concern of the feasibility studies should be to compare the domestic resources which would be sacrificed to earn, or save, the foreign exchange and the amount which would thereby be earned or saved. In fact, both feasibility studies considered only the financial aspects of the projects and ignored cost-benefit analysis, thus widening the gap between the targets of the projects and the economic development plan.

In fact,in evaluating both projects, the feasibility studies adopted virtually identical criteria, namely, project location, construction cost, operational cost, and financial indicators.

In regard to project location, Al-Rashdiya district was selected for the Bulgarian farm project with no indication as to whether other locations or alternative investment proposals were considered. Furthermore, the appraisal of a development project should consider its impact on

the surrounding area, improvement of rural living, regional development, job creation possibilities and the like. The case of the choice of site for the Third London Airport (section 3.4.3) illustrates this.

In the assessment of the Italian Farm project, the evaluators similarly suggested that the project would be located in either Al-Rashdiya district as an extension to the Bulgarian project or as an independent project elsewhere. No specific location was proposed, nor were any logical reasons advanced for the choice of Al-Rashdiya as the project site. The absence of specified alternative locations would certainly restrict the degree of choice and could well lead to inefficient allocation of resources.

The construction costs of the project in both feasibility studies were broken down into those which were to be executed by the foreign companies, such as the construction of the greenhouses, heating boilers, heavy machines and equipment; and those to be executed by Al-Khalis Agricultural Administration, which included the foundation of the greenhouses, buildings, and materials for soil improvement. Many other significant items were ignored on the basis that

they would not be paid by the project itself.

In the construction of the Bulgarian project, for example, there were other authorities involved in respect of the irrigation network, electricity work, civil engineering work for road construction, houses for peasants and artisans, as well as the building of an out-patient clinic and a primary school. The cost of these items should have been taken into account as part of the project's construction costs.

It should be stressed that the main purpose of a feasibility study is to reflect all costs and benefits expected to be generated by a project in a form which will facilitate decision-making and project implementation. Failure to incorporate these items could lead to bias in the investment decision and distort comparison between the planned and actual results of the project.

Due to the similarities between the two feasibility studies, the construction costs of the Italian project were based on the estimated costs of the Bulgarian one, with the addition of 10% as a reserve for price increase. This estimate was used for the project viewed as an independent entity (outside Al-Rashdiya district), while another figure was calculated for the project as an extension to the Bulgarian one. The

evaluators did not identify specific alternative locations, nor did they appraise the project from different viewpoints, although costs of each location would be affected by factors such as land reform, foundation costs, civil engineering costs, irrigation costs, etc.

Another important point is that, in estimating costs, neither feasibility study distinguished between capital and recurrent costs (such as river soil, petmosit, and hay). Moreover, a distinction should be made between items paid by foreign currency and those paid by domestic currency, since the main purpose of the projects was to earn or save foreign exchange through export or avoidance of vegetable imports.

Operational costs of the projects were divided in both feasibility studies into fixed and variable components. The former included depreciation, manpower cost, and interest charges on fixed assets, while variable costs included the materials such as seeds, fertilizers, fuel, oil and the like. Maintenance expenses were also added as a variable component.

However, depreciations should be ignored since capital costs are recorded in the years in which they are incurred and the deterioration in

real value of assets over time should be taken into account in the estimate of the economic life of the project.

Moreover, manpower was categorized as a fixed cost, for it was assumed there was no relationship between the manpower required and the volume of production. This assumption is illogical given that manpower costs are related to the volume of production and ought to be considered as a variable cost.

In appraising the Italian project it was estimated that the manpower required for the project as an extension to the Bulgarian one would be 279, as opposed to 323 in the event of locating the project outside the Al-Rashdiya district. This estimate seems reasonable on the basis of economies of scale, by which the input costs per unit are reduced as a result of increased project size, until the optimal production level is reached (Little, I. and Mirrlees, J. 1974, PP.153-4 ; Bos, D. 1986, P. 163). Moreover, an incremental approach should be used to calculate the costs and revenues of the extension decision.

From the analysis of the projects' costs and revenues, both feasibility studies developed similar financial indicators which were compatible with the general framework of the appraisal. Both

feasibility studies over-estimated productivity and selling prices, thus exaggerating expected sales revenues and profits. As a result, the financial indicators, which included the average revenues obtained from a donum, the average profits expected from a ton of crop, the average cost per donum, etc. were all deceptive since they were based on unrealistic assumptions regarding costs and revenues.

For accurate project appraisal, a uniform accounting system assists the calculation of a project's investment requirements and complementary items, including the cost of roads, irrigation, and other constructions. The system distinguishes between capital and revenue expenditure, further divided into domestic and foreign items, in order to determine the foreign exchange needs of the project. The chart of accounts used in the Iraqi uniform system, for example, includes detailed listings of fixed and working capital which could be a very useful guide for project appraisal. These are itemised as follows: (Al-Mostawfi, S. 1978, PP. 74-119).

11- Fixed Assets

111- Land

1111- Land for agriculture

11111- Cost of purchasing land

11112- Cost of preparing land

1112- Land for construction

1113- Land for storage

112- Buildings, construction and road

1121- Buildings for production activities

1122- Stores and silos

1124- Administration buildings

1125- Labour housing

1127- Roads

1129- Other constructions

11291- Sewers

11292- Water pools

11293- Greenhouses

11294- Water pipelines

113- Machines and equipment

1131- Machines for production activities

11311- Machines purchased locally

113111- Cost of purchase

113112- Wages and others

11312- Imported machines

113121- List price (FOB)

113122- Custom duties

113123- Other Costs

1132- Machines for services

11321- Machines purchased locally

113211- List price

113212- Other costs

11322- Imported machines

113221- Listed price (FOB)

113222- Custom duties

113223- Other costs

115- Tools and moulds

1151- Purchased locally

1152- Imported

116- Furniture and fixtures

1161- purchased locally

1162- Imported

118- Deferred revenue expenditure

1181- Foundations

1182- Start-up

1183- Discovery and survey

1184- Research and development

1185- Intangible fixed assets

1186- Decoration

1187- Miscellaneous deferred expenditure

31- Salaries and wages

311- Clerks' cash salaries

312- Workers' cash wages

313- Wages and salaries for foreigners

314- Social security contributions

3141- Clerks

3142- Workers

3143- Foreigners

315- Other expenses

32- Physical requirements

321- Crude and raw materials

322- Fuel and lubricating oil

323- Spare parts

324- Filling and packing materials

325- Miscellaneous

326- Employees' supplies

327- Water and electricity

33- Service requirements

331- Maintenance services

332- Research and consultancy services

333- Advertisement, printing and hospitality

334- Transfers, travel, and study

335- Fixed assets rent

336- Miscellaneous services

It can be seen that the above accounts distinguish between the cost of land acquisition and that of land preparation, also between buildings for production activities, those for administration, housing for workers and other buildings including the greenhouses themselves. Machinery and equipment are classified into those

needed for production activities and those used for services. Each is categorised according to its source, stating original purchase price, duties and other costs. Tools, moulds, furniture and fixtures are similarly treated in order to show the foreign exchange required for the project. The system has a separate classification for deferred revenue expenditure related directly to production, namely, foundations, start-up costs, survey, research and development expenditures, intangible fixed assets and others. A distinction is drawn between salaries and wages of Iraqi workers and those for foreigners. The same classification is applied to physical and service requirements.

A uniform accounting system can therefore play an important role in guiding project appraisal towards the fulfilment of designated objectives and thus the acceleration of economic development.

2. Project implementation may be considered as the first practical stage in operating a national development plan. Linking this stage with the objectives of economic development requires accurate monitoring and budgetary control. The monitoring process is of considerable importance in ensuring that the process of implementation is

consistent with the designated objectives. Accounting information and techniques play a leading role through the budgetary control system which should incorporate not only the expected costs of the project, but also a time-table for the various phases of its execution. Any delay in a project's implementation may well affect its financial and economic returns (see table 7.2).

The importance of the monitoring and control process during the implementation stage is shown by the both the agricultural projects investigated. In neither case was there a detailed plan for the project's implementation, nor any mechanism for identifying and remedying the problems which occurred, such as the delay in the construction stage of the Italian Project.

Moreover, once the projects were implemented, both feasibility studies were cast aside as though their task was merely to decide whether or not the projects should be accepted. A seasonal production estimate, which contained only the amount of materials required for the vegetables expected to be produced, was prepared by the management. No real budgets for cash, production, sales, manpower, etc. were prepared.

The 1976/1977 agricultural season (from

December to May of the next year) was used as an experimental season for the Bulgarian Project. 24 donums were planted and supervised by the Bulgarian Techno-export Company. Because the productivity of this season was satisfactory, it was taken as a standard for future production and was a major factor in the decision to extend the project area first to 48 donums in 1977 and then to 96 donums in 1978.

From the 1977/1978 season onwards management was in the hands of local project staff. The productivity averages of a cultivated donum between the 1977 and 1981 were almost half of those in the experimental season. Moreover, operating costs were higher than forecast, and, as a consequence, the project realised losses around 1.5 million I.D. between the 1978 and 1981 season. In an attempt to correct these, many studies were carried out on the project's productivity. None of these suggested a complete budgetary system, nor were cost behaviour or monitoring and control processes considered.

Alongside the difficulties facing the Bulgarian project, 1980/1981 was the experimental season for the Italian Project. Under the agreement with the Semi-international Company, the planning and supervision during that season was to

be carried out by the company and a productivity goal was set. The company failed to achieve this productivity, production being less than half of the target. Productivity in the 1981/1982 season was also very low, resulting in a total loss of more than half a million I.D. during the two seasons (1)

In observing the performance of the two projects, it is clear that they met with serious problems in their planning and suffered from the absence of a monitoring, control, and feedback system. As a consequence, they have continued to operate in an uncontrolled manner, making it very hard to achieve their objectives.

Lack of attention to the budgetary system as recommended by the Iraqi uniform accounting system left the project without a firm plan, so that no control or monitoring were applied. Tables 7.28, 7.29, 7.30, and 7.31 of chapter seven show the sales, manpower, capital expenditure, and cash budgets required by the system. For planning and

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(1) A comparison of the losses of the two projects shows that the Bulgarian one lost around 1,5 million I.D during three seasons, while the Italian project lost around 0,5 million I.D. in two seasons. This does not prove the latter was more efficient, given that its average loss was less than that of the former, because the Bulgarian project provided many resources to the Italian project free-of-cost.

control purposes, the system requires many other budgets to be prepared (see the following tables)

Table 9.1 shows the contract and services costs budget which covers the planned contract and provided services costs, comparing them with the actual performance. This budget would monitor the fulfilment of the contract between the project and the foreign companies, indicating the relationship between plan and performance. The additional or cancelled capacity budget shown in table 9.2 would indicate the impact of the extension decision on the capacity of the project. This would provide a standard of comparison with the actual performance, shown in detail in table 9.3. This table shows planned production quantities and values for each quarter, and compares them with actual production. The planned physical requirements budget for each centre, illustrated in table 9.4, is codified according to the uniform chart of accounts. Plans for the previous two years are shown in this table, for comparison with the actual performance in order to reveal any variances. An investigation of the physical requirements of production, whether imported or purchased locally,is shown in table 9.5 which also compares their planned costs with those incurred during the previous year.

Table 9.1

Contract and Services Cost Budget for Year .....

ACCOUNT NO. 34

Chart Of Accounts Code	Name Of Account	Planned	Comparisons		
			Last Year Plan I.D.	The Year Before Plan I.D.	Actual Of The Year Before I.D.
341	Secondary contracts (to be supplemented by detailed data by the entity concerned)				
	Total of 341				
342	Services Received				
	Total of 342				
	Gross of 34				

Table 9.2

Additional Or Cancelled Capacity Budget for the Year.....

Product or service name	Measurement unit	Capacity at the beginning of a period		Additional capacity		Cancelled capacity		Net capacity	
		Available	Maximum	Avail.	Max.	Avail.	Max.	Avail.	Max.
1-									
2-									
3-									
4-									

Table 9.3

Production Quantities and Values Budget for the year.....

Product name	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Total		Last Year Plan		Actual of the Year Before	
	Qnt.	Amo. I.D.	Qnt.	Amo. I.D.	Qnt.	Amo. I.D.	Qnt.	Amo. I.D.	Qnt.	Amo. I.D.	Qnt.	Amo. I.D.	Qnt.	Amo. I.D.
1-														
2-														
3-														
4-														

Table 9.4

Physical Requirements Budget for the Year.....

Chart Of Accounts Codes	Name of Account	Cost Centres					Total	Comparisons		
		Production Cents.	Production Service Cents.	Marketing Cents	Adm. & Fin. Cents	Capital Operation Cents.		Last Year Plan	The Year Before Plan	Actual Of The Year Before
		I.D.	I.D.	I.D.	I.D.	I.D.	I.D.	I.D.	I.D.	I.D.
321	Crude and raw materials									
	Total of 321									
322	Fuel and lubricating oil									
3221	Oil materials									
3222	Gas									
3223	Coal									
	Total of 322									
323	Spare parts									
	Total of 322									

Continued Table 9.4

Chart Of Accounts Code	Name Of Account	Cost Centres					Total	Comparisons		
		Production Cents. 5 I.D.	Production Service Cents. 6 I.D.	Marketing Cents. 7 I.D.	Adm. & Fin. Cents. 8 I.D.	Capital Operation Cents. 9 I.D.	I.D.	Last Year Plan I.D.	The Year Before Plan I.D.	Actual Of The Year Before I.D.
324	Filling and packing materials									
3241	Used filling and packing materials									
3242	Current filling and packing materials									
	Total of 324									
325	Miscellaneous									
3251	Working tools									
3252	Stationery									
3253	Scientific References and Books									

Continued Table 9.4

Chart Of Accounts Code	Name Of Account	Cost Centres					Total	Comparisons		
		Production Cents. 5 I.D.	Production Service Cents. 6 I.D.	Marketing Cents. 7 I.D.	Adm. & Fin. Cents. 8 I.D.	Capital Operation Cents. 9 I.D.	I.D.	Last Year Plan I.D.	The Year Before Plan I.D.	Actual Of The Year Before
3254	Waste and consumed materials									
	Total of 325									
326	Employees supplies									
3261	Clothes									
3262	Foods									
3263	Medical materials									
	Total of 326									
327	Water and elect.									
3271	Water									
3272	Electricity									
	Total of 327									
	Gross of Acc. 32									

Table 9.5

Analysis of Imported and local Physical Requirements (Costs) for the year.....

ACCOUNT NO. 32

Chart Of Accounts Code	Material Name	Imported		Local	
		Planned I.D.	Achievement Of The Year Before I.D.	Planned I.D.	Achievement Of The Year Before I.D.
321	Crude and raw materials				
322	Oil & grease				
323	Spare parts				
324	Filling & packing materials				
425	Miscellaneous				
	Total				

The role of a uniform accounting system as a guide to project appraisal and implementation in achieving designated objectives is apparent. This role does not end at this, but extends further to the control of all economic activities, linking them with national economic objectives.

3. The deficiencies of both projects can, therefore, be largely attributed to the absence of sound budgetary systems, which resulted in an actual performance unrelated to the macro planning of the agricultural sector, in that the projects have operated without regard to the extent to which the started objectives are being obtained.

The adoption of sound accounting and control systems should guide economic development, but it is vital that these systems are applied efficiently. The core of the projects' problems lies in the misuse of the systems applied, and the failure of their administration to apply the uniform accounting system and its budgetary control.

The main responsibilities of a project's management are the formulation of plans and budgets, aiming to obtain the desired objectives, the monitoring of their implementation, the appraisal of actual performance relative to the

plans laid down, the remedying of any deficiencies in performance, and the revision of plans accordingly. All of these processes can be achieved by the joint efforts of accountants, economists, and managers at all levels, who know in advance what is to be achieved and by what means.

The success of a national development plan depends to a large extent on the sound selection and implementation of projects, which represent an important part of its strategy. Therefore, project appraisal objectives must be coordinated with the national planning framework, examining the contribution of the proposed project towards the achievement of the national targets. To bring this about, accounting information is of paramount importance to answer many questions regarding its impact, and its costs and benefits for the economy as a whole. The role of accounting does not end at the decision-making stage, but is extended further to guide the project in its operating stages, monitoring and controlling its activities, comparing the actual results with those planned, and suggesting corrective actions that may be taken to bridge any gap, between planned and actual results.

However, it is apparent from the above tables that adherence to the uniform accounting system in the planning and control of economic activities in all stages is of considerable importance to the attainment of economic development through the accomplishment of project's objectives. It can assist sound decision-making, planning, and control. Comparisons between planned and actual performance for each activity are required by the system in order to identify any failures which threaten the success of the project. This feedback process and resultant corrective action are among the most important tasks of a project's management. Unless this is done, it would be impossible to bring the project under control and ensure its success in the future.

In general, it may be concluded that accounting information and techniques can play a role of crucial importance in the economic development of Iraq. An appropriate use of the uniform accounting system should improve the planning of its socialist economy and at the micro level the system can also be used in the decision-making, implementation, and control processes. The accounting-economic relationship may enhance the role of cost-benefit analysis in accelerating the economic development of the nation. Therefore, attention towards adoption of PPBS in Iraq would

facilitate planning and control at both the micro and macro levels, thus connecting the objectives of investment projects with the goals of economic development.

CHAPTER TEN

THESIS OUTLINE AND CONCLUSIONS

It is concluded in the study that accounting has a major role to play in accelerating economic development, which is highly dependent upon the ability of managers and accountants to improve the existing managerial and accounting practices. In a centrally controlled economy, like Iraq, the need for reliable and timely eco-financial data for planning and controlling economic activities, allocating resources, and improving the utilisation of existing resources is crucial to economic development. The focus of this research has been to assess the role of accounting in the economic development process of Iraq.

For this purpose, it was necessary to examine first the changing role of accounting in the economic development process, with particular reference to that related to planning, control, and decision-making in Iraq. It was then necessary to examine the effect of accounting practices on certain aspects of economic development such as project appraisal and control of new and existing projects. To this end, the Greenhouses Farm Projects, representative of the Iraqi agricultural sector, were chosen as case studies in order to analyse the performance of that sector, to ascertain the role of accounting information and techniques in the improvement of that performance, and to suggest appropriate remedies to bring the projects into line with national objectives for economic development.

There was little published data available for this purpose and literature related to the general role of accounting for economic development in Iraq is almost non-existent, so two comprehensive field studies were carried out over a period of several months, in order to gather general material on Iraq's economic structure, business environment, and planning, control, and decision-making at macro, sectoral, and micro levels. The role of the eco-financial and managerial accounting fields in dealing with these activities is stressed, with particular emphasis on the importance of accounting-economic data in the measurement of costs and benefits, improvement of performance, and consequently, the attraction of investment to the most beneficial projects.

However, the main emphasis was placed upon detailed investigation into the performance of the Greenhouses Farm Projects. Numerous documents related to their feasibility studies, acceptance procedures, implementation, performance, and monitoring were obtained from the projects' book-keeping records, and from interviews with the top managers.

It is worth mentioning that a great deal of technical research has been undertaken in an attempt to rescue these projects, improve their performance, and bring them into line with the economic growth of the nation. Unfortunately, little progress has resulted from

these efforts, which suggests that the deficiency lies in their planning procedures and in the absence of an adequate monitoring and control system, and, as a consequence, failure to take action to correct the variances between the planned and actual results.

The empirical analysis of these two projects revealed the following deficiencies:

1 Project Appraisal Stage

The United Nations Symposium (1966, P.5) pointed out that:

> "The systematic assessment of the data and other information contained in project reports requires a wide range of skills, especially in the fields of engineering and technology, economics and accountancy and financial planning specifically conceived for project appraisal. It was recognized that there was a shortage of those skills in developing countries as well as limited facilities for importing such skills".

In the light of the above argument, the need for a variety of specialists in different fields for the preparation of a project feasibility study is apparent. It has been found that an economist in the Al-Khalis Agricultural Administration prepared the feasibility study for the Bulgarian project, while a committee of five agricultural experts prepared the feasibility study for the Italian project (see Appendices 7.1 and 8.1). These

feasibility studies were highly defective: there was no cost-benefit analysis, no investigation of important technical, managerial, social and commercial aspects, and no examination of the financial characteristics of the projects, in order to determine whether they were likely to provide reasonable economic and financial returns.

However, while the main task of a feasibility study is to measure whether or not the project is socially beneficial, viable, and makes the best use of resources (a task which can only be done through a proper cost-benefit analysis) it should also be regarded as a pilot to guide the project through its implementation and control stages.

2 Implementation and Control

During the implementation stage, both feasibility studies were ignored, their purpose having been merely to decide whether or not the projects should be accepted. Although the project managements, which consisted of agricultural experts only, were responsible for the preparation of annual comprehensive plans, nothing was done in this regard except the preparation of a physical production budget, as a result of which the projects operated in an arbitrary manner.

The absence of management qualified in accounting, and of a proper budgeting system for planning and control purposes, led to mismanagement of the projects, as a result of which they were implemented without regard to the extent to which the desired objectives were attained. This led to the omission of monitoring and control procedures, and, as a consequence, the failure to take action to remedy deficiencies and to correct variations between the planned and actual performance of the projects. These factors are attributable to the lack of accounting experience of the projects' planners at the feasibility study stages and of the managers (both within the projects and in the GEAA) at the implementation and control stages, and to their inability to cope with the problems of project appraisal, implementation, and control in accordance with national objectives.

The empirical observation of the methods of appraisal of these two projects reveals that the absence of a qualified appraisal team containing accounting, management, engineering, agricultural and economic specialists was the main problem, which created ambiguity in the projects' objectives and distorted the costs and benefits to be expected from the projects. Lack of understanding of the accounting, economic and managerial aspects to be

investigated led to superficial appraisal, unwise decision-making and a weak implementation plan and control system.

So far as the managerial aspect is concerned, because the specialism of the managers was agronomy, any plan or decision proceeding from management would be a reflection of their agricultural background, rather than of often more relevant financial criteria. Similarly, at the implementation and operating stages, lack of training and experience in dealing with the problems of accounting, economics, and management, seem to have been the main obstacle in the projects' success. Concern with accounting issues and techniques is an indispensable factor for the planning and control of the projects, linking them with national planning objectives and thus with the economic development of the nation. Management unqualified to cope with these tasks and/or the absence of professional staff to contribute accounting knowledge and techniques, especially those provided by the uniform accounting system which was supposed to be applied in the project, caused lack of attention to the role of accounting system as a guide to the projects' implementation and control in achieving designated objectives. As

a consequence the projects were left without a firm plan, so that no control or monitoring, and thus no feedback and corrective actions were applied.

As a result, the planning process was very superficial, taking the form of a physical production budget only, there was no monitoring and control system, and managerial decisions were focussed upon technical aspects such as the quality of seed and improved fertilizers. Cost allocation and control were ignored, and there was thus no indication of the extent to which the projects were efficiently carried out. The main causes of the problem were the lack of experience and training of the project managers to help them to cope with the problems of development planning, control, and decision-making which were outside their skill and experience. As a consequence, both projects suffered from poor planning, budgeting and control and, consequently, a lack of feedback and corrective action. This lack of awareness of the importance of accounting skills and the absence of training in order to develop those skills was evident throughout the project at all stages, from the feasibility study through to the overall monitoring of the project by the GEAA. This is a problem all too apparent in developing countries and is due partly to a shortage of accountants in

general, but also to a failure to recognise the skills which are necessary for accountants operating within a developing economy. These skills involve a strong emphasis upon information for decisions, planning and budgeting and implementation of control systems rather than the stock exchange orientation which dominates accounting education and training in the U.K. and the U.S.A.

It is often argued that the introduction of a uniform accounting system could compensate for the absence of skilled staff by introducing standard, routine procedures which could be operated in an automatic fashion by low-grade staff, thus providing a regular flow of comparable information for managers. However, the poor performance of the projects has demonstrated that this argument is fallacious in this case, partly because management at all levels and stages had little understanding of the use of the data thus provided, and partly because the standardised information was biased towards reporting and was deficient in many respects for decision-making purposes.

Conclusions

If one accepts that the projects' deficiencies were attributable to lack of planning and omission of a monitoring and control system, then the following remedies which were discussed in depth in the three previous chapters, might play a significant role in the management of future projects.

i) As far as project appraisal in a socialist economy, such as Iraq, is concerned, it is necessary for the feasibility studies to define their objectives clearly, deciding whether they will contribute to the fulfilment of the objectives of the national development plan. Therefore, the appraisal of projects on the lines discussed in chapters seven and eight would indicate their expected net benefits to society and highlight their contribution to economic development.

ii) It was stated that the Iraqi uniform accounting system can assist the calculation of a project's investment requirements and its superior budgetary system can be seen as integrating the planning and control models. Therefore, adherence to this system would be a major step towards accurate project appraisal, and effective implementation and control. However, as argued above, it would be necessary to adjust

the system in certain respects (e.g. recognition of marginal costs and benefits and the identification of the economic costs and benefits attributable to a project) in order to make it compatible with accepted decision-making criterion. It would also be necessary to provide more and better training for the managers and administrations who are expected to use the information generated by the system for managerial purposes.

iii) It must be recognised that a regular process of monitoring and control of economic activities, comparing actual costs and outcomes with those planned, is necessary in order to determine any need for changes in operations or stated objectives. This would require the provision of regular feedback to allow continual monitoring of activities and to permit action to correct any variations between stated objectives and actual results. This continuing process of monitoring, control, and revision of the budgets would accordingly bring planned and actual performance into line, enabling the project to achieve its planned targets or to substitute more realistic plans.

Finally, one can argue that adherence to the uniform accounting system as a consistent and integrated approach to remedy the problem of deficient and disorganised financial and management data has not been acknowledged by Iraqi officials and accountants. The proper application of its techniques for planning, measuring performance, and controlling the economic activities of enterprises would be of great value in this connection.

It is worth stressing that the main purposes of adopting the uniform accounting system in Iraq was to tackle the problems caused by the diversity of accounting practice and thus to improve the reliability and consistency of accounting data for sound decision-making, planning and control, creating a link between the macro and micro levels in order to marshal domestic resources for the acceleration of economic development. Nevertheless, this empirical analysis of the agricultural sector in Iraq suggests that many deficiencies of accounting practice still exist because managers and accountants are not fully conversant with the system and unable to cope with its implementation. The development of the agricultural sector is dependent on the initiative and managerial ability of individual projects, necessitating the appointment of highly trained managers with the assistance of technical, accounting, and economic advisers in drawing up plans

and budgets. Gittinger, J. P. (1982, PP. 14-15) confirmed the importance of managerial skills for the success of project design and implementation, arguing that, when these skills are limited, a training programme should be provided for all personnel levels in a project.

Therefore, in regard to the Greenhouses Farm Projects, one may conclude that poor management was associated with lack of training and motivation of the projects' staff, who did not appreciate the projects' objectives, and the failure, despite the existence of the uniform accounting system, to establish adequate planning and control procedures. In addition, the fact that skilled labour is in short supply in Iraq, so that the staff were secure in their employment, may have influenced their attitude towards the projects' productivity and efficiency. These problems alongside the inability of management to operate the project in line with the designated objectives of agricultural development, may be deemed the main reasons for the projects' inadequate appraisal, implementation and control.

APPENDICES

Appendix 6.1

Follow-up System in Iraq

Form Number 1

1 - Periodic Form for Follow-up to project execution of the national development plan

The Form requires information regarding the following activities:

1. Feasibility Study.
2. Preparation of designs and characteristics.
3. Tender announcement.
4. Supply of principal machinery and equipment.
5. Civil engineering works.
6. Mechanical works.
7. Electronic and electricity works.
8. Setting up machinery and equipment.
9. Personnel training.
10. Experimental operation.
11. Finishing works.
12. Final stages of establishment.
13. Other activities (if any).

For each of the above activities, detailed information is required about planned and actual: starting and finishing date, manpower, actual costs, and causes of variances.

The following reasons may be given in the Follow-up

Source: Ministry of Planning, Central Committee of Follow-up, Forms No. 1. and 2.

process as causes of variances between the planned and actual results. Each cause is given a specific code to be entered as a factor relevant to the variance(s).

Code No.	Causes of Variances
101	Lack of supporting machines and equipment for project execution.
102	Shortage of skilled labour.
103	Shortage of unskilled labour.
104	Shortage/total lack of managerial personnel.
105	Shortage of engineers.
106	Unavailability of spare parts.
107	Lack of supporting raw materials for construction.
108	Unavailability of materials due to delay caused by customs procedures.
109	Unavailability of materials due to lack or poor quality of roads.
110	Unavailability of materials due to lack of transportation.
111	Unavailabilty of materials due to delay caused by import license procedures.
112	Unavailability of materials due to delay of credit letter procedures.
113	Unavailability of materials due to bottle necks in freight, transportation, and ports capacities outside or inside Iraq.

114 Technical inefficiency of the contractor.

115 Managerial inefficiency of the contractor.

116 Financial inefficiency of the contractor.

117 Technical inadequacy of sub-contractors.

118 Financial inadequacy of sub-contractors.

119 Bankruptcy of the contractor.

120 Confiscation of the contractor.

121 Incapacity of the contractor.

122 Decrease in the contract prices from prevailing prices.

123 Lack of time for execution.

124 Inability of the contractor to execute the contract because of other contractual obligations.

125 Inefficiency of the sub-contractor for the electrical foundations.

126 Inefficiency of the sub-contractor for the mechanical foundations.

127 Inefficiency of the sub-contractor for the execution of the civil engineering.

128 Laboratory discovery of failure of supporting materials or services.

129 Omission from the projected programme in execution.

201 Improper use of the authority given to the ministry.

202 Improper use of the authority given to the project's management.

203 Improper use of the authority given to the resident engineer.

204 Delay of project approval in the executing ministry.

205 Delay of project approval in the ministry of planning.

206 Insufficiency of the authority given to the project's management.

207 Inefficiency of the project's technicians.

208 Delay in determining the project location.

209 Changing the agreed project location.

210 Delay in preparation of the project location.

211 Delay in the topographic survey for the project location.

212 Failure to complete the project designs in proper time.

213 Ambiguity of technical characteristics of the project.

214 Ambiguity of the contract conditions of the project.

215 Delay of payment to the contractor.

216 Delay in the execution of the contract

period.

217 Inefficiency of the technical cadre at the sectoral level.

218 Changing of the committee members who are responsible for direct execution of the project.

219 Delay caused by changing the committee decisions.

220 Inefficiency of the project consultant.

221 Delay caused by the committee examining and receiving the project.

301 Bad weather in the project location.

302 Workers' Strike.

303 Unavoidable/unforeseen circumstances.

304 Contractor's death.

305 Insufficiency of bank's facilities.

306 Unavailability of water sources in the project location.

307 Unavailability of electricity power in the project location.

308 Change in the executing body.

309 Several different bodies sharing responsibility for the project.

310 Changing of the establishment requirements during the execution stage.

311 Delay in the laboratory examination of the executed works.

312 Other factors or circumstances.

Form Number 2

2 - Annual Form for follow-up of the productivity targets pursued by national development plan

The Form requires information about the kind of product, size and value of actual production , planned and actual working days, working hours, maintenance days, and causes of variances.

The following reasons are to be used in the follow-up process as causes of variances between the planned and actual practice. Each cause is given a specific code to be entered as a factor relevant to the variance(s).

Code No.	Causes of Variances
First:	Factors or Circumstances Related to Management System
001	The inflexibility of the plan to meet unexpected variables.
002	The lack of a complete and integrated information system for proper planning and follow-up.
003	The lack of an efficient and adequate checking and reviewing system for the achieved and expected result.
004	Unbalanced weights given to pricing and marketing policies.

005 The absence of a scientific description of jobs.

006 Confusion between authorised and delegated responsibilities.

Second: Factors or Circumstances Related to Production

011 Unadequate supply of the production to national and/or international markets.

012 Producing for the purposes of making use of existing capacity regardless of the demand for the product concerned.

013 Increase/decrease in the percentage of defects or rejected units of a specific product.

014 Increase/decrease in actual production quantities.

015 Increase/decrease in the quality of the product(s).

016 Decrease/total stoppage in manufacturing processes because of overstocking.

017 The introduction of new products at the expense of old ones.

Third: Factors or Circumstances Related to Production Equipment

021 Mechanization of one or all manufacturing processes previously manually handled.

022 The use of highly productive new equipment(s).

023 The start of new equipment in the production processes.

024 The development of new production techniques.

025 The appearance/elimination of bottlenecks in various manufacturing processes.

026 Machines were working overtime beyond their planned targets.

027 The advance/delay of planned maintenance.

028 The appearance of technical problems in equipment which has affected the quantity and/or quality.

029 Increase in stoppage of equipment or production lines.

030 Weakness in the efficiency of maintenance.

031 Unavailability/delay in the arrival of spare parts.

Fourth: Factors or Circumstances Related to the Workforce

041 Rise in the productivity of workforce.

042 Workforce is working overtime or during holidays.

043 Improvement in human relation/work conditions/ services offered to the workforce.

044 Shortage in the level of the workforce to meet the requirements of planned production.

045 Shortage/total lack of certain technical workers.

046 Increase in the work cycle (leaving work-appointment-leaving work).

047 The low level of newly appointed workers.

048 Decrease in the level of efficiency of available cadre.

049 Increases in absenteeism.

Fifth: Factors or Circumstances Related to Production Requirememts

051 Decrease/increase in the percentage of waste of crudes and raw materials used in the production processes.

052 High quality/subquality of crudes and raw materials.

053 Unavailability/delay in the arrival of imported crudes and raw materials.

056 Lack of supporting production services to guarantee the streamlining of production.

Sixth: Factors or Circumstances Related to Marketing

061 Inaccuracy in the estimates of the expected demand.

062 The use of stock available from previous periods.

063 Incompatibility between production specifications and the requirements of national and international markets.

064 Increase/decrease in the products' prices relative to equivalent or competitive products.

065 Inability of current transportation capacity

to keep pace with clients' demand.

066 Weakness/total lack of marketing research.

067 Weakness/lack of coordination between personnel responsible for the production processes and those responsible for marketing strategies.

Seventh: Factors or Circumstances Related to Stocking

071 Weakness/lack of efficient stock control of principal and support raw materials and spare parts.

072 Inability of current stocking capacities to stock quantities of crudes and raw materials for a long period of time.

073 Inability of current stocking capacities to stock large quantities.

074 Insufficiency of stock available from previous periods to meet the requirements for production of current periods.

075 Increase in the stock of principal and support raw materials and spare parts to meet unexpected demands.

Eighth: Factors or Circumstances Outside the Control of an Entity

081 Natural disaster (fires, earthquakes, flooding etc.) and international incidents (e.g. wars).

082 Electricity cuts.

083 Technical faults in the manufacturing of

machines.

084 Scarcity of crudes and raw materials because of heavy national or international demands.

085 General scarcity in Iraq of highly technical and managerial staff.

086 Low level of salaries and wages in the governmental sector.

087 Existence of bottlenecks in the ports or transportation capacities outside or inside Iraq.

088 Increase/decrease in the product(s) prices in national or international markets.

089 Illegal or unfair competition in national or international markets.

090 Inefficiency of personnel responsible for marketing inside or outside Iraq.

091 Increase/decrease in demand for the product(s) in national or international markets.

092 Decisions taken outside the entity which affect its works and efficiency.

Ninth: Other Factors or Circumstances

121 To be mentioned by the management of an entity concerned.

122 -------

123 -------

Appendix 7.1

Feasibility Study of the Greenhouses Farm Project

The Bulgarian Group

The feasibility study, for the first and second stages only (1), was prepared by Mr. Al-Selkeni, A. an economist in the Al-Khalis Agricultural Administration-Planning and Follow-up Department. Together with the report and recommendations of the General Establishment for Agricultural Administrations, it was submitted to the Ministry of Agriculture, then to the Ministry of Planning for approval.

The feasibility study included the following sections (2):

1. Introductory section: this included the following headings:
   - A. The purpose of the study.
   - B. The method of research and the sources of data.
   - C. Primary data - the history of the farm, location, area, and the main targets of the project.

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(1) The third stage of the Bulgarian group project, which was executed without a feasibility study, involved the establishment of eight more greenhouses covering an area of 48 donums, to bring the total area of the project to 96 donums.

(2) The author's translation. Source: the feasibility study of the greenhouses project and its proposed extension, Al-Selkeni, 1976, Baghdad.

2. Section two contained the following:

   A. The input requirements for each of the three proposed production alternatives.

   B. Transportation, machinery, other agricultural equipment and implements, required.

   C. Manpower requirements.

   D. Fixed asset requirements.

3. Section three examines the expected yields by quantity and value.

The project was evaluated on the basis of the establishment of the first stage (four greenhouses), aiming to ascertain whether it was feasible to extend it to eight greenhouses (second stage), which would cover an area of 48 donums (D). However, it is necessary to examine the contents of each section in order to understand the project evaluation techniques used in the Iraqi public sector.

Section I

Section one attempts to identify the main objectives of the study. The evaluator classified these objectives as follows:

First: The Main Objectives

1. To predict through the feasibility study the extent to which the project was efficient before the extension (four

greenhouses).

2. To investigate whether or not the proposed extension to eight greenhouses would lead towards increased economic efficiency.
3. To carry out a comparative study between the economic efficiency of the project before and after the extension.

Second: The Secondary Objectives

Through the analysis of the project, its requirements were to be assessed and an annual productivity plan drawn up. To assess these requirements, the analysis of the following items was involved.

1. Input requirements such as seeds, fertilizers, insecticides, etc.
2. Means of transportation, machinery, equipment, and other agricultural tools.
3. Manpower requirements.
4. Seeding, production, and marketing time-tables.
5. Expected production, sales prices, and revenues for each month.
6. Preparation of annual budget of the project, including the expected annual costs and revenues.
7. Economic indicators based on the project's annual plan.

Research Method

This analysis falls into two parts; the first considered the project area at two levels (4 and 8 greenhouses). The second part includes the study of three crop distributions (production alternatives). These are as follows:

1. The crop mix of the first alternative is 50% of the greenhouses planted with cucumbers, and 50% with tomatoes.

   Before the extension, the planted area should be 12 D. cucumbers + 12 D. tomatoes. After the extension it should be 24 D. cucumbers + 24 D. tomatoes.

2. The crop mix of the second alternative is 75% planted with cucumbers plus 25% planted with tomatoes.

   Before the extension the planted area would be 18 D. planted with cucumbers plus 6 D. planted with tomatoes. After the extension it would be 36 D. planted with cucumbers plus 12 D. with tomatoes.

3. The third alternative is 100% cucumbers.

The evaluator argued that the study was confined to these three alternatives due to the fact that cucumbers and tomatoes are the most popular vegetables in Iraq. The high percentage of cucumbers compared with tomatoes

in the above alternatives was due to the high returns from cucumbers.

The Location and Area

The Al-Rashdiya district was selected as the project location for the following reasons:

1. Its proximity to Baghdad city, which is the biggest consumer centre in the country.
2. The situation of the area within the agrarian reform programme which was executed by the Al-Khalis Agricultural Administration.
3. The fertility of the soil and its suitability for vegetable production.
4. The site's proximity to main roads.
5. Al-Rashdiya district's standing as an agricultural development area in the country.

The total area of the farm is 50 donums including 24 D. greenhouses as a first stage. The proposed extension was the establishment of another 4 greenhouses as a second stage, extending the total area of the farm to 96 D.

Section II

In this section the evalutor estimated the requirements per donum for agricultural production as follows:

Materials Required

Table A7.1

Production Requirements Per Donum

Materials	Cucumber	Tomatoes
Seeds	250 G	75 G
Organic Fertilizers	40 CM	30 CM
Chemical Fertilizers	2.5 tons	1.35 tons
Poisons	488 Kg	428 Kg
Planting Nips	2500 pieces	2500 pieces
Threads	125 Kg	125 Kg

According to the above standard requirements the materials required for each of the three alternatives were estimated as follows:

First Alternative:

Before the extension :12D.cucumbers + 12D.tomatoes = 24D.

After the extension :24D.cucumbers + 24D. tomatoes = 48D.

(See Table A7.2).

Table A7.2

Materials Required for the First Alternative

Materials	Price per unit I.D.	Before the extension 24 D.		After the extension 48 D.	
		quantity	cost I.D	quantity	cost I.D.
Cucumber seed	1775	3 Kg	5325	6 Kg	10650
Tomato seed	592	1 Kg	592	2 Kg	1184
Cost of seed			5917		11834
Cost of fert-ilizers			2556		5112
Cost of poisons			4216		8432
Cost of other requirements			2205		4410
Subtotal			14894		29788
Add estimate of Fuel, Oils, and Maintenance costs			15850		29000
Total			30744		58788

Second Alternative

Before the extension:18D. cucumbers + 6D. tomatoes = 24D.

After the extension:36D. cucumbers + 12D. tomatoes = 48D.

(See table A7.3).

Table A7.3
Materials Required for the Second Alternative

Materials	Price per unit I.D.	Before the extension 24 D.		After the extension 48 D.	
		quantity	cost I.D	quantity	cost I.D
Cucumber seed	1775	4.5 Kg	7987	9 Kg	15974
Tomato seed	592	0.5 Kg	296	1 Kg	592
Cost of seed			8283		16566
Cost of fert-ilizers			3000		6000
Cost of poisons			4342		8684
Cost of other requirements			2205		4410
Subtotal			17830		35660
Add estimate of Fuel, Oil, and Maintenance costs			17800		32450
Total			35630		68110

Third Alternative:

Before the extension: 24 D. cucumbers

After the extension: 48 D. cucumbers

(See table A7.4)

The price of 1 Kg of the cucumber's seeds was estimated to be 1775 I.D. The quantity of seed required before the extension would be 6 Kg and the quantity after the extension would be 12 Kg. Accordingly, the

materials required for the third alternative would be as follows:

Table A7.4

Required Materials for the third Alternative

Materials	The cost before the extension I.D	The cost after the extension I.D
Cucumber seed	10650	21300
Fertilizer required	3342	6684
Poisons required	4468	8936
Cost of other requirements	2205	4410
Subtotal	20665	41330
Add the estimation of Fuel oil and maintenance costs	19680	35900
Total	40345	77230

Vehicles, Machinery, Implements,etc. Required

Machinery and agricultural equipment play an important role in the development of a project. The number of vehicles, machines, and implements required are shown in the following table (A7.5):

Table A7.5

Vehicles, Machines, and Equipment Required

Items	Before the extension			After the extension		
	No. required	Values I.D.	Deprec-iations	No. required	Values I.D.	Deprec-iations
Vehicles	7	51900	5190	7	51900	5190
Machines	14	15860	1586	16	20860	2086
Equipment	12	1920	229	20	2240	273
Implements & Others	-	12328	3594	-	21870	6989
Total	-	82008	10599	-	96870	14538

The evaluator argued that the extension of the farm from 24 D. to 48 D. might require an increase in equipment and implements rather than heavy machines and vehicles. The costs of the vehicles and machines were assessed by the Directorate of the Agricultural Machinery and Statistics in the Ministry of Agriculture, with depreciation calculated at 10%, while the depreciation of the equipment, implements, and others was set at various percentages according to their estimated lives.

Manpower Requirements

The manpower for the project was estimated to be 103 people before the extension and 168 people after the extension, with an annual cost of 57060 I.D. and 81900 respectively as shown in the following table (A7.6):

Table A7.6

Manpower Required by the Project

Classification	Monthly salary I.D.	Before the extension		After the extension	
		No.	Yearly salary I.D.	No.	Yearly salary I.D.
Farm Director	170	1	2040	1	2040
Agricultural Engineers	75	2	1800	2	1800
Agricultural Supervisors	70	8	6720	8	6720
Electrical Engineer	200	1	2400	1	2400
Mechanical Technician	70	1	840	1	840
Total Technicians		13	13800	13	13800
Director's Assistant	170	1	2040	1	2040
Administration Officer	75	1	900	1	900
Typists	45	2	1080	2	1080
Store Keeper	90	1	1080	1	1080
Accounting Clerk	50	1	600	1	600
Total Administration Officers		6	5700	6	5700

(Continued)

Table A7.6 Continued

Electrical labour	70	3	2520	5	4200
Boilers labour	70	2	1680	3	2520
Glass labour	40	1	480	1	480
Welding labour	70	1	840	1	840
Drivers	60	12	8640	12	8640
Unskilled labour	30	5	1800	7	2520
Agricultural labour	30	60	21600	120	43200
Total labour		84	37560	149	62400
Grand Total		103	57060	168	81900

As can be seen from the above table, it was estimated that the cost of manpower in the second phase of production (after the extension) would remain almost the same as in the first phase (before the extension), with the exception of Agricultural Labour which was estimated to increase from 60 to 120. Acordingly, the manpower component would decrease from 2377 I.D. per donum before the extension to 1706 I.D. per donum after the extension.

Establishment Costs

The project construction tasks were divided into those which would be performed by the foreign company, and those which would be executed by

Al-Khalis Agricultural Administration as follows:

1. The tasks to be executed by the foreign company included supply and construction of the greenhouses, heating boilers, machines, and accessories. These were estimated at a total cost of 760,000 I.D. before the extension and 1,500,000 I.D. after the extension.
2. The tasks to be executed by the Iraqis, included civil engineering works, land reform, electrical power, foundations of the greenhouses and improvement of the soil content by adding river soil, Petmosit and hay.

   The costs of all above items are shown in the following table (A7.7).

The feasibility study estimated the productive life of the greenhouses, and their accessories at 20 years and the consequent depreciation at 5%. The materials of soil improvement were treated on the same basis. The productive life of the building and other establishments was estimated at 50 years, depreciation therefore being 2% of total cost.

The evaluator argued that the additional investment in an extension of the farm would cause a decrease in the share of each donum of the fixed costs from 2270 I.D. to 2087 I.D., which is equal to 8% of total investment costs.

Table A7.7

The Investment Costs Before and After the Extension

Items	Before the extension		After the extension	
	Costs I.D.	Depreciation	Costs I.D.	Depreciation
Greenhouses & Machines	760,000	38,000	1,500,000	75,000
Building & Establishments	640,000	12,800	890,000	17,800
Vehicles & Agricultural Implements	82,000	10,610	96,870	14,550
Improvement of soil Characteristics				
Petmosit	51,240	2,560	102,480	5,120
Hay	4,800	240	9,600	480
River Soil	18,000	900	36,000	1,800
Total	1,556,040	65,110	2,634,950	114,750

Section III

Annual Capacity of the Project and Expected Revenues:

The average yield of one donum was estimated at 50 tons/donum of cucumbers and 20 tons/donum of tomatoes. Accordingly, the expected crop for a single season would be as follows:

First Alternative:

Before the extension, 600 tons cucumbers + 240 tons tomatoes.

After the extension 1200 tons cucumbers + 480 tons tomatoes.

Second Alternative:

Before the extension 900 tons cucumbers + 120 tons tomatoes.

After the extension 1800 tons cucumbers + 240 tons tomatoes.

Third Alternative:

Before the extension 1200 tons cucumbers.

After the extension 2400 tons cucumbers.

The seasonal time-table for the crop was drawn up as shown in the following table (A7.8):

Table A7.8

Production Forecasts

Crop	Loop	Seeding Time	Transplant Time	Periods
Cucumber	Early	5, 10	5, 11	Dec. - June
Cucumber	Medial	10, 11	10, 12	Jan. - June
Tomatoes	Early	25, 0	1, 11	Jan. - June
Tomatoes	Medial	20, 10	1, 12	Feb. - June

The expected cucumber and tomato crop and their total revenues for one season are shown in the following tables:

First Alternative

Table A7.9

Expected Production and Revenue Through the Months of the Season

Months	Cucumber					Tomatoes					Total Revenue	
	Early	Medial	Total	Price per ton I.D.	Total Value	Early	Medial	Total	Price per ton I.D.	Total Value		
Dec	9	-	9	125	1125	-	-	-	-	-	1125	)
Jan	18	9	27	880	23760	9	-	9	180	1620	25280	)
Feb	48	36	84	580	48720	24	18	42	250	10500	59220	)Before
Mar	66	72	138	470	64860	30	36	66	290	19140	84000	)the
Apr	66	72	138	320	44160	30	36	66	360	23760	67920	)Exte-
May	63	66	129	120	15480	18	18	36	180	6480	21960	)nsion
June	30	45	75	30	2250	9	12	21	40	840	3090	)
Total	300	300	600	334	200355	120	120	240	260	62340	262695	
Dec	18	-	18	125	2250	-	-	-	-	-	2250	)
Jan	36	18	34	880	47520	18	-	18	180	3240	50760	)After
Feb	96	72	168	580	97440	48	36	84	250	21000	118440	) the
Mar	132	144	276	470	129720	60	72	132	290	38280	168000	)Exte-
Apr	132	144	276	320	88320	60	72	132	360	47520	135840	)nsion
May	126	132	258	120	30960	36	36	72	180	12960	43920	)
June	60	90	150	30	4500	18	24	42	40	1680	6180	)
Total	600	600	1200	334	400710	240	240	480	260	124680	525390	

Second Alternative

Table A7.10

Expected Production and Revenue Through the Months of the Season

Months	Cucumber					Tomatoes					Total Revenue	
	Early	Medial	Total	Price per ton I.D.	Total Value	Early	Medial	Total	Price per ton I.D.	Total Value		
Dec	18	-	18	125	2250	-	-	-	-	-	2250	)
Jan	36	9	45	880	39600	-	-	-	-	-	39600	)
Feb	96	36	132	580	76560	-	18	18	250	4500	81060	)Before
Mar	132	72	204	470	95880	-	36	36	290	10440	106320	)the
Apr	132	72	204	320	65280	-	36	36	360	12920	78240	)Exte-
May	126	66	192	120	23040	-	18	18	180	3240	26280	)nsion
June	60	45	105	30	3150	-	12	12	40	480	3630	)
Total	600	300	900	334	305760	-	120	120	263	31620	337380	
Dec	36	-	36	125	4500	-	-	-	-	-	4500	)
Jan	72	18	90	880	79200	-	-	-	-	-	79200	)
Feb	192	72	264	580	153120	-	36	36	250	9000	162120	)After
Mar	264	144	408	470	191760	-	72	72	290	20880	212640	)the
Apr	264	144	408	320	130560	-	72	72	360	25920	156480	)Exte-
May	252	132	384	120	46080	-	36	36	180	6480	52560	)nsion
June	120	90	210	30	6300	-	24	24	40	960	7260	)
Total	1200	600	1800	334	611520	-	240	240	263		674760	

Third Alternative

Table A7.11

Expected Production and Revenues Through the Months of the Season

Months	Cucumber Only					
	Early	Medial	Total	Price per ton I.D.	Total Value	
Dec	18	-	18	125	2250)	
Jan	36	18	54	880	47520)	
Feb	96	72	168	580	97440)	
Mar	132	144	276	470	129720)	Before the
Apr	132	144	276	320	88320)	Extension
May	126	132	258	120	30960)	
June	60	90	150	30	4500)	
Total	600	600	1200	334	400710	
Dec	36	-	36	125	4500)	
Jan	72	36	108	880	95040)	
Feb	192	144	336	580	194880)	After the
Mar	264	288	552	470	259440)	Extension
Apr	264	288	552	320	176640)	
May	252	264	516	120	61920)	
June	120	180	300	30	9000)	
Total	1200	1200	2400	334	801420	

Financial Appraisal

The study used three techniques for assessing the feasibility of the project, involving the following financial indicators:

1. The expected annual production costs of the project, comprising fixed costs, variable costs, and interest charges on capital.
2. The expected annual revenues of each alternative.
3. The expected annual profits or losses.

Expected Production Expenses Before the Extension:

Annual Fixed Expenses:

These expenses include depreciation of greenhouses, buildings, machinery, vehicles, and the materials used for soil improvement, plus the cost of manpower and interest charges on fixed assets. The total costs of these items were estimated at 199,970 I.D. This figure is assumed to be fixed in the case of each of the alternative crop mixes before the extension. The following table (A7.12) shows the calculation of this figure:

Table A7.12

Calculation of Annual Fixed Expenses Before the Extension

Items	Expected annual costs I.D.	Percentage to total
Depreciation of Buildings including greenhouses	50,800	25.4
Depreciation of Vehicles, Machinery, etc.	10610	5.3
Depreciation of Soil Improvement materials	3700	1.9
Cost of Manpower	57060	28.5
Interest charges on fixed assets	77800	38.9
Total	199,970	100 %

According to the above table the annual operating costs for each alternative before the extension will be as follows (A7.13, 7.14, 7.15):

Table A7.13

Annual Production Costs Before the Extension

(First Alternative)

Items	Amount (I.D)	Grand Total (I.D.)
A. Fixed Costs	199,970	199.970
B. Variable Costs		
Seed costs	5,920	
Fertilizer costs	2,760	
Poison costs	4,220	
Other costs	2,200	
Fuel,Oil, and maintenance costs	15,850	
Interest charges on working capital	1,540	32,290
Total		232,260

Table A7.14

Annual Production Costs Before the Extension

(Second Alternative)

Items	Amount (I.D)	Grand Total (I.D.)
A. Fixed Costs	199,970	
		199.970
B. Variable Costs		
Seed costs	8,280	
Fertilizer costs	3,000	
Poison costs	4,340	
Other costs	2,200	
Fuel,Oil, and maintenance costs	17,800	
Interest charges on working capital	1,790	
		37,410
Total		237,380

Table A7.15

Annual Production Costs Before the Extension

(Third Alternative)

Items	Amount (I.D)	Grand Total (I.D.)
A. Fixed Costs	199,970	
		199.970
B. Variable Costs		
Seed costs	10,650	
Fertilizer costs	3,350	
Poison costs	4,470	
Other costs	2,200	
Fuel,Oil, and maintenance costs	19,680	
Interest charges on working capital	2,020	
		42,370
Total		242,340

Production Costs After the Extension:

Annual Fixed Expenses:

The annual fixed expenses of the project after the extension were estimated at 328,400 I.D. This figure included the depreciation of greenhouses, buildings, machinery and vehicles, and the materials used for soil improvement, plus the cost of manpower and interest charges on fixed assets as shown in Table A7.16.

Table A7.16

Calculation of Annual Fixed Expenses After the Extension

Items	The expected annual costs I.D.	Percentage to total
Depreciation of Building including greenhouses	29,800	28.3
Depreciation of Vehicles, Machinery, etc.	14,550	4.4
Depreciation of Soil Improvement materials	7,400	2.3
Cost of Manpower	81,900	24.9
Interest charges on fixed assets	131,750	40.1
Total	328,400	100 %

The operating costs of each alternative after the extension were calculated by adding the variable costs to the above figure of fixed costs as shown in the following tables A7.17, 7.18, 7.19:

Table A7.17

Annual Production Costs After the Extension

(First Alternative)

Items	Amount I.D.	Grand Total I.D.
A. Fixed Costs	328,400	
		328,400
B. Variable Costs		
Seed costs	11,830	
Fertilizer costs	5,120	
Poison costs	8,430	
Other costs	4,400	
Fuel,Oil, and maintenance costs	29,000	
Interest charges on working capital	2,940	
		61,720
Total		390,120

Table A7.18

Annual Production Costs After the Extension

(Second Alternative)

Items	Amount I.D.	Grand Total I.D.
A. Fixed Costs	328,400	
		328,400
B. Variable Costs		
Seed costs	16,570	
Fertilizer costs	6,000	
Poison costs	8,680	
Other costs	4,400	
Fuel,Oil, and maintenance costs	32,450	
Interest charges on working capital	3,400	
		71,500
Total		399,900

Table A7.19

Annual Production Costs After the Extension

(Third Alternative)

Items	Amount I.D.	Grand Total I.D.
A. Fixed Costs	328,400	
		328,400
B. Variable Costs		
Seed costs	21,300	
Fertilizer costs	6,680	
Poison costs	8,940	
Other costs	4,420	
Fuel,Oil, and maintenance costs	35,900	
Interest charges on working capital	3,860	
		81,100
Total		409,500

To measure the profitability of the alternatives, the expected annual sales revenue of each one, as calculated in tables A7.9, A7.10 and A7.11 must be compared with the annual production costs before and after the extension, as shown in the following table A7.20:

Table A7.20

Expected Annual Production Costs and Sales Revenue of the Alternatives

Alternative	Production costs	Sales revenue
1. Before the extension		
First alternative	232,260	262,700
Second alternative	237,380	337,380
Third alternative	242,340	400,710
2. After the extension		
First alternative	390,120	525,390
Second alternative	399,900	674,760
Third alternative	409,500	801,420

Profit Calculation

The calculation of profits resulting from the application of each alternative depends upon the following conditions:

1. Fulfilment of the projected average production which was estimated at 50 tons/pre donum for cucumbers and 20 tons/per donum for tomatoes.
2. Realisation of the projected sale prices which were estimated at 334 Fils/Kg for cucumbers and 260 Fils/Kg for tomatoes.
3. The annual production costs of each

alternative should not exceed the costs projected in the tables above.

The feasibility study used two technical measures for the profits, namely:

1. Economic profits: These are defined as the cash surplus from sales revenue after deducting the annual fixed and variable production costs, including interest charges on capital (for both fixed assets and working capital).
2. Normal profits: These are obtained when sales revenue is equal to total production costs. In other words, they represent interest charges on fixed assets and working capital.
3. Total profits: These represent economic profits plus normal profits.

The following tables show the application of these profit measures to each alternative and according to the above assumptions.

Table A7.21

Sales Revenue, Production Costs, and Expected Profits for The First Alternative

Items	Before the extension (I.D.)	After the extension (I.D.)
Cucumber sales revenue	200,350	400,710
Tomatoes sales revenue	62,350	124,680
Total of sales revenue	262,700	525,390
Seed costs	5,920	11,830
Fertilizer costs	2,520	5,120
Poison costs	4,220	8,430
Other costs	2,200	4,400
Fuel,oil, and maintenance costs	15,850	29,000
Manpower costs	57,060	81,900
Depreciation of vehicles, machines, etc.	10,610	14,550
Depreciation of greenhouses and buildings	50,800	92,800
Depreciation of soil improvement materials	3,700	7,400
Interest charges on fixed assets and working capital 5% (Normal profits)	79,340	134,690
Total of expected costs	232,260	390,120
Economic profits	30,440	135,270
Total expected profits (Normal profits + Economic profits)	109,780	269,960

Table A7.22

Sales Revenue, Production Costs, and Expected Profits for The Second Alternative

Items	Before the extension (I.D.)	After the extension (I.D.)
Cucumber sales revenue	305,760	611,520
Tomatoes sales revenue	31,620	63,240
Total of sales revenue	337,380	674,760
Seed costs	8,280	16,576
Fertilizer costs	3,000	6,000
Poison costs	4,340	8,680
Other costs	2,200	4,400
Fuel,oil, and maintenance costs	17,800	32,450
Manpower costs	57,060	81,900
Depreciation of vehicles, machines, etc.	10,610	14,550
Depreciation of greenhouses and buildings	50,800	92,800
Depreciation of soil improvement materials	3,700	7,400
Interest charges on fixed assets and working capital 5% (Normal profits)	79,590	135,150
Total of expected costs	237,380	399,900
Economic profits	100,000	274,860
Total expected profits (Normal profits + Economic profits)	179,580	410,010

Table A7.23

Sales Revenue, Production Costs, and Expected Profits for The Third Alternative

Items	Before the extension (I.D.)	After the extension (I.D.)
Cucumber sales revenue	400,710	801,420
Seed costs	10,650	21,300
Fertilizer costs	3,350	6,680
Poison costs	4,470	8,940
Other costs	2,200	4,420
Fuel,oil, and maintenance costs	19,680	35,900
Manpower costs	57,060	81,900
Depreciation of vehicles, machines,etc.	10,610	14,550
Depreciation of greenhouses and buildings	50,800	92,800
Depreciation of soil improvement materials	3,700	7,400
Interest charges on fixed assets and working capital 5% (Normal profits)	79,820	135,610
Total of expected costs	242,340	409,500
Economic profits	158,370	391,920
Total expected profits (Normal profits + Economic profits)	238,190	527,530

Conclusions and Recommendations

In this section an attempt was made to establish some guidelines which could be used for evaluation purposes in the feasibility study. These guidelines were as follows:

1. Indicators of Financial Performance:

According to economic profits which were calculated in the previous tables, the payback period was estimated at 6 - 9 years before the extension and 4 - 7 years after the extension, depending on the crop components of the alternatives. The following table (A7.24) shows the minimum and maximum expectation of sales revenue, annual costs, and total profits.

Table A7.24

The Indicators of Financial Appraisal

Items	Before the extension		After the extension	
	Minimum (I.D.)	Maximum (I.D.)	Minimum (I.D.)	Maximum (I.D.)
Total annual sales revenue	262,700	400,710	525,390	801,420
Total annual costs	232,260	242,340	390,120	409,500
Economic profits	30,440	158,370	135,270	391,920
Total profits (Normal profits plus economic profits)	109,780	238,190	269,960	527,530

On the basis of the above table, the evaluator argued that the project was financially profitable, and more so after the extension than before. From another standpoint, he argued that, since the project would exist for social benefit, it could, therefore, dispense with economic profits, which may be considered as abnormal profits for socialist economies like Iraq. Accordingly, to achieve obtain normal profits alone, the average price of cucumbers and tomatoes should be reduced as follows:

	Before the extension	After the extension
1st alternative	36 Fils/Kg	81 Fils/Kg
2nd alternative	98 Fils/Kg	135 Fils/Kg
3rd alternative	132 Fils/Kg	163 Fils/Kg

2. Indicators of Economic Performance:

The evaluator considered the calculation of value added as one of the economic indicators which measured the desirability of the project, and regarded net economic profit as a supporting indicator. This was calculated according to the following equations:

Aggregate value added = value of outputs - value of inputs .

Net value added = aggregate value added - depreciation.

Net economic profit = total sales revenue - total costs.

These are indicated by the figures shown in the following table (A7.25):

Table A7.25

Expected Value Added and Net Economic Profit

Items	Before the extension		After the extension	
	Minimum (I.D.)	Maximum (I.D.)	Minimum (I.D.)	Maximum (I.D.)
Total sales revenue	262,700	400,710	525,390	801,420
Cost of production requirements	30,750	40,350	58,780	77,230
Cost of depreciation	65,110	65,110	114,750	114,750
Cost of manpower	57,060	57,060	81,900	81,900
Interest charges on capital	79,340	79,820	134,690	135,610
Total costs	232,260	242,340	390,120	409,500
Aggregate value added	231,950	360,360	466,610	724,190
Net value added	166,840	295,250	351,860	609,440
Net economic profit	30,440	158,370	135,270	391,920

For the above table, the evaluator used value added as a yardstick for measuring the economic desirability of the project. Moreover, many other criteria were taken into consideration to support the decision on the acceptability of the project. These are shown in the following table (7.26):

Table A7.26

Indicators of the Project's Economic Return

Indicators	Before extension		After extension	
	Minimum (I.D.)	Maximum (I.D.)	Minimum (I.D.)	Maximum (I.D.)
Average costs of planting a donum	9,677	10,097	8,128	8,530
Average revenue obtained from a donum	10,945	16,696	10,945	16,696
Average economic profit obtained from a donum	1,268	6,599	2,818	8,166
Average total profit obtained from a donum	4,574	9,925	5,625	10,990
Average costs of a ton of crop	276	334	232	334
Average revenue obtained from a ton of crop	313	202	313	171
Average economic profit obtained from one ton of crop	37	132	81	163
Average total profit obtained from one ton of crop	131	198	161	220
Productivity of one Iraqi Dinar (I.D.) invested	1,720	2,465	2,060	2,925

In conclusion, the evaluator made the following recommendations:

1. As a result of the financial and economic appraisals, the project should be accepted because it was profitable and also provided net social benefits.
2. The proposal of the project's extension from 4 - 8 greenhouses seemed justified for the following reasons:
   A). To support the high demand for vegetables during the winter season. By carrying out the proposed extension, the production capacity would increase to almost twice what it was before the extension.
   B). The economic characteristics of mass production which led to an increase in total sales revenue and a consequent increase in the economic and normal profits, and net value added as shown in the previous tables.
   C). Increase in cash accumulation as a consequence of the project's extension which led to a decrease in the payback period from 6 - 4 years or from 9 - 7 years according to the choice of alternative.
3. In respect of alternatives, there are two view points to be taken into consideration:

A). Commercial Viewpoint:

This is concerned only with the project's profitability. Therefore, to choose among the alternatives, the third alternative has to be accepted because it gives the highest profitability. The profitability of this alternative was calculated for one season at almost 150,000 I.D. before the extension and 320,000 I.D. after the extension.

B). Socialist Viewpoint:

The evaluator argued that since the main objective of this project is to supply food products out of season, the social benefit aspect of the project must be considered regardless of profit figures. Accordingly, the second alternative represents the optimal one because it satisfies the demand for both products.

Appendix 8.1

The Feasibility Study of the Greenhouses Farm Project

The Italian Group

According to the instruction of Supreme Agricultural Council No. 4683 of 8/4/1978 a committee of five agricultural experts was set up to prepare a feasibility study of a proposed greenhouses project, which included the establishment of 17 greenhouses covering an area of 100 Donums. The committee was headed by a member of the Supreme Agricultural Council. On May, 18, 1978 the feasibility study was completed and submitted with the committee's report to Supreme Agricultural Council for approval. The study was more rational than the previous one, prepared for the first stage of the project (Appendix 7.1).

This study was compiled under four parts (1). Part one concerned the project site, assessment of the production requirements, and the amount and value of the expected production. Part two considered the project on the assumption that it would be established in a location other than Al-Rashdiya district, rather than as an extension to the previous project (the Bulgarian Project). Part three discussed the feasibility study from the view-point that it would be an extension to the

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(1) The author's translation. Source:Supreme Agricultural Council , "The Feasibility Study of the Greenhouses Project", Baghdad, May, 1978.

main project. Part four contained the conclusions and recommendations.

The feasibility study included the following sections:

1 - Part One: Choice of site, production requirements and capacity.

Chapter One: The project's objectives and the relevant data.

Chapter Two: Estimated costs for production.

Chapter Three: Annual capacity and expected revenues.

2 - Part Two: Project appraisal for a location outside Al-Rashdiya.

Chapter One: Financial appraisal.

Chapter Two: Economic appraisal.

3 - Part Three: Appraisal for a location outside Al-Rashdiya.

Chapter One: Costs estimates.

Chapter Two: Financial appraisal.

Chapter Three: Economic appraisal.

4 - Part Four: Conclusions and recommendations.

Part One

1.1 Chapter One: this examined the objectives of the study, which were divided as follows:

First: The Main Objectives

1. To investigate whether or not the project would be economically viable.

2. To establish a guide to be followed in the preparation of the feasibility studies of any future agricultural project.

Second: The Secondary Objectives

The evaluators argued that since this study would be a tentative plan for the project implementation, the following items should be assessed :

1. Production requirements such as seeds, fertilizers, insecticides etc.
2. Means of transportation, machines, equipment, and tools.
3. Manpower requirements.
4. Seeding, transplanting, picking and marketing time-table.
5. Level of production, sale prices, and expected revenues.
6. Preparation of annual budget of the project, including expected annual costs and revenues.
7. Economic indicators of the project's annual plan.

Data Requirements

In preparing the feasibility study, data was gathered on the following basis.

1. Establishment costs: These costs were estimated on the basis of the actual

establishment costs of the Bulgarian Project plus 10% of its actual cost as a contingency for price increases.

2. Production requirements and manpower costs: These were estimated in the way in which items in the previous feasibility study were assessed.

3. Sales price assessment of expected production: To assess the sale price of production, and hence the expected revenues, the feasibility study referred to the seasonal reports of The State Organization of Fruit and Vegetable Marketing and the marketing reports of the Greenhouses project of the years 75-78.

4. Crop formations: In the same way as the previous feasibility study, the committee assumed that there were three crop mixes to be considered and the data is gathered accordingly. These mixes were:

   a) The first alternative was 50% planted with cucumbers and 50% with tomatoes.

   b) The second alternative was 75% planted with cucumbers and 25% planted with tomatoes.

   c) The third alternative was 100% of the area planted with cucumbers.

5. Depreciation: The evaluators suggested the use of the straight line depreciation method,

using the following depreciation percentages:

a) Greenhouses: The productive lives were determined at 20 years. The annual depreciation percentage, therefore, is 5% of total cost.

b) Buildings and establishments: Their productive lives were assessed at 50 years (depreciation percentage 2%).

c) Vehicles and machinery: Their productive lives were determined at 10 years (depreciation percentage 10%).

d) Agricultural tools and implements: The productive lives were determined variously between 2-8 years.

6. Government subsidies for imported items: The evaluators did not consider the subsidies on imported items in the financial and economic analysis of the project. Their justification was that government policy is to subsidize all imported items whether or not the project is implemented.

7. Irrigation cost: It was mentioned in the previous chapter that the project depended on the Al-Khalis Irrigation Project, which is one of the organisations affiliated to the Al-Khalis Agricultural Administration. The greenhouses project paid nothing for the water

supplied, and the evaluators neglected this cost assuming that it did not alter the performance of the project.

8. Opportunity cost of land and capital: It was argued by the evaluators that there was no time to analyse the opportunity cost of land and capital because of the urgency of the feasibility study. Thus they decided to ignore it.

9. Net present value technique: Although the evaluators referred to the importance of this technique, they did not use it in the study due to lack of time. They used a static method which based on evaluation of the first year as a consistent indicator to reflect the expected costs and benefits during the project's life, which was estimated at 20 years.

Choice of the Project Site:

The committee considered many factors, related not only to the location of this project but to other typical agricultural projects; these were:

1. It should be close to main roads, near the market centre of a main city and in an area with an irrigation network.
2. It should be situated in an electricity network

area.

3. The soil texture of the location should be suitable for agriculture.
4. The manpower required for the project should be available in the chosen location.

Nevertheless, the committee left the ultimate decision for the project site to the results of the financial and economic analysis in parts two and three of the study (2).

1.2 Chapter Two:

This chapter attempted to determine the requirements per donum for agricultural production and to estimate their costs. The following table shows the production requirements per donum:

Table A8.1

Production Requirements Per Donum

Materials	Cucumber	Tomatoes
Seeds	250 G.	75 G.
Organic Fertilizers	40 C.M.	30 C.M.
Chemical Fertilizers	2.5 Tons	1.35 Tons
Poisons	488 Kg.	428 Kg.
Planting Nips	2500 pieces	2500 pieces
Threads	125 Kg.	125 Kg.

(2) It is worth stressing that the committee did not propose any location other than Al-Rashdiya.

According to the above standard requirements, costs for the first alternative (50 donum cucumber plus 50 donum tomatoes) were estimated as shown in the following table:

Table A8.2

Estimated Costs for the Materials Required for the First Alternative

Materials	Price Per Unit I.D.	Quantity	Costs I.D.
Cucumber Seed	1500	12.5	18750
Tomato Seed	600	3.75	2250
Cost of Seeds			21000
Cost of Fertilizers			12210
Cost of Poisons			16210
Cost of other requirements			8740
Subtotal			58160
Add: Costs of Fuel, Oil, and Maintenance			50850
Total			109010

On the same basis, the costs of the materials required for the second (75 donum cucumber plus 25 donum tomatoes) and third alternatives (100 donum cucumber) are as shown in the tables A8.3 and A8.4:-

Table A8.3

Estimated Costs for the Materials Required for the Second Alternative

Materials	Price Per Unit I.D.	Quantity	Costs I.D.
Cucumber Seed	1500	18,75	28125
Tomato Seed	600	1,875	1125
Cost of Seeds			29250
Cost of Fertilizers			13635
Cost of Poisons			16655
Cost of other requirements			8740
Subtotal			68280
Add: Costs of Fuel, Oil, and Maintenance			56990
Total			125270

Table A8.4

The Estimated Costs for the Materials Required for the Third Alternative

Materials	Costs I.D.
Cucumber Seed	37500
Fertilizer Required	15075
Poisons Required	17110
Other Requirements	8740
Subtotal	78425
Add: Costs of Fuel, Oil, and Maintenance	63000
Total	125270

The Requirements of Manpower

The manpower required for the project, if it were to be established independently from the main project, was estimated to be 323 employees with an annual cost of 165540 I.D. as shown in the following table. This was based on the actual practice in Al-Rashdiya greenhouses project (the Bulgarian Project) at the time of the preparation of this feasibility study.

Table A8.5

Manpower Required for the Project

Classification	Monthly Salary I.D.	No. required	Yearly Salary I.D.
Farm Director	175	1	2100
Agricultural Engineer	80	5	4800
Agricultural Supervisor	70	16	13440
Electrical Engineer	200	1	2400
Mechanical Engineer	200	1	2400
Total of Technicians		24	25140
Director Assistant	170	1	2040
Administration Officers	75	2	1800
Typist	50	2	1200
Store Keeper	90	1	1080
Store Keeper Assistant	50	1	600
Accounting Clerk	80	1	960
Total of Administration Officers		8	7680

Table A8.5 continued

Electrical Labour	70	6	5040
Boilers Labour	70	4	3360
Class Labour	50	1	600
Welding Labour	70	1	840
Drivers	60	19	13680
Unskilled Labour	35	10	4200
Agricultural Labour	35	250	105000
Total Labour		291	132720
Grand Total		323	165540

Establishment Costs

As can be seen from the previous appendix (7.1), the project construction operations were divided into those which would be executed by the foreign company, and those which would be executed by Al-Khalis Agricultural Administration. This study followed the same basis in determining establishment cost:

1. The tasks to be executed by Al-Khalis Agricultural Administration included land preparation, foundations for the greenhouses, civil engineering works, electrical power and improvement of soil content by adding river soil, petmosit and hay. These were estimated at a total cost of 1,550,000 I.D. In addition Al-Khalis agricultural administration was responsible for the import of vehicles and agricultural implements for the project. These were estimated at a total cost of

155,000 I.D.

2. The tasks to be executed by the foreign company included supply and construction of the greenhouses, heating boilers, machines and their accessories. These were estimated at a total cost of 3,576,000 I.D., including foreign company supervision for a two year period.

The following table shows the estimate of the establishment costs of the project.

Table A8.6
Establishment Costs of the Project

Items	Costs I.D	Total I.D.
1 - The Foreign Company		
Greenhouses, heating boilers, Machines and supervision.		3,576,000
2 - Al-Khalis Agricultural Administration		
Land preparation, the foundations, civil engineering works, electrical power.	1,284,000	
Improvement of soil content:-		
River Soil	37,500	
Petmosit	213,500	
Hay	15,000	
Vehicles and Agricultural implements.	155,000	
		1,705,000
Total		5,281,000

1.3 Chapter Three: Annual capacity of the project and expected revenues.

It was argued above that the committee assumed that there were three crop alternatives (containing either 50% of the greenhouses planted with cucumbers and 50% with tomatoes, 75% of the greenhouses planted with cucumbers plus 25% planted with tomatoes, or 100% of the greenhouses planted with cucumbers only). The average yield of a donum was estimated at 50 ton per donum of cucumbers and 20 ton per donum of tomatoes. Accordingly, the expected crop for a single season would be as follows:

First Alternative: 2500 tons cucumbers + 1000 tons tomatoes.

Second Alternative: 3750 tons cucumbers + 500 tons tomatoes.

Third Alternative: 5000 tons cucumbers.

Considering the expected prices and revenues for the crop, the evaluators argued that prices, and hence revenues, would differ from month to month in an agricultural season. The price curve of the cucumber crop was expected to be 30-450 I.D. per ton and that of tomatoes to be 40-320 I.D. per ton. The average price of the whole season for both crops was estimated at 250 I.D. per ton.

The expected cucumber and tomato crops and their total revenues for the three alternatives are shown in the following tables:

Table A8.7

Expected Production and Revenues Through Seasonal Months

(First Alternative)

Months	Cucumbers			Tomatoes			Total of Revenues (I.D.)
	Production (ton)	Price Per ton (I.D.)	Value (I.D.)	Production (ton)	Price Per ton (I.D.)	Value (I.D.)	
Dec.	38	250	9500	-----	-----	-----	9500
Jan.	114	450	51300	38	180	6840	58140
Feb.	350	400	140000	175	260	45500	185500
Mar.	575	360	207000	274	290	79460	286460
Apr.	575	250	143750	274	320	87680	231430
May.	536	120	64320	151	180	27180	91500
Jun.	312	30	8360	88	40	3250	12880
Total	2500	250	625230	1000	250	250180	875410

Table A8.8

Expected Production and Revenues Through Seasonal Months

(Second Alternative)

Months	Cucumbers			Tomatoes			Total of Revenues (I.D.)
	Production (ton)	Price Per ton (I.D.)	Value (I.D.)	Production (ton)	Price Per ton (I.D.)	Value (I.D.)	
Dec.	76	250	19000	-----	-----	-----	19000
Jan.	190	450	85500	-----	-----	-----	85500
Feb.	550	400	220000	75	260	19500	239500
Mar.	850	360	306000	150	290	43500	349500
Apr.	850	250	212500	150	320	48000	260500
May.	797	120	95640	751	180	13500	109140
Jun.	437	30	13110	50	40	2000	15110
Total	3750	253	625230	500	253	126500	1078250

Table A8.9

Expected Production and Revenues Through Seasonal Months

(Third Alternative)

Months	Cucumbers Only		
	Production (ton)	Price Per ton (I.D.)	Value (I.D.)
Dec.	76	250	19000
Jan.	190	450	85500
Feb.	550	400	220000
Mar.	850	360	306000
Apr.	850	250	212500
May.	797	120	95640
Jun.	437	30	13110
Total	3750	253	625230

Part Two

The Project Appraisal for a Location Outside Al-Rashdiya District

2.1 Chapter One: Financial appraisal.

The evaluators used three financial indicators in the financial appraisal of the project. These were:

1. Expected costs.
2. Expected annual revenues of each alternative.
3. Expected annual profits or losses.

Expected Costs, Revenues and Profits.

- Establishment costs: These costs were estimated at 5,281,000 I.D. (see table A8.6) which was assumed to be fixed for any site outside the Al-Rashdiya district.
- Annual fixed expenses: These expenses are inclusive of the depreciation of the greenhouses, buildings, machinery, vehicles, and the materials used for improving the soil characteristics, plus the cost of manpower and interest charges on fixed assets as shown in the following table, in which the operating cost of each alternative is calculated by adding the variable cost of the alternative to the annual fixed expenses.

Table A8.10

Estimate of Annual Fixed Expenses

Items	The expected annual costs I.D.	Percentage to total
Depreciation of buildings including the greenhouses.	196 500	29.6
Depreciation of Vehicles,machinery and others.	24 225	4.4
Depreciation of soil improvement materials	13 300	2.0
Cost of Manpower	165 540	24.1
Interest Charges on fixed assets (5% of establishment costs)	264 000	39.9
Total	663 565	100%

The variable costs included costs of seeds, fertilizers, poisons, maintenance, fuel, oil and interest charge on working capital. The calculation of total costs, the expected revenues and annual profits for the three alternatives are shown in the following tables :

Table A8.11

Estimate of Annual Costs for the First Alternative

Items	Annual Cost I.D.	Grand Total I.D.
A. Fixed Costs (table A8.10)	663565	663565
B. Variable Costs (table A8.2)		
Seed cost	21 000	
Fertilizer cost	12 210	
Poisons cost	16 210	
Other requirements cost	8 740	
Fuel, oil, and maintenance costs.	50 850	
Interest charged on working capital (5%)	5 450	114 450
C. Total Costs		778 025
D. Total of annual revenue (table A8.7)		875 410
E. Economic Profit (D-C)		97 385
F. Normal Profit (Interest charge on fixed assets + Interest charge on working capital).		269 450
Total of annual profits		366 835

Table A8.12

Estimate of Annual Costs for the Second Alternative

Items	Annual Cost I.D.	Grand Total I.D.
A. Fixed Costs (table A8.10)	663565	663565
B. Variable Costs (table A8.2)		
Seed cost	29 250	
Fertilizer cost	13 635	
Poisons cost	16 655	
Other requirements cost	8 740	
Fuel, oil, and maintenance costs.	56 990	
Interest charged on working capital (5%)	6 265	131 535
C. Total Costs		795 100
D. Total of annual revenue (table A8.8)		1078 250
E. Economic Profit (D-C)		283 150
F. Normal Profit (Interest charge on fixed assets + Interest charge on working capital).		270 265
Total of annual profits		553 415

Table A8.13

Estimation of Annual Costs for the Third Alternative

Items	Annual Cost I.D.	Grand Total I.D.
A. Fixed Costs (table A8.10)	663565	663565
B. Variable Costs (table A8.2)		
Seed cost	37 500	
Fertilizer cost	15 075	
Poisons cost	17 110	
Other requirements cost	8 740	
Fuel, oil, and maintenance costs.	63 000	
Interest charged on working capital (5%)	7 070	148 495
C. Total Costs		812 060
D. Total of annual revenue (table A8.9)		1250 460
E. Economic Profit (D-C)		438 400
F. Normal Profit (Interest charge on fixed assets + Interest charge on working capital).		271 070
Total of annual profits		709 470

On the basis of the results obtained from the previous tables, the evaluators argued that the project was financially profitable. Moreover, they argued that since the project would exist on a social benefit basis, it could, therefore, dispense with economic profit. As a consequence, the average price of cucumbers and tomatoes could be reduced to a level which would provide only normal profit. Accordingly, it was possible to reduce the sale prices of the crop from 250 I.D. per ton to 222 I.D. per ton for the first alternative, 187 I.D. per ton for the second alternative and 162 I.D. per ton for the third alternative.

2.2 Chapter Two: Economic Appraisal.

In this chapter an attempt was made to calculate some economic indicators to determined whether or not the project was economically feasible. These indicators were as follows:

1. The payback period: According to the economic profits which were calculated in the previous tables, the payback period was estimated at 6-9 years depending on the crop components of the alternatives. The main goal of this indicator is to reveal the recovery period of the establishment costs (5,281,000 I.D.). These periods were calculated for each alternative according to the following equations:

A - Payback period for the first alternative:

planted area = 50 donum cucumbers + 50 donum tomatoes.

Total expected revenue = 875 000 I.D.

Total Costs = 275 000 I.D.

Annual Cash Accumulated= 600 000 I.D.

Payback Period = 5,281,000/600,000 = 9 years.

B - Payback Period for the second alternative:

Planted area = 75 donum cucumbers + 25 donum tomatoes.

Total expected revenue = 1078 000 I.D.

Total Costs = 298 000 I.D.

Annual Cash Accumulated= 780 000 I.D.

Payback Period = 5,281,000/780,000 = 7 years

C - Payback Period for the third alternative:

Planted area = 100 donum cucumbers

Total expected revenue = 1,250,000 I.D.

Total Costs = 310,000 I.D.

Annual Cash Accumulated= 940,000 I.D.

Payback Period = 5,281,000/940,000 = 6 years

2. Value added: The evaluators considered value added as one of the economic indicators which might justified the project. This was calculated according to the following equations:

Aggregate value added = value of outputs-value of inputs (the production requirements).

Net value added = aggregate value added - depreciations.

These equations are translated to figures as shown in table 8.14.

3. The productivity of one I.D. invested:

This is obtained by relating annual revenue to total costs (except interest on capital):

$$\text{First Alternative} = \frac{875410}{508575} = 1{,}221 \text{ I.D.}$$

$$\text{Second Alternative} = \frac{1078250}{524835} = 2{,}054 \text{ I.D.}$$

$$\text{Third Alternative} = \frac{1250460}{540990} = 2{,}310 \text{ I.D.}$$

4. Productivity of Manpower:

The evaluators argued that the annual average cost of a worker is 512 I.D. From another standpoint, they argued that the productivity of a person is much more than that figure. This productivity is obtained by dividing the expected annual revenue of each alternative by the number of workers employed. Thus the productivity of manpower for the first alternative would be 2710 I.D. per person, for the second alternative it would be 3330 I.D. per person and for the third one it would be 3870 I.D. per

person.

5. Average return on fixed capital invested: This was obtained by dividing annual revenue by the total value of fixed assets. The first alternative would be 16.5%, the second alternative would be 20.4% and the third alternative would be 23.6% as shown in table A8.14.

Table A8.14

Economic Indicators for the Three Alternatives

Indicator	First	Second	Third
Fixed Annual Costs	663565	663565	663565
Variable Annual Costs	114460	131535	148495
Total Annual Costs	778025	795100	812060
Annual Revenues	875410	1078250	1250460
Aggregate Value Added	766400	952980	1109035
Net Value Added	532375	718955	875010
Economic Profits	97385	283150	438400
Normal Profits	269450	270265	271070
Total Profits	366835	553415	709470
Annual Cash Accumulated	600860	787440	943495
Average Return on Fixed Capital Invested	16.5%	20.4%	23.6%
Average Return on Fixed and Working Capital Invested	15.7%	19.3%	22.4%
Productivity of Manpower	2710	3338	3871
Productivity of One I.D. Invested	1.721	2.054	2.310
Payback Period	9	7	6

Comparison between the alternatives in accordance with the above indicators yields useful guidelines for the decision-maker. The following table (A8.15) compares the three alternatives:

Table A8.15

Comparison Among the Three Alternatives

Indicator	First Alternative I.D.	Second Alternative I.D.	Third Alternative I.D.
Cost of production pre-requisites	109010	125270	141425
Depreciation	234025	234025	234025
Cost of Manpower	165540	165540	165540
Interest Charge on Capital	269450	270265	271070
Total Annual Operating Costs	778025	795100	812060
Total Annual Revenues	875410	1078250	1250460
Aggregate Value Added	766400	952980	1109035
Net Value Added	532375	718955	875010
Economic Profit	97385	283150	438400
Normal Profit	269450	270265	271070
Total Profits	366835	553415	709470
Annual Cash Accumulated	600860	787440	943495
Establishment Costs	5281175	5281175	5281175
Productivity of One I.D. Invested	1.721	2.054	2.310
Cost of Planting One Donum	7780	7951	8120
Revenue of One Donum	8754	10782	12504
Economic Profit of One Donum	974	2831	4384
Total Profits of One Donum	3668	5534	7094
Cost to Produce a Ton of Crop	222	187	162
Revenue of One Ton of Crop	250	250	250
Economic Profit of One Ton of Crop	28	66	88
Total Profit of One Ton of Crop	105	130	142
Average return on fixed capital	16.5%	20.4%	23.6%
Average return on fixed and working capital invested	15.7%	19.3%	22.4%
Payback Period	9	7	6

Part Three

Project Appraisal in the Event of Location in Al-Rashdiya District

3.1 Chapter One: Costs estimate.

Choosing Al-Rashdiya district as a location for the project meant that it would be considered as an extension to the previous project (the Bulgarian one). This would undoubtedly affect establishment costs, manpower costs, transportation costs, vehicle and agricultural implements costs, machinery costs, etc. These alterations in costs are shown in the following tables:

Table A8.16

Establishment Costs of the Project in Al-Rashdiya District

Items	Cost I.D.	Total I.D.
1. The Foreign Company Greenhouses, heating boilers machines and supervision.		3,310,000
2. Al-Khalis Agricultural Admin. Land preparation, the foundations, civil engineering works, electrical power.	1,000,000	
Improvement of soil content:-		
River Soil	37,500	
Petmosit } they decided to	-----	
Hay } dispense with these	-----	
} in this location		
Vehicles & Agricultural Implements.	95,200	
		1,132,700
Total		4,442,700

Manpower Costs: The evaluators argued that almost 35000 I.D. in manpower costs could be saved if it was decided to establish the project in Al-Rashdiya. Moreover, they argued that the available experience and skill of the manpower in the main project could be exploited. The following table represents the manpower required and their annual cost.

Table A8.17

The Manpower Costs of the Project in Al-Rashdiya District

Classification	Monthly Salary I.D.	No. Required I.D.	Yearly Salary I.D.
Agricultural Engineers	80	3	2880
Agricultural Supervisors	70	16	13440
Administration Officer	75	1	900
Typist	50	1	600
Electrical Labour	70	2	1680
Boilers Labour	70	2	1680
Drivers	60	9	6480
Unskilled Labour	35	5	2100
Agricultural Labour	35	240	100800
Total Manpower		279	130560

3.2 Chapter Two: Financial Appraisal.

The previous chapter discussed the project's establishment costs which were considered as a fixed cost whichever production alternative was being applied. This chapter deals with operating costs. The study argued that these costs are divided into fixed annual costs which include depreciation, cost of manpower and interest charges on fixed assets, and variable annual costs, which include seeds, fertilizer, poison, and interest charges on working capital.

The following table shows the expected annual costs and profits for the three alternatives.

Table A8.18
Expected Annual Costs and Profits for the Three Alternatives.

Items	Expected Annual Costs		
	First Alternative	Second Alternative	Third Alternative
Depreciation of Building including greenhouses	185500	185500	185500
Depreciation of Vehicles, Machinery, etc.	18000	18000	18000
Depreciation of soil improvement materials	1900	1900	1900
Cost of Manpower	131000	131000	131000
Interest Charges on Fixed Assets	222000	222000	222000
Total of annual fixed costs	558400	558400	558400
Seeds Costs	21000	29200	37500
Fertilizer Costs	12200	13600	15100
Poison Costs	16200	16700	17100
Other requirement costs	8700	8700	8700
Fuel, oil, and maintenance costs.	50900	57000	63000
Interest Charges on Working Capital.	5400	6300	7100
Total of annual variable Costs.	114400	131500	148500
Total Costs	672800	689900	706900
Total Annual Revenues	875400	1078200	1250400
Economic Profit	202600	388300	543500
Normal Profit	227400	228300	229100
Total Profits	430000	616600	772600

Profit Analysis of the Three Alternatives:

On the basis of the above table, the evaluators concluded that the third alternative was more profitable than the others. Its total profit was 772600 I.D. which was an increase of about 342000 I.D. from the first alternative and about 156000 I.D. from the second alternative. Economic profits are of considerable importance in this regard , being the cause of the profit divergencies among the alternatives. It was mentioned before that these profits may be considered as abnormal profits for socialist economies like Iraq. Therefore, to obtain merely the normal profits, it would be possible to reduce the prices of the crop yielded from any alternative as follows:

First Alternative:

The expected price per ton of crop	250	I.D.
The expected production	3500	Ton.
Economic profit	202600	I.D.

$$\text{Possible reduction in price} = \frac{202600}{3500} = 58 \text{ I.D./Ton}$$

Selling Price would be = 250 - 58 = 192 I.D./Ton

Second Alternative:

The expected price per ton of crop	250	I.D.
The expected production	4250	Ton.
Economic Profit	388300	I.D.

$$\text{Possible reduction in price} = \frac{388300}{4250} = 91 \text{ I.D./ton.}$$

Selling price would be = 250 - 91 = 159 I.D./ton.

Third Alternative:

The expected price per ton of crop	250 I.D.
The expected production	5000 Ton.
Economic Profit	543500 I.D.

$$\text{Possible reduction in price} = \frac{543500}{5000} = 108 \text{ I.D./ton.}$$

Selling price would be 250 - 108 = 142 I.D./ton.

3.3 Chapter Three: Economic Appraisal

In this chapter the evaluators resorted to the same economic indicators which were used in chapter two of part two of the study. The main objective of the appraisal is to conclude whether or not an alteration in the project's site would give more benefits than previously. The economic indicators were as follows:

The Payback Period: In order to recover the establishment cost which was estimated at 4,443,000 I.D., the payback period was calculated to be 5-7 years depending on the crop components. The profits which were expected to accrue from the alternatives were estimated at 635000 I.D. for the first alternative, 822 000 I.D. for the second alternative and 978 000 I.D. for the third alternative. These figures were considered to be fixed in future years. Table A8.19 shows the calculation of the payback period for the three alternatives.

Table A8.19

The Payback Period of the Three Alternatives

Year	Cash Accumulated		
	First Alternative I.D.	Second Alternative I.D.	Third Alternative I.D.
First	635 000	822 000	978 000
Second	1270 000	1644 000	1956 000
Third	1905 000	2466 000	2934 000
Fourth	2540 000	3288 000	3912 000
Fifth	3175 000	4110 000	4890 000
Sixth	3810 000	4932 000	
Seventh	4445 000		

The other economic indicators used in appraising the project were net and aggregate value added, annual cash accumulated, average return on fixed capital invested, average return on fixed and working capital invested, productivity of manpower and productivity of one I.D. invested. Table A8.20 shows the figures of these indicators for the three alternatives.

Table A8.20

The Economic Indicators of the Three Alternatives

Indicator	First	Second	Third
Fixed Annual Costs	558 400	558 400	558 400
Variable Annual Costs	114 400	131 500	148 500
Total Annual Costs	672 800	689 900	706 900
Annual Revenue	875 400	1078 200	1250 400
Aggregate Value Added	766 400	953 000	1109 000
Net Value Added	561 000	747 600	903 600
Economic Profit	202 600	388 300	543 500
Normal Profit	227 400	228 300	229 100
Total Profit	430 000	616 600	772 600
Annual Cash Accumulation	635 400	822 000	978 000
Average Return on Fixed Capital Invested	19.7%	24.2	28.1%
Average Return on Fixed and Working Capital Invested	18.7%	22.9%	26.5%
Productivity of Manpower	3137	3864	4482
Productivity of one I.D. Invested	1.965	2.335	2.617
Payback Period	7	6	5

The above economic indicators were used to make the final comparison among the three alternatives and to decide whether or not the project should be located in Al-Rashdiya district as an extension to the Bulgarian project. The following table shows this comparison.

Table A8.21

Comparison Among the Three Alternatives

Indicator	First Alternative I.D.	Second Alternative I.D.	Third Alternative I.D.
Cost of Production Requirements	109 000	125 200	141 400
Depreciation	205 400	205 400	205 400
Cost of Manpower	131 000	131 000	131 000
Interest Charges on Capital	227 400	228 300	229 100
Total of Annual Operating Costs	672 800	689 900	706 900
Total of Annual Revenue	875 400	1078 200	1250 400
Aggregate Value Added	766 400	953 000	1109 000
Net Value Added	561 000	747 600	903 600
Economic Value	202 600	388 300	543 500
Normal Profit	227 400	228 300	229 100
Total Annual Profit	430 000	616 600	772 600
Establishment Costs	4443 000	4443 000	4443 000
Annual Cash Accumulated	635 400	822 000	978 000
Productivity of One I.D. Invested	1,965	2,335	2,617
Average Return on Fixed Capital	19.7%	24.2%	28.1%
Average Return on Fixed and Working Capital Invested	18.7%	22.9%	26.5%
Cost of Planted Donum	6 728	6 900	7 069
Revenue of a Donum	8 745	10 782	12 504
Economic Profit of a Donum	2 026	3 882	5 435
Total Profit of a Donum	4 300	6 166	7 726
Cost of Produce of a ton of Crop	192	162	141
Revenue of a Ton of Crop	250	250	250
Economic Profit of a Ton of Crop	57	92	109
Total Profit of a Ton of Crop	122	145	154
Payback Period	7	6	5

Part Four

Conclusions and Recommendations

In conclusion, the study argues that, on the basis of the results of the financial and economic appraisals, there are two main justifications for the acceptance of the project. These are:

A - Social Justification. This includes the following: view points

1. The project's contribution in meeting the high demand for vegetables during the winter season.
2. Its contribution to the agricultural development of the nation.
3. It supports manpower in Al-Rashdiya district.
4. It contributes to an improvement in relations between the peasants in a rural area and the state farms.

B - Economic Justification. The evaluators argued that the project is feasible and profitable for the following reasons:

1. It has a satisfactory payback period, namely 5-7 years if the project were to be set up in Al-Rashdiya or 6-9 years if it were set up in any other location.
2. It produces satisfactory annual revenues and profits relative to its annual operating costs.

3. Increase in productivity per I.D. invested is expected to be 1.965-2.617 in Al-Rashdiya location and 1.720-2.310 in any other location.
4. Increase in the manpower productivity which is expected to be 3137-4482 I.D./Labour in Al-Rashdiya and 2710- 3870 I.D./Labour in any other location.
5. It realises a high return on fixed capital. This return is calculated at 19.7%-28.1% in Al-Rashdiya and 16.5% -23.6% in any other location.
6. It produces a satisfactory net value added which is expected to be 903 000- 561 000 I.D. in Al-Rashdiya and 532 000 -875 000 I.D. in any other location.
7. It achieves high economic efficiency per donum. The total profits per donum are calculated at about 43000-77000 I.D. in Al-Rashdiya and 36000-71000 I.D. in any other location.
8. It achieves high economic efficiency in production per ton of crop. It yields a total profit of about 45-154 I.D. in Al-Rashdiya and 35-143 I.D. in any other location.

The Committee's Recommendations.

1. They recommended the location of the project in Al-Rashdiya as an extension to the main project.
2. Choice of an optimal alternative depends on many factors such as the agricultural policy of the nation, trend in demand, and prices policy. Since these factors are not constant, it could not recommend an optimal alternative.
3. Further research should be carried out for the domestic market to organise the marketing of production.
4. More attention should be given to training of manpower for the project's development.
5. Consideration should be given to the possibility of planting flowers in the greenhouses alongside the vegetables to project the crop from disease.
6. Research should be carried out to study whether the greenhouses could be produced domestically rather than imported from a foreign country.
7. Agricultural research for the development of the project should be supported.
8. Scientific research directed towards substitutes for the greenhouses, such as

plastic houses, should be encouraged.

9. Finally, they recommended that the State Organization of Fruit and Vegetable Marketing should be responsible for selling the crop in order to concentrate the project on the production process only.

Appendix 8.2

Summary of the Manual on Project Appraisal in the Iraqi Public Sectors

The manual on project appraisal was issued by Ministry of Planning on 1975 as a guide to the appraisal committees of public sector projects. The following steps, though not compulsory, are recommended in the appraisal of a public project.

1. Project Identification: This contains a description of the following items which should be derived from the project selection report, purpose of the project, production to be product, capacity, location, production process, inputs items, capital, and the economic conditions.
2. Objectives of appraisal: The objectives of the project should be specified and examined to see whether they are consistent with the national objectives. The appraisal process, then, would be spelled out accordingly.
3. Techniques of appraisal: This deals with the determination of the ways in which the required analysis should be made in order to meet the above objective.

Source: Ministry of planning, "Manual on project appraisal - outline of the case-studies", Baghdad, 1975 (In Arabic).

4. Project Appraisal: This part has been divided into six sections as follows:

I - Data required: Past, present, and future data should be gathered regarding both financial and economic aspects of the project in question. Some other data should be estimated if they are not available. All of them should be classified and tabulated.

II - Financial profitability analysis: This analysis should be made according to the common mathematical formulas in order to achieve the results of the following financial indicators. These indicators will reflect the estimated financial condition of the project:

A - Rate of Return.

B - Pay Back Period.

C - Net Present Value.

D - Internal Rate of Return.

III- Social profitability analysis for tangible items: This analysis ought to be calculated in the following manner.

A - Value Added.

B - Foreign Exchange Benefits.

C - Employment Benefits.

D - Income Distribution.

E - Utilized Capacity Benefits.

All the above benefits require some explanations and descriptions.

IV - Social profitability analysis for intangible items: This analysis is theoretically based and the results obtained from the following items should be justified.

A - Technological Development.

B - Environmental Implications.

C - Economic Linkage in the country and internationally.

D - Capability Build-Up.

E - Others, if any.

V - Risk and uncertainty analysis: Risky and uncertain conditions which may confront the project in the future should be taken into account in this analysis. The figures which emerge from this analysis should be considered in the project decision making.

VI - Conclusions: In this section the appraisers have to point out clearly their conclusions and recommendations supported by figures. Their report must be submitted to the decision making authority for approval.

Project selection analysis when there are many alternatives available: Any proposed project should be analysed accordance with the above instructions of which the results should be compared with other opportunities available as shown in the following table:

Table A8.2.1

Comparison Between Alternatives

Indicators	Alternatives		
	A	B	C
Financial Profitability:			
A - Rate of Return.			
B - Pay - Back Rate.			
C - Net Present Value.			
D - Internal Rate of Return.			
Social Profitability:			
A - Value Added.			
B - Foreign Exchange Benefits.			
C - Employment Benefits.			
D - Income Distribution Benefits.			
E - Utilized Capacity Benefits.			
Risk and Uncertainty Analysis:			
A - ----------			
B - ----------			
C - ----------			

BIBLIOGRAPHY

Abdeen, A. "The role of Accounting in Project Evaluation and Control: The Syrian Experience" International Journal of Accounting, Vol. 15, No. 2, 1975.

Alhashim, D. "Social Accounting in Egypt" International Journal of Accounting, Vol. 12, No. 2, 1977.

Agrala, N. "Basic understandings in project evaluation", The Ministry of Planning, Baghdad, 1975, (in Arabic).

Ahmed, A. K. "Economic Evaluation of Vegetable Production in the Greenhouses Project, Al-Khalis" College of Agriculture, Baghdad University, Baghdad, 1982 (in Arabic).

Al-Ahmady, M. "Economic Development and Planning", 3rd edition, Damascus 1969, (in Arabic).

Al-Azawi,A.K. "The Scientific and Practical Principles for Vegetable Production in a Greenhouse", Ministry of Agriculture, 1980 (in Arabic).

Al-Dahri,A.M. "A proposal Guide for Evaluation of Agricultural Projects". Supreme Agricultural Council, 1977, (in Arabic).

Al-Hadethi,J. "The Development of the Financial Control in Iraq", The Accountant Magazine, No. 2, Baghdad, 1980 (in Arabic).

Al-Hadethi,A.S. "The equity of the Agrarian Reform Law" Ministry of Agrarian Reform, Baghdad, 1965 (in Arabic).

Al-Jumaly,S. & Al-Araji,A. "Study of the follow-up system for implementation of the national development plans" Ministry of planning Baghdad, 1975 (in Arabic).

Al-Mostawfi, S. & Al-Hayali,A. "The Uniform Accounting System and bookkeeping treatment", Dar Al-Zamman Press, Baghdad, 1978, (in Arabic).

Al-Saffar,H.R. "Contributing to National Development in the Middle East" Management Accounting, Vol. 62, No. 9, Oct. 1984.

Al-Selkeni,A.B. "The Feasibility Study of the Greenhouses Project and its Proposed Extension". Al-Khalis Agricultural Administration, 1976 (in Arabic).

Al-Shaybi,A.E. "The implication of Agricultural Accounting in the State Farms in Al-Khalis". College of Administration and Economics, Baghdad University, 1974 (in Arabic).

Alvarez, A.P. "The role of internal audit in policy and decision-making" The Internal Auditor Institution, U.K. 1973.

Alwan, A.S., "Studies in Agrarian Reform" Alani Press, Baghdad, 1961 (in Arabic).

Ameen, S. M. "The Financial Control and Board of Supreme Audit", Baghdad, 1979, (in Arabic).

Amey, L.R. "The Efficiency of Business Enterprises" George Allen and Unwin Ltd. London, 1969.

Amey, L.R., & Eggington, D.A. "Management Accounting, A Conceptual Approach". Longman Group Limited, London, 1973

Anthony, R.N. "Management Accounting Principles". Richard D. Irwin, Inc., Illinois, 1965.

Anthony,R.N. & Herzlinger,R. "Management Control in non-profit organization" Irwin, Illinois, 1980.

Anthony,R.N. & Reece,J.S. "Accounting, text and cases". Richard D. Irwin, Inc., Illinois, 1983.

Anthony,R.N. & Hekimian,J.S. "Operations Cost Control". Richard D. Irwin, Inc., Illinois, 1967.

Argenti,J. "Whatever happened to management techniques?" Management Today, April, 1976.

Arkadie,B.V. & Frank,C. "Economic-Accounting and Development Planning" Oxford University Press, 1966.

Arnold,J. & Hope,T. "Accounting for Management Decisions" Prentice Hall International, London, 1983.

Arrow,K.J. & Lind,R. "Uncertainty and the evaluation of public investment decisions". American Economic Review, Vol. 60, 1970.

Backer, M. and Jacobsen, L. "Cost Accounting, A Managerial Approach" McGraw-Hill Co. New York, 1964.

Barrett,D. "The jargon of public expenditure" Public Finance and Accountancy, June, 1981.

Bashir,B. "Spotlights on some important aspects in Iraq's Agriculture" Baghdad, 1973 (in Arabic).

Belkaoui,A. "Socio-Economic Accounting" Quorum Book Publisher, London, 1984.

Berry,M. H. "The accounting function in socialist economies" International Journal of Accounting, Vol. 18, No. 1, 1982.

Beyer,R. "Profitability Accounting for Planning and Control". The Roland Press Co., New York, 1963.

Bierman, H. and Dyckman, T. "Managerial cost Accounting" Macmillan Publishing Co., U.S.A. 1976.

Board of Supreme Audit, "The Uniform Accounting System", Al-dar Al-Arebia Le-Teba'a, Baghdad, 1985 (in Arabic).

Board of Supreme Audit, "Law No. 194 of 1980", Dar Al-Horiya, Baghdad, 1981, (in Arabic).

Boland,R.J. "Myth and technology in the American Accounting profession", Journal of Management Studies, Vol. 19, No.1, 1982.

Bos, D. "Public Enterprise Economies" North-Holland, Amsterdam, 1986.

Boulding,K.E. "Economic and Accounting: The Uncongental Twins" edited by Baxter, W. T. and Davidson, S. "Studies in Accounting Theory" Sweet and Maxwell Ltd., London, 1962.

Breakerman,W. "An introduction to national income analysis" Weidenfeld and Nicholson, London, 1968.

Brief,R.P. & Owen,J. "The role of the accountant in investment analysis". Financial Analyst Journal, Jan - Feb 1975.

Briston,R.J. "Introduction to accountancy and finance" Macmillan, London, 1981.

Briston,R.J. & El-Ashker, A. "The Egyptian Accounting System - A Case Study in Western

Influence" International Journal of accounting, Vol.20, No.1, Spring, 1985.

Briston,R.J. "The evolution of accounting in developing countries" International Journal of Accounting, Vol. 14, No. 1, 1978.

Briston,R.J. "Accounting that courted disaster" The Scotsman Newspaper, 26th, August, 1980.

Briston,R.J. "Where were the auditors when Court Line sank" The Scotsman Newspaper, 13th, September, 1980.

Briston,R.J. "Financial management in a developing country" working paper, University of Hull, 1986.

Bromwich,M. "The Economics of capital budgeting" Penguin Book Limited. London, 1976.

Burchell,S. ; Clubb, C.; & Hopwood,A.G. "Accounting in its social context, towards a history of value added in the U.K.". London Business School, February, 1981.

Central Committee of Follow-up, "Instructions for using the follow-up forms" Ministry of Planning, Baghdad, 1977 (in Arabic).

Coates,J. , Smith,J. & Stacey,R. "Results of a preliminary survey into the structure of Divisional Companies, Divisional

Performance appraisal and the associated role of management accounting" Management Accounting Research and Practice, Edited by Cooper, D. Scapens, R. and Arnold, J. (Institute of Cost and Management Accountants) 1983.

Corbett P., "Accounting and Decision Making" Longman Group Limited, Essex, 1977.

Darmanin,D. "Accounting and Economic Development Malta as a Case Study" paper presented at the British Accounting Association Annual Conference, University of Hull, April, 1985.

Dasgupta,A. & Pearce,D. "Cost-benefit analysis: theory and practice". Macmillan, London. 1978.

Dawood, M.S. "Vegetable Production of the Greenhouses Farm" Al-Khalis Agricultural Administration, Baghdad, 1978 (in Arabic).

Dawood, M.S. "The Proposal Plan of the Greenhouses Production for the Agricultural Season 80/81". Al-Khalis Agricultural Administration, Baghdad, 1980 (in Arabic).

Deniston,O.L. & Rosenstock,I.M. "Relaying Programme Evaluation to Planning", "Planning

Programming Budgeting, A Systems Approach to Management" Edited by Lyden, F.J. and Miller, E.G., Rand McNally College Publishing Co., Chicago, 1972.

Directorate of the Greenhouses Farm Project, "Proposed Five-year plan for the period of 1981-1985". Report No. 1007, June 1980, Baghdad (in Arabic).

Directorate of the Greenhouses Farm Project, "Proposal Plan for Vegetable Production in the Greenhouses for the Agricultural Season 1980/81". Baghdad, 1980 (in Arabic).

Directorate of the Greenhouses Farm Project, "Final report of the agricultural season 1980/81". Baghdad, 1981 (in Arabic).

Directorate of the Greenhouses Farm Project, "Greenhouses Farm Project in Al-Rashdiya, a pioneer experiment". Baghdad, 1981 (in Arabic).

Directorate of the Greenhouses Farm Project, "Proposal Plan for Vegetable Production in the greenhouses farm project for the agricultural season 1981.82, Baghdad, 1981 (in Arabic).

Directorate of the Greenhouses Farm Project, "Final Report of the Agricultural Season

1981/82", No. 939, August 1982, Baghdad (in Arabic).

Enthoven,A.J. "Accountancy and economic development policy" North Holland, Amsterdam, 1973.

Enthoven,A.J. "The Accountant's function in development". Finance and Development, Vol. II, No.4 1965.

Enthoven,A.J. "The Changing Role of Accountancy" Finance and Development, June, 1969.

Enthoven,A.J. "Accountancy System in Third World Economies" North-Holland Publishing Co. Amsterdam, 1977.

Enthoven,A.J. "Standardised Accountancy and Economic Development" Finance and Development, Vol. 10, No. 1. 1973a.

Enthoven,A.J. "Accountancy for Economic Development" Finance and Development, Vol. 6, No. 3. Sept. 1969a.

Esmiel,K.S. "Principal concepts and organizational framework for following up the economic plans" Journal of Economic and Administrative research, Baghdad, April 1981 (in Arabic).

Estes,R.W. "Socio-economic accounting and external diseconomies". The Accounting Review, April, 1972.

Fanning,D. "How slow are the auditors in Britain" The Accountancy, Vol. 89, No. 1020, 1978.

Flowerdew,A. "Choosing a site for the Third London Airport: the Roskill Commission's approach", "cost-benefit analysis" Edited by Layard, R., Penguin Book Limited. London, 1972.

Freear,J. "An historical perspective" , "Current Issues in Accountancy" Edited by Carberg, B. and Hope, T., Philip Allan, 1977.

Garner,S.P. "Historical development of cost accounting". Accounting Review, October, 1984.

Gittiner,J.P. "Economic Analysis of Agricultural Projects" The Johns Hopkins University Press, Baltimore, 1982.

Glendining,R. & Perk,R. "Performance indicators applied to the Nationalised Industries". Management Accounting, October, 1981.

Gordon,M.J. "Scope and method of theory and research in the measurement of income and wealth". Accounting Review, Vol. 35, No. 4, 1960.

Gramlich,E.M. "Benefit-cost Analysis of Government Programmes" Prentice-Hall, Inc., New

Jersey, 1981.

Hepworth,N. "The Finance of Local Government" George Allen and Unwin, 1984.

Hague,D.C. "Pricing in Business". Allen and Unwin, 1971.

Hashim,J. "Science, Technology and Industrial Development", The Economist Magazine, No. 2, April, Baghdad, 1974, (in Arabic).

Hashim,J. "Development Planning in Iraq, Historical Perspective and New Directions" The Ministry of Planning, Baghdad, April, 1975.

Hawkins,C.J. & Pearce,D.W. "Capital investment appraisal" Macmillan, London, 1971.

Hendriksen,E.S. "Accounting Theory". Richard, D. Irwin, Homewood, U.S.A., 1970.

Hicks,J.R. "The Social Framework, an introduction to economics". Oxford University Press, 1960.

Hilton,A. "Courting the Shareholders" Accountancy Age, 22nd, March, 1974.

H.M.S.O. "United Kingdom National Accounts" Central Statistical Office, Blue Book, 1985.

H.M.S.O. "A Guide to the Economic Appraisal of

Projects in Developing Countries" HMSO, London, 1977.

H.M.S.O. "National accounts statistics, sources and methods". Edited by Maurice, R. Central Statistical Office, London,1968.

Homadi,M.J. "Reality of the Accounting Systems in Iraq", Central Pricing Organization, Baghdad, 1980, (in Arabic).

Horngren,C.T. "Management Accounting: Where are we?" in "Management accounting and control" Madison, U.S.A., 1975.

Horngren,C.T. "Cost accounting, a managerial emphasis" Prentice Hall International, London, 1977.

Irvin, G. "Modern Cost-Benefit Methods, An Introduction to Financial, Economic and Social Appraisal of Development Projects". Macmillan, London, 1978.

Jablensky,S.F. & Dirsmith,M.W. "The Pattern of PPB Rejection: Something about PPBS" Organizations and Society, Vol. 3., No. 34, 1978.

Jackson,P. "Macroeconomic control of public spending". Public Finance and Accountancy, June, 1981.

Jaruga,A.A. "Problems of Uniform Accounting Principles in Poland" The International

Journal of Accounting, Vol. 8. No. 1. 1972.

Jones,R. & Pendlebury,M. "Public Sector Accounting" Pitman, London, 1984.

Kachachi,S. "Planning in Iraq" Ministry of Planning, Baghdad, 1976 (in Arabic).

Keane,S. "Required rate of return from investment: can we learn from the public sector?". Management Accounting, Vol. 57, No. 11, 1979.

Khaddure,M. "Socialist Iraq, A Study in Iraqi politics since 1968" The Middle East Institute, Washington, D. C., 1978.

King,J.A. "Economic Development Projects and Their Appraisal, Cases and Principles from the Experience of the World Bank". The Johns Hopkins Press, Baltimore, 1967.

Koutsoylannis,A. "Non-price decisions, the firm in modern context" Macmillan, London, 1982.

Lee,T. A. "Company Auditing". Gee and Co. Publishers, Second Edition, U.K. 1982.

Levy,H. & Sarnat,M. "Capital investment and financial decisions" Prentice Hall International, U.S.A., 1982.

Lewis,W.A. "Economic Development with unlimited

supplies of Labour" Manchester School of Economic and Social Studies Vol. 22, No. 11, 1954.

Likierman,A. "Meeting the challenge of the White Paper". Public Finance and Accountancy, June, 1979.

Linowes,D.F. "Socio-Economic Accounting" Journal of Accountancy, No.1, 1968.

Little,I. & Mirlees,J. "Project appraisal and planning for developing countries" Heinemann Educational Books, London, 1982.

Lumby,S.P. "Investment appraisal and related decisions" Thomas Nelson, 1984.

Marglin, S.A. "The Opportunity Costs of Public Investment" Quarterly Journal of Economics, Vol. 77, 1963.

Mattessich,R. "Accounting and analytical methods, a measurement and projection of income and wealth in the micro and macro economy". Scholars Book Co. Texas, 1964.

Mepham, M.J. "Opportunity cost and the Accountant" Management Accounting, Vol. 59, No. 5, May 1981.

Msa'ad,M.A. "The Main principle of the Uniform Accounting System in Iraq and Egypt" The Iraqi Journal of Economic and Administrative Research, Vol.8, No.2

April, 1980.

Middle East Yearbook, "Iraq, Social and Economic issues", published by IC Magazines Ltd., London, 1980.

Mills,R. "More effective use of NPV in investment appraisal". Management Accounting, Vol. 61, No. 2, Feb. 1983.

Ministry of Planning, "Manual on Project Appraisal-outline of the case studies" Baghdad, 1975 (in Arabic).

Ministry of Planning, "Progress under Planning", No. 5, Baghdad, 1975 (in Arabic).

Ministry of Planning, "National Development Plan 1976-1980", Dar Al-Jamiher, Baghdad, 1977, (in Arabic).

Ministry of Planning, "General Framework of the 1976-1980 National Development Plan, Baghdad, 1975, (in Arabic).

Ministry of Planning, Central Bureau of Statistics, "Statistical Abstract, 1961" Baghdad, 1962, (in Arabic).

Ministry of Planning, Central Bureau of Statistics, "Annual Abstract of Statistics 1976" Baghdad, 1977 (in Arabic).

Ministry of Planning, Central Bureau of Statistics, "Statistical Pocket Book 1977" Baghdad,

1978 (in Arabic).

Ministry of Planning, Central Bureau of Statistics, "Annual Abstract of Statistics 1982" Baghdad, 1983 (in Arabic).

Ministry of Planning, "Preliminary detailed framework of the 1970 - 74 Economic Development Plan" Baghdad, 1970 (in Arabic).

Ministry of Planning, Central Committee of Follow-up "Follow-up Forms, No. 1 & 2" Baghdad, 1977 (in Arabic).

Ministry of Oil, "Oil & Mineral Resources in Iraq" 2nd Annual Book, Baghdad, 1972.

Ministry of Industry, "Industrial progress in 10 years", Baghdad, 1978 (in Arabic).

Ministry of Information, "The Economy of Iraq, Development and Perspectives, published by Fareso, Madrid, Spain, Nov. 1977.

Ministry of Information, "The 1968 Revolution in Iraq, Experience and Prospects" Baghdad, 1979 (in Arabic).

Ministry of Information, "The Economy of Iraq, development and perspectives 1958 - 1976 - 1980." published by FARESO, Madrid, Spain, 1977.

Ministry of Agriculture, "Study of Manpower Situation in the Greenhouses Farm Project, Al-Khalis". Baghdad, Sept, 1978 (in

Arabic).

Ministry of Agriculture, Division of Planning and Follow-up, "Seasonal report on Agricultural Projects" September, Baghdad, 1983 (in Arabic).

Mirghani,A, M. "A Framework for Linkage between Microaccounting and Macroaccounting for purposes of Development Planning in Developing Countries" International Journal of Accounting, Vol. 18, No.1, 1982.

Mishan,E.J. "What is wrong with Roskill" Journal of Transport Economic and Policy, Vol. 4, No. 3, 1970.

Mishan,E.J. "Cost-benefit analysis - an informal introduction". George Allen and Unwin Limited, 1971.

Mohamed,M.S. "Economic Evaluation and Control of the Greenhouses Project in Al-Khalis". Economic and Administration College, Baghdad University, Baghdad 1981, (in Arabic).

Morgenstern,O. "On the accuracy of economic observations" Princeton University Press, 1963.

Most,K.S. "Accounting Theory" second Edition, Grid

Publishing Inc., Ohio, 1982.

Mueller,G.G. "International Accounting" Macmillan, New York, 1967.

Mulins,L. "Improving management control systems". Management Accounting, Vol. 61, No. 5, May, 1983.

Nash, C. Pearce, D. & Stanley, J. "An Evaluation of Cost-benefit Analysis Criteria" Scottish Journal of Political Economy, Vol. XXII, No. 2, June, 1975.

National Development Plan 1976-1980, Ministry of Planning, Baghdad,1977, (in Arabic).

National Centre for Consultancy and Management Development, "The Uniform Accounting System", Baghdad, 1983, (in Arabic).

National Centre for Consultancy and Management Development, "The Iraqi Uniform Accounting System" First Part, Baghdad,1981, (in Arabic).

Niblock,T. "Iraq: The Contemporary State" Groom Helm Limited, London, 1982.

Nobes,C.W. & Parker,R.H. "Comparative International Accounting". Philip Allan Publishers, 1981.

Parker,R.H. "Management accounting, an historical perspective, Macmillan, 1969.

Pearce,D. "Cost-benefit analysis" Macmillan,

London, 1971.

Peterson,A.W. "Planning, Programming and Budgeting Systems and Decision-making in Local Government" Proceeding of P.T.R.C. Seminar, Birkbeck College, May, 1969.

Pringle,G. "The early development of cost-benefit analysis" Journal of Agriculture Economics, Vol. XXIX, No. 29, 1978.

Pouliquen,L.Y. "Risk Analysis in Project Appraisal". International Bank for Reconstruction and Development, The John Hopkins Press, Baltimore, 1970.

Prest,A.R. & Turvey,R. "Cost-Benefit Analysis: A. Survey". Economic Journal, Vol.75, 1965.

Proxmir,S.W. "Planning, Programming and budgeting: the Agencies and the Congress", "Social accounting: theory issues and cases" Edited by Seidler and Seidler, Melville Publisher, U.S.A., 1975.

Radwan,A.A. "Accountancy of Enterprises in Socialist Sector, The Uniform Accounting System" Ministry of Higher Education and Scientific Research, Al-Mousel University, Iraq, 1977, (In Arabic).

Remanadham,V. "Public enterprise in Britain, thoughts on recent experiences". Frank Cass &

Co., London, 1959.

Ray,A. "Cost-Benefit Analysis, Issues and Methodologies" World Bank, The Johns Hopkins Press, Baltimore, 1984.

Razouki,H. "The Development of Government Accounting System and The Financial Administration in Iraq". The Accountant Magazine, No.2, Baghdad, 1980, (in Arabic).

Revolution and Development Magazine, Ministry of Information "Agricultural Sector" No.2, Baghdad, 1980.

Ripman,H.B. "Project Appraisal" Finance and Development Vol. I., No.3, December 1984.

Rogers,M. "Accounting Development in Local Government". Management Accounting, March, 1984.

Sa'eed,J.M. "Economical Study for the Cost and Revenue Expected from a Cultivated Donum in Winter Season". College of Agriculture, Baghdad University, Baghdad, 1978.

Salih,S.T. "The Uniform Accounting System for Agricultural Administration". Economic and Administration College, Baghdad University, Baghdad, 1978 (in Arabic).

Salmonson,R. "Basic Financial Accounting Theory", Wadsworth Publishing Co., Inc., California, 1969.

Samarrie,S.A. "Agricultural Planning in Iraq, A Study on Agricultural Development, Its Problems and Solutions". Al-Omma Press, Baghdad, 1980, (in Arabic).

Scapens,R.W. "Management Accounting, a review of contemporary development". Macmillan, 1985.

Scapens,R.W. "Commentary on: quantitative aspects of management accounting". Essays in British Accounting Research, Edited by Bromwich, M. and Hopwood, A. Pitman, 1981.

Scapens,R.W. , Gameil,M.Y. & Cooper,D.J. "Accounting information for pricing decisions", "Management Accounting Research and Practice", Edited by Cooper,D. J., Scapens,R.W. and Arnold, J. A. (Institute of Cost and Management Accounts) 1983.

Schneider,H. "National Objectives and Project Appraisal in Developing Countries" Development Centre of the Organisation for Economic Co-operation and

Development. Paris, 1975.

Scott,G.M. "Accounting and Developing Nations", International Accounting Studies Institute, Washington, 1970.

Seen,A.K. "On optimizing the rate of saving" Economic Journal, Sep. 1961.

Seidler,L. "Nationalism and International Transfer of Accounting Skills", International Journal of Accounting Vol. 5, No. 1. Fall, 1969.

Sen,S.R. "The Strategy for Agricultural Development and other Essays on Economic Policy and Planning". Asia Publishing House, London, 1962.

Shammem,A. & Al-Waeth,A. "Follow-up report on the fulfilment of economic plans in Iraq between 1951 - 74" Ministry of Planning, Baghdad, 1974 (in Arabic).

Sherer,M. & Southworth,A. "Accounting and Accountability in the Nationalised Industries", "Current Issues in accounting" Edited by Carsberg, B. and Hope, T. Philip Allan, 1984.

Shillinglaw,G. "Old horizons and new frontiers: the future of managerial accounting" In "Management Accounting" proceedings of the University of Illinois, Edited by

Holzer, P. 1980.

Shillinglaw,G. "Cost Accounting Analysis and Control," Richard D. & Irwin Inc., Homewood, Illinois, 1972.

Sizer,J. "Developing Quantitative and Financial performance indicators in non-profit organisations". Management Accounting, March, 1979.

Sizer,J. "The Accountant's contribution to the pricing decision". Journal of Management Studies, May, 1966.

Sizer,J. "Perspectives in management accounting". Heinemann, 1981.

Singer,H.W. "Standardised Accountancy in Germany" Cambridge University Press, 1943.

Solomons,D. "Studies in Costing". Sweet and Maxwell, London, 1952.

Squire,L. & Van Der Tak, G.H. "Economic Analysis of Projects" The John Hopkins University Press, Baltimore, 1975.

Stone,R. & Stone,G. "National income and expenditure". Bowes and Bowes, London, 1961.

Supreme Agricultural Council, "Development of Agricultural Planning Stages, their implementation and indicators " Baghdad, 1977 (in Arabic).

Supreme Agricultural Council "The Feasibility Study of the Greenhouses Farm Project " Baghdad, May, 1978.

Supreme Agricultural Council, "Development of the State Farms in Iraq" Al-Watanyh Press, Baghdad, 1978 (in Arabic).

Supreme Committee of the Uniform Accounting System, "The Uniform Accounting System". National Centre for Consultants and Administration, Baghdad, 1981, (in Arabic).

Taylor,A. & Shearing,H. "Financial and Cost accounting for management". Macdonald and Evans, seventh edition, 1979.

The World Bank, "World Development Report", The International Bank for Reconstruction and Development, Washington, 1979.

Thomas,L. & Heath,K.B. "The Treasury". Putnam's Sons, London, 1927.

Tomkins,C. "Financial Control in Local Authorities". Research Issues, The Accountant, Iraqi Journal, No. 2, June 1980.

Townsend,J. "Industrial Development and the Decision Making Process", Croom Helm, London, 1982.

Underdown,B. & Taylor,P.J. "Accounting theory and

policy making". Heinemann, London, 1985.

United Nations, Bureau of Technical Assistance Operations, "Report of the Interregional Symposium on Industrial Project Evaluation" New York, 1966.

United Nations, "A Manual for Programme and Performance Budgeting" New York, 1965.

University of Baghdad, "Evaluative Study and Productivity Plan for Al-Nai State Farm" The University Press, Baghdad, 1979 (in Arabic).

University of Mousel, "Technical and Economic Study of the Al-Hawega Farm Project" The University Press, Mousel City, Iraq, 1978 (in Arabic).

Van Horne, J. "Financial management and policy" Prentice-Hall International, London, 1980.

Whittington,G. "Accounting and economics", "Current issue in accounting" Edited by Carsberg, B. and Hope, T. Philip Allan, 1984.

Wildavsky,A. "Budgeting a comparative theory of budgetary processes". Little, Brown and Company, Boston, 1975.

Wildavsky,A. "The Politics of the budgetary process".

Little, Brown and Company, Boston, 1964.

Wilkes,F.M. "Inflation and Capital Budgeting Decisions" Journal of Business Finance, Autumn, 1972.

Woolf,A.H. "A short history of accountants and accountancy". Gee and Co. London, 1912.

Yamey,B.S. "Accounting and the rise of capitalism; further notes on a theme by Sombart". Journal of Accounting Research, No.II, 1964.

Yas,K.S. "Economic Evaluation for Al-Khalis Agricultural Administration Projects" College of Administration and Economics, Baghdad University, Baghdad, 1979, (in Arabic).

Yu,S.C. "Macroaccounting and Some of Its Basic Problems" The Accounting Review, April, 1957.

Yu,S.C. "Microaccounting and Macroaccounting" The Accounting Review, Vol. XLI, No. 16, Jan, 1966.

Zeff,A.S. "Forging accounting principles in five countries: a history and an analysis of trends". Stripes Publishing Co. U.S.A., 1972.