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STUDY ON RURAL DEVELOPMENT IN BARBADOS

James Nurse

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James Nurse

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Bridgetown, Barbados

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RURAL DEVELOPMENT IN BARBADOS

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ABBREVIATIONS AND ACRONYMS

ACTCO	=	Agricultural Commodity Trading Company
ACTO	=	Agricultural Commodity Trading Company
AHOP	=	Agricultural Holdings Option to Purchase Act
AVT	=	Agriculture Venture Trust
BADC	=	Barbados Agricultural Development Corporation
BARNACS	=	Barbados National Association of Cooperative Societies
BAS	=	Barbados Agricultural Society
BASIS	=	Barbados Agricultural Statistical Information Service
BDB	=	Barbados Development Bank
BIMAP	=	Barbados Institute of Management and Productivity
BMC	=	Barbados Marketing Corporation
BNB	=	Barbados National Bank
BSIL	=	Barbados Sugar Industry Limited
BWA	=	Barbados Water Authority
CARDI	=	Caribbean Agricultural Research and Development Institute
CATCO	=	Caribbean Agricultural Trading Company
CDB	=	Caribbean Development Bank
CFC	=	Caribbean Food Corporation
CIDA	=	Canadian International Development Agency
CPMU	=	Central Management Project Unit
EDF	=	European Development Fund
EPU	=	Export Packaging Unit
FAO	=	Food and Agricultural Organization of the United Nations
FDU	=	Fruit Development Unit
GDP	=	Gross Domestic Product
HCF	=	Housing Credit Fund
HIAMP	=	High Impact Agricultural Marketing Project
IBRD	=	International Bank for Reconstruction and Development
IDB	=	Inter-American Development Bank
IICA	=	Inter-American Institute for Cooperation on Agriculture
IMF	=	International Monetary Fund
IRDP	=	Integrated Rural Development Project
MAFCA	=	Ministry of Agriculture, Food and Consumer Affairs
MAFF	=	Ministry of Agriculture, Food and Fisheries
MGD	=	Million of Gallons Per Day
NDFB	=	National Development Foundation of Barbados
NFOP	=	National Fruit Orchard Project
NGO	=	Non-Governmental Organization
OAS	=	Organization of American States
PEU	=	Project Execution Unit



RDIF	=	Rural Development Investment Fund
RDP	=	Rural Development Project
SCU	=	Soil Conservation Unit
SFMP	=	Small Farmers Marketing Project
SHLLP	=	Spring Hall Land Lease Project
TFHP	=	Tenantry Freehold Purchase Act
UNDP	=	United Nations Development Programme
USAID	=	United States Agency for International Development
WAND	=	Women and Development
WID	=	Women in Development

Currency Equivalent

US\$1.00	=	Bds\$2.00
US\$0.50	=	Bds\$1.00

Dollars (\$) means Barbados currency except where specified



PREFACE

Barbados differs from many countries in the region because of the lack of clear boundaries between what is urban and what is rural. Never-the-less, a significant portion of the population is directly or indirectly employed in agriculture and related enterprises. The many constraints to improving agricultural production have been well documented and a number of attempts have been made to get the "rural" sector moving. Unfortunately, only limited success has been achieved to date and the need for greater efficiency continues to constrain crop and livestock development.

The recognition of the important role played by small farmers in the development process is gathering momentum. Governments throughout the region, as well as regional and international support organizations, appreciate that small farmers cannot be effective producers without having access to important services such as marketing, farm inputs, credit and technical assistance to develop managerial capabilities. Likewise, the conclusion is being reached that more effort needs to be oriented towards strengthening of rural organizations as these services are all much more effective when farmers and their organizations are actively involved in providing them.

Equally well recognized is the fact that both human and financial resources are scarce and that neither private nor public sector institutions can supply or finance all the necessary services at the farm level. This situation leads to the conclusion that the most practical approach for improving the delivery of required services is through a joint effort between public sector institutions and rural organizations.

In September 1991, the Inter-American Institute for Cooperation on Agriculture (IICA), in collaboration with the Ministry of Agriculture, initiated a short term activity with the aim, ultimately of designing a rural development strategy, for Barbados. One of the first steps in the design process was the collection of baseline information on rural organizations and support groups. The results of that research phase are included in this and its companion document entitled Profiles on Rural and Support Organizations in Barbados by Rebecca Porter and Jerry La Gra.

The first rural oriented organization in Barbados was the Barbados Agricultural Society, registered in the year 1890. Since then, a number of organizations have evolved, each with its own history and collection of experiences. Much of this knowledge is encompassed in this publication.

The Ministry of Agriculture and IICA hope that this will become a useful reference document for all those persons interested or involved in rural development in Barbados.

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Permanent Secretary
Ministry of Agriculture
Food and Fisheries

Reginald Pierre
Director of Operations
(Caribbean) and
IICA Representative in Barbados

SECTION 1 - INTRODUCTION AND BACKGROUND



SECTION 1 - INTRODUCTION AND BACKGROUND

1.1 Introduction

1.1.1 About the Study

A very high percentage of rural development projects fail to achieve their intended objectives, resulting in wastage of resources and declining levels of services and the quality of rural life. This situation has prompted IICA to initiate a series of studies aimed at documenting rural development experiences, identifying causes for project failure, and generating decision-making information to facilitate the design of sustainable development activities and projects.

The economy of Barbados is characterized by a narrow resource base, a shift of labour away from the agricultural sector, a heavy dependence on the international economy and a high level of government involvement and intervention in the economy. The country has a highly developed social structure and a literate population with high expectations.

As the result of changing world markets and economic recession, Barbados has been forced to initiate some measure of restructuring which is having a significant impact on social services and employment opportunities. As government cuts back on direct support to rural development activities, it is seeking new paradigms to create jobs, increase agricultural production and stimulate private sector investment.

This Study, carried out in collaboration with the Ministry of Agriculture, Food and Fisheries, responds to the need for understanding the rural development experiences in Barbados. It examines the history of rural development and identifies and describes the major projects, participants and their contributions. The Study also identifies project ideas and actions to guide the formulation of a rural development strategy for Barbados.

The research for this document began with a meeting of rural development specialists from the public and private sectors to identify available information, major projects and key participants, and to discuss strategies and options for future development. This was followed by the contracting of two Consultants; one prepared this document and the second prepared profiles on rural development and support organizations.

In the preparation of this document, the Consultant carried out a review of the literature which included national development plans, sector plans, economic reports, project



documents, profiles of key organizations, and their annual reports. The Consultant interviewed key persons involved with rural development, including professionals in the respective Ministries of Government.

During the conduct of this Study, the Consultant was faced with the absence of clearly defined and verifiable objectives for the various rural development programmes and projects examined. The information obtained was mainly descriptive. Specifics on numbers of beneficiaries, target groups, income changes and quantifiable outputs generally were lacking. This was due to the fact that none of the projects had monitoring and evaluation components to generate such data. Because of this constraint, the nature of this document is more qualitative than quantitative.

1.1.2 The Agricultural Sector in Barbados

Sector Objectives

The objectives for the development of the agricultural sector in Barbados as contained in the Agricultural Sector Plan 1988-1993 are:

- i) To contribute substantially to the provision of adequate food supplies at reasonable prices for the population of Barbados through increased agricultural production;
- ii) To enhance the nutritional status of the population by encouraging the consumption of locally produced food items on a balanced basis and in accordance with recommended dietary practices;
- iii) To promote food security, including food reserves, as a buffer against natural disasters, crop failures, or uncertain food supplies;
- iv) To maintain and develop export markets for selected agricultural products in order to improve the balance of payments;
- v) To maintain employment opportunities where feasible, and to improve the incomes and living standards of the agricultural community through productive agricultural activities, including the development of businesses and industries related to agriculture;



- vi) To promote within the context of the efficient utilization of the land and water resources a programme of diversification in agriculture while at the same time maintaining sugar cane cultivation at optimum levels;
- vii) To contribute significantly to overall economic growth.

Structure

In the simplest form, the agricultural sector in Barbados is divided into the small farmer sub-sector representing those farms with less than 5 hectares (ha) of land and the plantation sub-sector representing farms of over 5 ha in size. The available agriculture land resource has declined from 24,905 ha in 1971 to 22,000 ha in 1989/90 with over 90% of this land resource privately owned and the remainder being owned by the Government.

In the 1989 Agricultural Census it was found that plantations represented only 1.5% of the farming units but controlled 84% or 18,202 ha of total arable land. The small farmers represented the remaining 98.5% of farming units which occupied 16% or 3,385 ha of land. Table 1.1 gives the distribution of farm holdings and acreage on those holdings for the census years.

Table 1.1
Land Tenure Barbados - 1961, 1971 & 1989
(Number and Hectares)

Year	Small Holdings Less Than 5 Hectares		Estates 5 Hectares and Over		Estates Area as % of Total
	Number	Hectares	Number	Hectares	
1961	27,626	5,704	286	32,686	85
1971	25,788	3,611	264	21,294	86
1989	12,822	3,385	188	18,202	84

Source: Censuses of Agriculture, Barbados - 1961, 1971 and 1989



Production Trends

Between 1975 and 1980 the absolute value of agricultural production (as calculated in the GDP) increased from \$94.3 million to \$143.7 million and rose further to \$159.5 million in 1990 but declined in its relative contribution to GDP at factor cost from 14% in 1970 to 9.6% in 1980 and 5.4% in 1990. However, it is of interest to note that within these global figures, sugar's contribution to GDP declined from 8.2% to 2.0% during the 1975 - 1990 period while non-sugar agriculture maintained its position in contributing just over 3% to GDP during the review period.

Sugar production in 1970 was 153,923 tons and declined to 136,600 tonnes in 1980 and to 69,300 tonnes in 1990 in a fluctuating pattern while the area harvested declined from 24,888 hectares to 10,500 hectares over the 1970 - 1990 period. Export earnings from sugar, which still represent over 90% of total agricultural export earnings, rose from a level of \$34.4 million in 1970 to \$121.3 million in 1980 and declined to \$57.9 million in 1990. The other major primary agricultural exports included cotton, root crops and vegetables.

Root crop production declined significantly between 1980 and 1990 in moving from 12,500 tonnes to 8,400 tonnes, while the trend in vegetable production over the same period was one of general decline.

Cotton production was revived in 1984 when 7,000 kgs of lint were produced. This production increased to 173,000 kgs by 1987 but declined to 49,400 kgs in 1990.

Fruit production continues to be unorganized and seasonal while the major livestock activities which include: dairy, beef, sheep, goat, pig and poultry production, experienced significant growth during the 1980-1990 period. For example, milk production increased from 7.5 million kgs to 14.2 million kgs, poultry production moved from 6.0 million kgs to 10.2 million kgs, egg production rose from 1.5 million kgs to 1.6 million kgs and beef output from 0.4 million kgs to 0.9 million kgs.



Agricultural Resources

Land

Approximately 22,000 hectares or 51% of total land area is still in agriculture, which provides for a population density per hectare of 10 persons and an average size of holding of 1.3 hectares (based on the 1989 statistics of farm holdings). Soil erosion occurs on slopes, especially in the Scotland District, and on shallow soils due to over-grazing, over-irrigation, burning of sugar cane, and poor cultural practices. The pressure on land use has increased due to demand from the other sectors, especially housing, forcing speculation in the land market and the resulting high prices. It is of interest to note the recently high demand for arable agricultural land for the development of golf courses.

Water

On average, Barbados experiences only 150 cm of rainfall per year, most of which falls between June and December. This rainfall distribution has contributed in part to the seasonal nature of non-sugar crop production and the resulting difficulties in domestic marketing.

The irrigation potential in Barbados has been well delineated in the Barbados Water Resources Study¹. This Study has estimated the water available for irrigation to be such as to irrigate about 1,600 hectares of land annually. Estimates show that agriculture currently uses around 6 million gallons per day (MGD) mainly on irrigated vegetables. Of the total, 67% or 4 MGD comes from the public supply system while the other 33% comes from private systems.

Capital

The main sources of capital for private investment and of operating funds for agricultural enterprises, are the Agricultural Division of the Barbados National Bank

¹ Barbados Resources Study prepared for the Government of Barbados by Stanley Associates Engineering Limited and Consulting Engineers Partnership Limited. 1978.



(BNB), Barclays Bank and the Barbados Development Bank (BDB). Commercial Bank credit to the agricultural sector during the 1982-1990 period peaked at \$37.4 million in 1983 and was \$28.3 million in 1990. With respect to private capital in agriculture, it is of importance to note the level of debt (over \$200 million) owed by the sugar industry to the banking system and its negative impact on both sugar and non-sugar production.

Government's contribution to the capital development in the agricultural sector has increased from \$6.8 million in 1980/81 or 4.9% of its total capital expenditure to \$18.0 million in 1990/91 or 7.8% of total. The major sources of funds for capital investment in agriculture by Government have been the Consolidated Fund and project funding through international and regional funding agencies.

Human Resources

The agricultural labour force decreased from 9,500 in 1980 to 6,900 in 1987 due mainly to the decline of the sugar industry and to the financial difficulties experienced by the plantation sub-sector during this period. In 1980 and 1987, 44% and 31% respectively of the agricultural labour was in the sugar industry. The downward trend in agricultural labour is further aggravated by the high age structure which still exists (Table 1.2) but has also been influenced by increasing mechanization, the shrinkage in the number of sugar factories and the competition from the other sectors.

Table 1.2
Age Structure of Registered Agricultural Workers
in the Sugar Industry (%)

AGE GROUP	1971	1980	1987
Less than 25 years	3	3	4
25 - 50 years	42	37	46
Over 50 years	55	60	50



Agricultural Institutions

The Ministry of Agriculture

The Ministry of Agriculture has overall responsibility for fostering, guiding and monitoring the development of the agricultural sector and as such is the major arm for implementing Government's agricultural policy. At present, the Ministry is responsible for:

- agricultural planning, research and extension, provides an incentive programme and is directly responsible for the implementation of all Government sponsored agricultural projects, especially those financed through external borrowing.

A comprehensive examination of the Ministry was undertaken during 1985 with a view to recommending appropriate measures which could be instituted to improve its effectiveness.

Agricultural Division - Barbados National Bank

The Agricultural Division of the Barbados National Bank is the main institution through which Government implements its agricultural credit policy. Prior to 1977, agricultural credit was provided mainly through three Government owned banks: the Sugar Industry Bank, the Agricultural Credit Bank and the Barbados Development Bank (BDB). Over the years, sugar activities have secured the major portion of the credit disbursed and now account for the bulk of the debt owed to the BNB. As a result of its present financial position and inadequate credit delivery mechanism, this institution could undergo severe restructuring under the existing adjustment programme.

The role of the BDB in providing credit especially to the fisheries and agro-processing sub-sectors should be noted.

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Barbados Agricultural Development Corporation

The Barbados Agricultural Development Corporation (BADC) was established to manage those marginal plantations which fell into the Government's control during periods of unprofitable sugar production. Its functions were widened to include developmental research, (especially with respect to diversification at the plantation level), the provision of services to the farming community and the implementation of rural development projects. The Corporation is a major producer of vegetables for the export market.

The Barbados Marketing Corporation

The Barbados Marketing Corporation (BMC) was established in 1961 and was charged, among other things, with the function of simulating, facilitating and improving the production, marketing and processing activities in the island, particularly for the benefit of producers. Several problems - including the conflict of objectives, organizational and management weaknesses, inadequate storage and processing facilities, and untrained staff - inhibited the achievement of its objectives. The BMC has now shifted its emphasis from the physical handling of agricultural produce for the domestic market to an agency that facilitates and co-ordinates marketing. It operates an export facility for vegetables and root crops and in 1990 this facility exported 844,903 kgs of fresh produce.

The Barbados Agricultural Society

The Barbados Agricultural Society (BAS) is the largest farmer organization in the country. It not only acts as a bargaining body for producers, but also provides services including marketing. In fact, the Agricultural Commodity Trading Company (ACTO), which is the trading arm of the BAS, has performed a crucial role in the institutional marketing of fruits and vegetables locally.

The membership of BAS (approximately 800) is formed into associations that cover such areas as food crops, poultry, dairy, sheep and pigs. The society secures part of its annual financing from the Ministry of Agriculture as a subvention.



The Barbados Sugar Industry Limited (BSIL)

The BSIL functions as a cooperative body for the processing and marketing of sugar and for the development of the industry on behalf of its members - the sugar plantation owners. To date, its participation in the development of non-sugar crops and the associated research has been dwarfed by its cane activities, although its members are the major producers of non-cane crops. The BSIL has special sections dedicated to small farmer sugar production and to cotton production.

Recent examinations of the sugar industry indicate the need for major reorganization and there is little doubt that such restructuring will be the central focus of the structural adjustment programme being formulated for Barbados.

The Caribbean Agricultural Trading Company (CATCO)

The Caribbean Agricultural Trading Company (CATCO) is a regional Company based in Barbados, with a mandate from its shareholders (i.e., Regional Governments) to develop and trade in agricultural produce. To this end, CATCO seeks to mobilize supplies from various islands to be marketed as Caribbean produce primarily in the UK and Europe. CATCO has been trading since 1983 and has developed key marketing contacts in the major UK and European markets. In addition, CATCO has appointed a field representative in Holland and marketing representatives in five (5) CARICOM islands.

During 1989/1990 CATCO grossed \$2.6 million in fresh produce sales. Their movement of produce from Barbados in 1989/1990 was 362 tonnes and from the region, 1080 tonnes. (Table 1.3). About 68% of this volume was marketed in the UK and 20% in other European countries.

CATCO has identified the cost and availability of freight from the Region to UK/Europe as a major constraint facing the agricultural diversification programme. In addition, CATCO sees the need for:



- institutional support in the form of research and extension;
- a system that links the local and export markets;
- improved handling of produce by growers.

CATCO's finances for trading have been provided in the main by grant funding from the European Development Fund (EDF) and the United States Agency for International Development (USAID).

Table 1.3
CARIBBEAN AGRICULTURAL TRADING COMPANY
LIST OF MAJOR PRODUCTS GROUPS WITH VOLUMES (TONNES) TRADED
FROM CARICOM REGION 1985/86 TO 1990/91 (EST.)

PRODUCT	1985/1986	1986/1987	1987/1988	1988/1989	1989/1990	1990 estimate
Root Crops (1)	115	35	320	311	276	585
Pumpkin	1	77	154	114	143	1,035
Ginger	28	70	59	137	67	35
Hot Pepper	32	67	68	45	61	45
Breadfruit	24	17	55	82	46	105
Melon	11	90	78	76	23	45
Papaya	1	5	24	69	114	75
Other Veg. (2)	43	107	23	16	30	5
Other Fruit (3)	37	43	81	281	222	265
Regional Trade (4)	77	36	107	138	98	165
TOTAL	369	547	959	1,269	1,080	1,460

Notes:

(1) Sweet potato, yam, eddoe, dasheen

(2) Okra, eggplant

(3) Mango, golden apple, soursoup, plantain, waternut, breadnut, bilimbi tayerblad

(4) Plantain, banana, melon, pineapple, limes and grapefruit.



Regional/International Institutions

There are a number of regional and international institutions (CARDI, OAS, EEC, CFC, FAO, IICA, UNDP, IBRD), providing assistance in training and funding for the development of Barbadian agriculture. While their importance has been recognized, the 1988 - 1993 Agricultural Development Plan sees the need for effective rationalization of such assistance as well as the need for proper co-ordination of assistance so as to avoid unnecessary duplication and inefficient use of scarce resources.

The United States Agency for International Development (USAID) has a major programme to assist with the funding of agricultural projects through loans and equity (joint-venture) participation - the High Impact Agricultural Management Programme (HIAMP)/Agricultural Venture Trust (AVT).

Constraints of Agricultural Development

The major constraints to the development of the agricultural sector are summarized as follows:

Structural

- skewed distribution of the land resources;
- limited size of holding which put pressure on the ability of the small farmer to produce to his potential;
- limited water resources;
- relatively limited domestic demand (250,000 resident population) and the failure of the existing marketing system to cope with seasonal price fluctuations.



Operational

- weak marketing system and the low level of technology within the sector;
- limited access to export markets;
- under-development of agro-processing industries especially for fruits and vegetables;
- relatively high consumer preference for imported products (food import for 1990 was at \$209 million) vis-a-vis locally produced products;
- limited sectoral linkages especially between agriculture and tourism;
- unfavourable attitudes of youth towards farming;
- low per capita consumption of root crops, fresh fruits and vegetables by local population;
- ineffective agricultural support services including research, extension, training, incentives;
- high cost of production due in part to the cost of imported inputs and wages;
- inadequate co-ordination between the parties concerned with agricultural development;
- debt problem especially in the sugar industry;
- praedial larceny and stray livestock.



1.2 Background and History

1.2.1 Introduction

In order to evaluate rural development in Barbados, recognition must be given to the structure of the Barbadian economy, where historically there has not been the classic division between the rural and urban sectors in Barbados. This rural/urban dichotomy in Barbados has been absent, in part, because of the small size of the country, the availability and accessibility of services and the urbanization of rural districts. The absence of a distinct rural/urban demarcation has in turn reduced the significance of the term 'rural development' in the various National Development Plans for Barbados. Added to this phenomenon has been the presence of only a central government (vis-a-vis local government) since the early 1960's which treated its policies and programmes as national in scope. For example, projects in education, road construction, health and housing when approved by the central government were implemented nationally (both rural and urban districts).

On the other hand, projects and programmes implemented by Government in the agricultural sector naturally were concentrated in the rural areas. Hence, agricultural projects have become synonymous with rural development projects in Barbados. Although there have been efforts to implement integrated rural development projects in Barbados in most cases the agricultural component was the major one given the nature of the rural environment. This Study of necessity focuses mainly on agricultural sector projects and where relevant, highlights the social and infrastructure projects that complement the rural development process in Barbados.



1.2.2 Past Developments

Agriculture

Historically, most economic activities carried out in the rural areas of Barbados in the pre-independence period were executed by plantation agriculture. The plantation system created and controlled the main framework of rural development. It was responsible for the skewed distribution in the ownership of land, a concentration of cheap mass labour in the canefields, and the establishment of tenant communities out of rented lots to labourers.

Cultivation of sugar cane on the plantations dominated not only the rural setting but the national economy as well. Consequently, there was a very minor role for small farmers to play in the economic and rural development of the island.

Immediately after independence (1966), Barbados witnessed some sub-division of plantations into smaller holdings. This process was accelerated in the 1970's and resulted in a significant movement of land to other segments of the society. By this time, national planners had already begun to articulate a philosophy aimed at the transformation of Barbados into a modern, self-reliant, industrialized society. Recognizing that no single strategy could be pursued or implemented to achieve this national objective, decision-makers adopted an integrated approach that included the need to increase opportunities for the population to satisfy its basic needs.

In July 1979, Barbados and other developing countries committed themselves to positive action in the area of Agrarian Reform and Rural Development at the first World Conference on these matters held in Rome. The conference set underlying objectives towards the elimination of poverty, hunger, and malnutrition and recommended the following national programmes of action:

- a) access to land, water and other natural resources;
- b) integration of women in rural development;
- c) people's organization;
- d) access to inputs, markets and services;



- e) development of non-farm rural activities;
- f) education, training and extension.

In its 1979 - 1983 development plan, the Government of Barbados named four projects in agriculture for implementation so as to assist in the economic development of the island. These four projects, intended to impact heavily upon the rural development process, were:

- a. Export agriculture
- b. Integrated rural agricultural development
- c. Irrigation development
- d. Land Settlement/Land Lease Scheme

a. Export Agriculture

Traditionally, over 70% of the agricultural land resources of Barbados have been devoted to sugar production. Through the years, Governments have recognized the inherent weakness in a mono-crop economy and consequently have made efforts to diversify the country's agricultural output. As far back as the mid 1960's, some plantations promoted diversification and their response created serious marketing problems for small farmers. Additionally, the decline in sugar prices during the mid-1960's - 70's forced a number of plantations out of production. Government responded to the marketing problem faced by small farmers by establishing the BMC (1961) to provide a ready and certain market for the agricultural produce of small farmers. It also purchased some of the unprofitable closed plantations and created the BADC (1965) to keep these plantation lands in cultivation. Part of the diversification thrust had aimed at satisfying local demand for fruits, vegetables, and dairy products and also piercing selected markets in temperate countries (UK, USA and Canada) which required fresh fruits and vegetables during the winter season. However, both the BADC and BMC failed to adequately carry out their functions and by 1981, non-sugar export agriculture was showing signs of serious decline. (Table 1.4).



The Pine Hill Dairy was established in 1966 to stimulate dairy production and the Ministry of Agriculture created an Agricultural Planning Unit in 1968 to better service the growing diversification drive.

TABLE 1.4 INDICES OF AGRICULTURAL PRODUCTION 1972 = 100						
	1976	1977	1978	1979	1980	1981
Sugar Cane	86.7	98.7	84.5	99.2	113.7	91.7
Domestic Food Crops	66.8	39.1	99.0	94.1	52.7	38.6
Livestock Food Products	135.6	128.6	164.1	158.3	150.4	161.4
Export Agriculture (excluding sugar)	77.5	47.0	54.5	35.7	27.7	20.0
All Products (excluding sugar)	109.5	94.4	137.5	131.5	112.0	113.6

Source: Barbados Development Plan - 1983 - 1988, whose source was the Central Bank of Barbados

b. Rural Development

Land use policies in existence at the start of the 1970's permitted the sub-division of agricultural land into two and four acre farms with the intention of stimulating a vibrant commercial small farmer. However, this practice was abused by land speculators who purchased the lots for real estate purposes. By the mid-1970's it had become evident that an agricultural land rehabilitation policy should be formulated and implemented.

With this objective in mind, Government embarked on an integrated rural development project which aimed at the development of plantation tenancies as viable agricultural units. The project sought first to transfer the titles of rented land to existing tenants and then subsequently to develop infrastructure and irrigation facilities.

Although it has been noted that an urban/rural dichotomy is not strictly applicable to Barbados, Government embarked also upon an integrated urban



development project (housing, roads, water, electricity) aimed at covering the entire island and not just Bridgetown and its environs. The rural development project was so labelled because of its specific links with agricultural activity and its intended purpose of supporting small farms in rural areas.

The introduction of two Acts - The Tenancies Freehold Purchase Act and the Tenancies Development Act - provided the development of rural agriculture with a much-needed impetus and also enhanced social integration in rural areas, since essential services (water, electricity and roads) were to be provided to the tenancies.

c. Irrigation Development

The St. Lucy tableland and the St. Philip tableland represent two of the driest physical divisions of Barbados. Statistics indicate that agricultural activity demand 6 million gallons of water per day and out of this amount, 4 million gallons come from the public supply system whilst 2 million gallons come from private wells. Because of the high establishment costs, the private irrigation systems have been all located on large farms. Small farmers have indulged in "illegal" backyard irrigation from domestic taps.

Government's policy on water use has been aimed at improving irrigation practices and fostering the development of co-operative irrigation systems so as to reduce small farmers' dependence on the domestic water supply system. Consequently, both the Spring Hall Land Lease Project and the Integrated Rural Development Project included co-operative irrigation systems. To date, however, these systems have proved to be problematic.

d. Land Settlement/Land Lease Scheme

For many years, the distribution of land ownership in Barbados remained highly skewed. By the 1980's, only 2% of the total farm units controlled 86% of the available land. In an attempt to improve small farmers' access to land, the Barbados Government implemented a land settlement project - the Spring Hall Land Lease

Project - partly funded by the CDB. The Spring Hall Project commenced in 1982 but despite the availability of credit, training, and extension services, many constraints have emerged to retard the success of the project. (See Appendix 1).

1.2.3 Infrastructure Development

In addition to the agriculture-related objectives, Barbadian Governments have embarked upon a strategy which sought to provide an improved public transportation system, expanded utility services (electricity, water, telephone), upgraded roads, and other services to the rural areas of the country that were hitherto inadequately serviced. With respect to utilities there has been significant progress made in reaching consumers over the period 1977 - 1990. (Table 1.5).

Table 1.5
Consumption of Utility Services

UTILITY	1977		1990	
	New Service	Total Service	New Service	Total Service
Telephone	3,370	47,419	5,310	80,404
Electricity	1,820	61,684	2,000	85,300
Water	2,834	61,834	1,800	84,000

Since 1983, there has been a steady increase in the number of housing starts per year, with 1453 housing starts recorded in 1989. Housing completions for 1989 amounted to 3,195. The Government through its Industrial Development Corporation constructed two major industrial estates in the rural areas. This action provided employment for several persons.

It is important to note that available information suggests that over 90% of all households in Barbados have direct access to running water.



1.2.4 Social Development

Significant development occurred in the social development programme of Barbados since the 1960's and this development took place throughout the country (both in urban and rural areas). In the field of education, free secondary education was introduced in all Government secondary schools in 1962 and financial assistance given to the pupils in private/independent schools. In addition, several secondary schools benefitted from the building of additional facilities especially the science laboratory. In 1963, a major school meals programme was introduced and was gradually extended to all primary schools. The expansion of educational opportunities included the opening of the Cave Hill Campus of the University of the West Indies in 1963 with free tuition to Barbadian students. This was followed by the opening of the Barbados Community Collage in 1969 and the Samuel Jackman Prescod Polytechnic in 1970. In 1979, the Government secured an education loan (US\$9.0 million) from the World Bank to undertake replacement, renovation and expansion to the physical facilities of several secondary schools.

In the area of health development, the major projects introduced during the past decade included: the construction of a new general hospital by Government, the opening of a private hospital (St. Josephs), the introduction of the Applied Nutrition Programme, the construction of eleven (11) polyclinics in urban and rural areas, the introduction of a National Insurance and Social Security Scheme, and the introduction of the National Drug Service.

In the area of tourism, the Government opened a Hotel School in 1964 to train the human resources that were to become the engine for the successfully developed tourism industry. Between 1964 and 1990, the number of hotel beds grew from 2,750 in 1964 to 13,767 in 1990.



1.2.5 Present Situation

The output of sugar declined steadily from 111.1 million tons in 1986 to 66.3 million tons in 1989. This decline in output has been matched by a decline in the areas under sugar production and a decline in the level of employment in the agricultural sector which stood at only 5.7 % of the total labour force in 1989.

Severely reduced acreage of sugar cane cultivation has created an available supply of idle lands well-suited for the establishment of rural development projects. But with respect to such projects, it has become evident that the economic viability of both the large traditional plantation and the small farmer is being threatened. This suggests that medium-sized family farms fully mechanized should now form the basis for rural development projects.

The low labour component of agricultural production has created the need for a high degree of mechanization and increased technology. Today, the level of technology in Barbadian agriculture is generally high with mechanical cultivation and harvesting being widely practiced in the sugar industry, drip irrigation systems being used in the growing of fruit and vegetables and the mechanical harvesting of rootcrops.

Soil erosion in the Scotland District, which represents 1/7 of the land area of Barbados, has affected residents and has also severely marginalised the whole area with respect to agricultural activity. The Government-funded Scotland District programme still seeks to stabilize lands in the area but inadequate staffing and financing continue to plague efforts at maintaining all reformed areas.

In the area of irrigation development, the Government of Barbados continues to offer farmers a range of incentives. A grant of between 50% - 75% of the cost of establishing an approved irrigation system is offered to farmers, farmers' groups, or registered agricultural co-operatives, and a grant covering 50% of the cost of digging wells is also offered. Furthermore, the existence of spring water in the Three Houses Area in St. Philip offers some potential for irrigated production to farmers in the area. The Government undertook a study of the Spring in 1989 and



intends to construct a dam, clean and deepen the wells, and clean the watercourse in an effort to give around 25 small farmers direct access to irrigation water.

By virtue of the Tenantry Freehold Purchase Act, a total of some 7,084 housing units which existed within the 320 plantation tenancies of Barbados obtained the right to purchase their house lots at ten cents per square foot. To date, only 2,059 persons have made purchases and thus the full social development benefits provided by the legislation have not yet been fully reaped. Progress with respect to the purchasing of agricultural plots has been much slower than that for house lots. Only 150 purchases have been completed to date out of a total of over 1,000 agricultural holdings. Thus, small farmers have not yet grasped the opportunities, options and incentives which the purchasing of their agricultural lots will provide. The viability of these units as an agricultural enterprise is however doubtful.

The Government of Barbados owns just under 500 hectares (2% of arable land) in the country and currently is considering a programme aimed at developing some of these lands and leasing them to small farmers.

Under most of these rural development programmes, credit facilities have been established mostly through the BNB. However, some farmers have shown a reluctance to use these facilities whilst others have made use of credit but failed to repay their loans.

The level of infrastructural development within Barbados has now created many centres of activities across the country providing services to farmers and the rural poor. The high utilization of transport and communication networks also serve to ensure that those services offered in Bridgetown which are beneficial to rural groups are easily accessed.



1.2.6 Lessons Learnt

The rural development that has taken place in Barbados over the past two decades has been accomplished through the utilization of arable lands, irrigation resources, adaptation of mechanization, high level of chemical input use and training of human resources. Given the successes and failure with various components of the rural development projects, the conclusion can be made that although the above variables are the essential ingredients for success the methods used to harness them into a cohesive project have not been always appropriate.

Future rural development projects should not abuse the use of the limited arable lands by finding ways to alter its agricultural use to speculative real estate ventures. Laws to protect land for agricultural purposes (land zoning) are required.

The utilization of the limited irrigation resources should be done with the most efficient technology available. To this end, the use of drip irrigation systems should be given priority attention wherever feasible.

The use of mechanization for cultivation and harvesting has accelerated rapidly and projects often acquire machinery without carefully assessing its suitability, e.g. size of tractor and plough for small farms and most suitable irrigation pump. To avoid this mis-use projects should use the services of equipment specialists before procuring machinery.

The use of chemical inputs (weedicides, insecticides) on crops are essential but is often abused through lack of knowledge. Projects can correct this malpractice through the provision of technical and management assistance to participants.

The selection of the right person for a task within a project is often not achieved either at the project management level or participant level. To avoid this, a detailed selection criteria should be worked out for every position and, where feasible, persons trained during the project's pre-implementation phase. This training should be an on-going component of the project.



Virtually all of the rural development projects exhibited weaknesses in their design and scope and these were attributed to, among other things, insufficient time available to conduct a thorough feasibility study, lack of involvement of the target participants in the design stage and the absence of clearly defined (quantifiable) objectives.

There is evidence that the lack of coordinating mechanisms for projects focusing on the same target group e.g. women, has contributed to the duplication of effort resulting in a wastage of scarce resources. However, where a coordinating agency exists, e.g. cooperatives, it should be sufficiently strong to undertake its role, failing which, it risks being ignored by members.

The rural development project process has been fueled by Government initiative, intervention, financing (subsidization) and handicapped by its bureaucracy. Of necessity, future rural development projects will have to be more self-reliant and self-financing given the realities of the new structural adjustment programmes. One can expect that the private sector and NGO's will be forced to undertake the lead role for these projects.

A further impact of the structural adjustment programme on the design of rural development projects in agriculture will be the increasing focus on crops/livestock for either export development or import substitution. As a result, projects that are purely social (not productive) in nature will not be priority projects.

Virtually all of the organizations involved with rural development programmes/projects are in need of more qualified manpower to service the projects' activities. This need for institutional strengthening should be rationalized in the future to avoid competition for scarce human and financial resources. More streamlined and specialized organizations should be the order of the day.

Several programmes/projects have been undertaken with no post-completion evaluation of the estimates. This is necessary to ascertain the true impact on the project beneficiaries and to determine lessons learnt for future use. Efforts to initiate on-going and post-completion evaluation should be an integral part of future rural development projects.



SECTION 2 - RURAL DEVELOPMENT INSTITUTIONS



SECTION 2 - RURAL DEVELOPMENT INSTITUTIONS



- b) To provide for one central office and one central secretariat for those groups that require such services to give producers a basis for unity of purpose and a united voice.
- c) To provide producer groups with helpful information, statistics, forecasts and development possibilities to meet changing economic conditions.
- d) To investigate pricing structures, both selling of products produced and input products for production and if deemed necessary, arrange to move into any field where either buying, selling or manufacturing would be beneficial to any or all groups.
- e) To be reliable and trustworthy "One Voice" for agricultural producers.

2.2.3 Activities

The BAS undertakes a major programme comprising a wide range of activities aimed at benefiting its members in particular and the farming community in general. These activities are more services oriented than investment project focused.

Operationally, the activities of the BAS are implemented through two (2) channels. The BAS Central Management Services and the BAS Commodity Associations.

A. Services of BAS Central Management

These services include:

- i) Accounting, secretarial and management services to BAS member commodity groups.
- ii) Acts as the central marketing agency on behalf of all member producer groups.
- iii) Provides farm management support services to individual farm producers.
- iv) Maintains and provides a comprehensive agricultural education and information service for individual producers, commodity groups and the public at large.



- v) Facilitates and provides access to farm supplies and equipment for member farmers.
- vi) Provides and maintains a national stock registration programme for member farmers.
- vii) Provides technical and management advisory services for member commodity groups.
- viii) Provides and enhances access to supplies of farm credit for member farmers.
- ix) Research, identify and mobilize project funding for on-going Barbadian agricultural development.
- x) Represent and act on behalf of the interest of Barbadian farm producers to the Barbados Government, private and public agriculture related organizations and the public at large.

B. Commodity Associations

The BAS is operated as an umbrella organization to six (6) commodity associations, these being:

- Barbados Dairy and Beef Producers' Association
- National Association of Pig Farmers
- Barbados Egg and Poultry Producers' Association
- Food Crop Farmers' Association
- Barbados Sheep Farmers' Association
- Barbados Dairy Goat Breeders' Association

The commodity associations operate under separate constitutions with their own Board of Management. As a result, each one has its own programme/projects focused at its members. Details on each commodity association are provided in the Report "Profiles on Farmer and Support Organizations in Barbados" prepared by IICA.



2.2.4 Impact

Evaluating the impact of the overall BAS's programme is very difficult given the absence of quantitative data from this Organization. The total membership (active and inactive) is some 1,000 persons whose farming activity range from the operators of the largest non-sugar farms to very small farmers (10 head of sheep). The impact of the various services on members therefore will differ depending on the size of the operation and participation rate of the farmers. In general, the larger the farming activity the greater the benefits from a given programme, e.g., quotas for pigs for processing, bulk sales of feed, purchase of sheep for export, purchase of vegetables for retail outlets. Whereas there is evidence that the BAS's programme of activities impact positively on farm incomes, farmer education, improvement in quality breeding stock, etc., the extent of the impact on intended beneficiaries and target beneficiaries within the BAS cannot be readily assessed.

The greatest impact of the BAS's programme has been in the success achieved in influencing and stimulating progress with the agricultural diversification programme in Barbados.

2.2.5 Issues

The structure of the BAS (ie, commodity associations), appears to be too disaggregated with respect to the livestock sub-sector. The needs of the beneficiaries are similar regardless of the type of livestock enterprise (ie, better breeds, more secure market outlets, reasonable prices, cheaper feeds, improved veterinary services, farmer education, etc.). An approach to bring together all livestock producers under one livestock growers' cooperative might stimulate members' interest and increase the effectiveness of the programmes.

The skewed structure of the membership of the BAS appears to also skew the impact of the programmes on participating farmers. In future, ways to reduce this imbalance will have to be found.



Collectively, the many project ideas of the respective commodity associations, which have been around for a long time, comprise too massive a programme for the existing central management to coordinate and administer. In groups like the BAS, too ambitious a programme with limited resources can reduce the impact of that organization.

2.3 Barbados Agricultural Development Corporation

2.3.1 Background

The agricultural development strategy of the Government of Barbados seeks to pursue a policy of diversification of production, promotion of non-sugar exports and development of a viable small farm sub-sector.

One of the major instruments being used in implementing this strategy is the Barbados Agricultural Development Corporation (BADC) which was formed in 1965. Since its formulation, the BADC has been involved with the development of several crops (e.g., cotton, peanuts, onions, vegetables and fruits) and livestock, particularly dairy. In addition, the BADC has initiated programmes towards the development of irrigation and mechanization of non-sugar agriculture.

With respect to the small farmer development strategy, the BADC has functioned as the small farmer development arm of the Ministry of Agriculture. To this end, the BADC has been designated the executing agency for the two major internationally funded small farmer projects in Barbados - the SHLLP and the IRDP.



2.3.2 Objectives

The BADC was established through an Act of Parliament with the following objectives:

- i) "to stimulate, facilitate and undertake the development of agriculture and to carry out, operate and participate in such agricultural projects as the Cabinet may approve; and
- ii) to develop and manage, on a commercial basis, such plantations and other agricultural land as may from time to time be vested in it, along the terms of Government's agricultural policy so as to stimulate and encourage the private sector."

These objectives as outlined by statute clearly provided for developmental as well as for commercial activities. In the early 1980's, the BADC redefined its objectives in the form of a five year Development Programme (1983 - 1988). The general objectives of this programme were as follows:

- a) "to ensure the optimum use of the total available arable land area;
- b) to maintain and if possible increase and intensify the production of sugar cane with a view to making the maximum possible contribution towards the target set for national sugar production;
- c) to contribute significantly towards the production of those non-sugar crops which have a clear-cut export potential;
- d) to contribute towards the national effort at reducing agricultural imports where the production of such crops by the Corporation is technically and economically feasible;
- e) to provide, wherever possible, the basis on which employment can be generated in secondary type agricultural enterprises;
- f) to conserve and protect lands under the Corporation's aegis from erosion and to develop and utilize efficiently, available water resources;
- g) to reduce or remove altogether the commercial division's dependency on Government for financial support."



The five year plan then went on to state that the "Corporation's strategy with regards to the realization of the foregoing objectives will be primarily focused on the use of the commercial division's arable land resource and the generation of increased earnings from its operations."

2.3.3 Programmes of BADC

The present activities practiced by the BADC may be classified under two broad programmes - commercial and developmental.

A. Commercial Programmes

The commercial activities involve the production of crops and the rearing of livestock on some eleven (11) plantations which occupy approximately 2,700 acres of land.

Sugar Cane. Sugar cane cultivation dominates the activities of the various estates and available data show that there were little if any structural change in production between 1970 and 1990 with over 60% of total arable acreage being harvested of sugar cane annually.

Non-Sugar Crops. The non-sugar activity of the BADC involves the production of vegetables (92 acres), yams (20 acres), sweet potatoes (79 acres) and bananas (4 acres). Irrigation supply is available on the BADC's lands to water 69 acres of crops.

Tree Crops. Tree crops are produced by the BADC on their estates in the Scotland District. The major fruits grown are the bajan cherry and guavas.

Cotton. The BADC has been used to pioneer the revival of Sea Island Cotton cultivation. The area under cotton increased during the 1985 - 1989 period to around 800 acres but has since declined due mainly to management difficulties with the specialized cotton company.



Livestock. The livestock activity of the BADC consists of the dairy farm located at the Hope Plantation which occupies some 306 acres of land.

B. Development Programmes

The development programmes of the BADC consists of four (4) activities:

- i) Rural Development Programme
- ii) Spring Hall Land Lease Project
- iii) Small Holders Mechanization Scheme
- iv) Research Activities

The Spring Hall Land Lease Project and Rural Development Programme are both small farmer projects and have been reviewed by this Report at Sections 3.2 and 3.3.

The Small Holder Mechanization Scheme is a service provided by the BADC to small farmers to assist with the cultivation of land. (See Section 3.6).

The Research Activities involves crop research, irrigation development and dairy research.

Crop Research

The BADC in collaboration with the Ministry of Agriculture undertakes applied research and demonstrations on crops such as: onions, cotton, peanuts and fruits (cherries, papayas, mangoes). This research is adaptable to both large and small farmers.



Irrigation

The BADC has initiated an irrigation development programme aimed at researching the appropriate technology for the development of export crops. So far, the research programme includes a drip irrigation system at Bath Plantation where vegetables are being produced primarily for the export market.

In addition, the BADC is required to provide irrigation schemes under the Rural Development Programme and the Spring Hall Land Lease Project. There are also plans for irrigation research with the tree crops and with systems other than the drip type.

Dairy Research

The research activities being conducted in dairying included: sugar cane feeding trials, pasture improvement and management, forage conservation and herd management practices.

2.3.4 Financing

The BADC operates at a financial loss and is given a subvention from Government annually towards its operating costs. During the period 1982/83 to 1991/92 the BADC received grants from Government totalling \$31.38 million as shown in Table 2.1. In addition, the BADC borrowed from the BNB primarily to finance its sugar cane operations. However, as in the case with most sugar estates, the BADC is indebted to the BNB to the tune of \$21 million.



Table 2.1
Subventions From Government
(\$ Millions)

YEAR	ANNUAL AMOUNT	CUMULATIVE
1982 - 1983	1.05	1.05
1983 - 1984	1.87	2.92
1984 - 1985	2.79	5.71
1985 - 1986	2.80	8.51
1986 - 1987	2.20	10.71
1987 - 1988	3.20	13.91
1988 - 1989	3.00	16.91
1989 - 1990	5.70	22.61
1990 - 1991	4.97	27.58
1991 - 1992	3.80	31.38

Source: Annual Estimates, Government of Barbados

2.2.5 Issues

The present economic restructuring programme adopted by Government as part of the IMF proposals will require Government to significantly reduce its subventions to Statutory Corporations such as the BADC. This action coupled with the massive indebtedness of BADC to the BNB places the future of the BADC in doubt. Clearly the BADC will be unable to perform its role as a key organization in any rural development programmes.

Indications are that there will be a rationalization exercise to examine the restructuring of BADC and the BMC resulting in one scaled down efficient organization. This exercise is expected to release lands for use with rural development projects that would be executed by Government and/or the private sector (NGO's).

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2.4 National Development Foundation of Barbados

2.4.1 Background

The National Development Foundation of Barbados (NDFB) is a member of the Caribbean family of National Development Foundations, created by the private sector to respond to the needs of technical assistance, training and credit for the small-business sector, particularly those entrepreneurs who have been unable to secure credit through the normal commercial channels.

The NDFB was established in November 1982 and commenced office activity with a full-time staff of two persons on April 1, 1984. The Foundation is registered as a non-profit organization with the tax exempt status of a charity.

2.4.2 Objectives and Goals

The objectives of the NDFB are:

- a) to secure maximum participation of private citizens on all levels in the development process;
- b) to promote the growth of private philanthropy and investment;
- c) to direct the skills and energies and funds it is able to identify and mobilize towards the creation of vigorous and profitable small business sector.

Specifically, the Foundation provides assistance to small business entrepreneurs in the following major areas:

- a) Management - advice, training and counselling to encourage profitability.
- b) Loan Capital - to encourage growth and volume purchasing.
- c) Financial Monitoring - to help small entrepreneurs make even better business decisions.
- d) Marketing - information and promotional ideas that will help to stimulate sales.



The Foundation is currently filling a need by the small and very small business sector for support and promotion which will help to create additional jobs, stabilize existing jobs, and raise the income of the small business entrepreneurial groups.

2.4.3 Areas of Specialization

The Foundation makes loans to clients of not more than Bds\$20,000 per client. The Foundation provides management training for its clients as well as to members of the general public who are interested in becoming or are small businessmen. The Foundation also offers counselling session to its clients.

2.4.4 Impact

The NDFB through its programmes has impacted positively on the development of small businesses in the Barbadian economy. Although not all of its projects are rural in nature, a high percentage of its beneficiaries are women. Table 2.2 shows the summary impact of the NDFB loans and the number of beneficiaries.

TABLE 2.2
NDFB LOANS AND NUMBER OF BENEFICIARIES

YEAR	VALUE OF LOANS DISBURSED (US\$)	NO. OF LOANS DISBURSED	NO. RECEIVING TRAINING/ TECHNICAL ASSISTANCE	NO. OF JOBS CREATED OR SUSTAINED
1990	335,106	63	391	175
1989	340,933	68	83	n.a.
1988	187,644	68	151	147
1987	240,255	77	228	113
1986	54,870	15	35	n.a.
1985	185,500 ^{1/}	22	-	n.a.
TOTAL	1,158,808	313	888	862

Source: Annual Reports of the National Development Foundation of Barbados
n.a. = not available

^{1/}: Refers to the July to December period.



The loans disbursed during 1987 - 1990 are analysed by sector and are shown in Table 2.3.

Table 2.3
Loans Disbursed During 1987 - 1990
(US\$)

YEAR	SMALL FARMING	MANUFACTURING	SERVICES	OTHER
1990	52,104	43,064	227,820	12,118
1989	88,021	41,573	197,042	14,297
1988	20,442	38,586	82,968	13,485
1987	29,780	38,217	145,106	27,152
TOTAL	151,728	161,440	652,936	67,052

Source: Annual Reports - National Development Foundation of Barbados

From the Table it can be seen that of the NDFB loans during the period 1987 - 1990, some 15% were made directly to the small farming sector.

2.4.5 Issues

The NDFB is making a meaningful impact on the development of the small business sector in Barbados. However, given the changes in the economy under the structural adjustment programme the future of the small business sub-sector has to be re-evaluated and the NDFB's lending portfolio reviewed. The predominance of loans to services vis-a-vis productive activities that either generate or save foreign exchange will have to be reversed.

In addition, the pressure to achieve greater technical efficiency in production and increase labour productivity will force the NDFB to modify its project evaluation criteria on which loan eligibility is based.



As investment capital becomes more expensive and less available, the NDFB will have to redouble its efforts to compete for the scarce loan funding at reasonable rates.

The provision of training and technical assistance as part of the future role of the NDFB will continue to be crucial, however, as a cost effective measure, the NDFB will have to quantify the benefits of participating in a shared training programme with other NGO's.

2.5 Barbados Marketing Corporation

2.5.1 Background

The Barbados Marketing Corporation (BMC) was created in 1961 as the only Government agency with ultimate responsibility for the marketing of agricultural products in Barbados. Its specific objectives, expressed by statute, were:

- to stimulate, facilitate and improve the production, marketing and processing of produce in the island, particularly for the benefit of producers;
- to secure the most favorable arrangements for the purchase, handling, transportation, storage, importation, shipping, marketing and sale of produce whether in the island or out of the island, and in particular to assist agriculturists and fishing co-operative societies to dispose of their produce to the best advantage;
- to make recommendations on any matter directly related to the production and marketing of produce.

2.5.2 Project Activities

A review of the major activities of the BMC since its inception can be undertaken in two phases - the pre-1980 and the post-1980 period. This phasing coincides with the stated change in emphasis from the physical handling of fresh



non-sugar produce to focusing on regulatory and service functions. In addition, the latter phase is marked by efforts at improving efficiency through management re-organization, trimming of superfluous human resources and the halt to on-budget financing for the Corporation.

Table 2.4 summarizes the activities undertaken by the BMC during the two periods identified.

Until 1983 BMC operated a produce intake unit which accounted for approximately 7% of non-sugar crops marketed. Despite the introduction of a contract system and grading standards, the unit never grew beyond the 'port of last resort', where producers took advantage of the high prices on the market and sold to BMC only when it suited them to do so.

The distribution function of the BMC has changed significantly over the years. In the area of retailing, the 6 outlets, operated to service the produce intake unit and facilitate the Corporation's role as the price leader, failed and were eventually closed. The activity of wholesaling imported food items has remained with the Corporation over the years and is in fact now recognized as the principal revenue earner. There has also been a marked difference in the export effort of the BMC during the two periods under review. Export during the pre-1980 period concentrated on regional trade under the Agricultural Marketing Protocol (onions being the major export under this Agreement), whereas efforts during the post-1980 period have focussed on penetrating extra-regional markets (UK, Canada, Europe and USA) with selected non-sugar crops.

This exporting is undertaken through its Export Packaging Unit (EPU) now operating for some 7 years. The EPU has accumulated over \$1 million in losses. Another crucial activity performed by the BMC is the operation of the Barbados Agricultural Statistical Information Service (BASIS).



TABLE 2.4
SUMMARY OF BMC'S ACTIVITIES

ACTIVITY	PRE 1980	POST 1980
<u>Physical Activities</u>		
1. Produce intake	*	-
2. Distribution		
- Retailing	*	-
- Wholesaling	*	*
- Exporting	*	*
3. Fish processing	*	-
4. Airport shops	-	*
<u>Service/Regulatory Activities</u>		
5. Farming services		
- Abattoir	*	*
- Small farmer poultry scheme	*	*
- Onion marketing system	*	*
- Market information/analysis	-	*
- Small farmer collection scheme	-	*
6. Experimental food processing	-	*
7. Cess on imports	-	*

* denotes activity took place



The initial impetus for establishing BASIS came through the Integrated Rural Development Programme (IRDP), a Government sponsored project. The BMC had an interest in this project and therefore provided financing to bring an expert in agricultural market information from Canada to Barbados to advise on establishing the system.

Following the Consultant's recommendations a system of collecting weekly wholesale prices from a range of buyers - supermarkets, hotels and restaurants, and Government institutions - commenced in March 1982. Public markets were not included. The information collected was used primarily for extension purposes within the IRDP.

The system of data collection was streamlined and following the appointment of a full-time manager further changes were introduced to BASIS. These included changing the layout of the information releases to improve their comprehensibility, changing the times of the radio programmes to make the information more current, and the allocation of a budget to BASIS for purchasing supplies and equipment.

In due course, an additional member of staff was obtained and steps were also taken to establish a sample for undertaking a monthly production survey. This consisted of producing a register of farmers' names, addresses and farm size. A programme of distributing recipes through leaflets in supermarkets and articles in the press was also started.

Based on the register of farmers' names, a sample was selected and the first production survey was undertaken. The survey impact was limited because a large number of the farmers could not be found and most of the extension officers failed to collect information from their allotted farmers. There was also resistance from farmers in giving out information, due to a lack of understanding of the purpose of the survey or disenchantment, as previous surveys had not provided them with any tangible results.



2.5.3 Impact

During the period when the BMC handled produce physically, it provided an outlet for a number of small farmers and although it was perceived by some as a 'port of last resort' the volumes traded by the BMC represented about 10% of agricultural crop production.

The export activity of the EPU is making a significant contribution to agriculture and in 1990 the EPU exported 855 tons of fresh produce. (Tables 2.5 and 2.6).

In the area of livestock development, the BMC has performed a major service by operating the only abattoir facility in the island. The throughput of animals slaughtered have fluctuated over the years, but in 1990, the abattoir slaughtered some 20,675 head of livestock compared with 15,180 in 1980. (Table 2.7).

The Corporation also plays a vital role in the marketing of locally produced onions (and previously peanuts) where services include harvest scheduling, farmer price determination and controlling of imports during local harvest season.

The BMC earns revenue through imports of selected items such as onions, English potatoes, chicken backs, necks and wings, and pork primals. The total revenue from sales (mainly imports) during 1990 was \$19.8 million.



TABLE 2.5
BARBADOS MARKETING CORPORATION
VOLUME OF FRESH VEGETABLES EXPORTED
1989 & 1990 (KGS)

COMMODITY	1989	1990
Sweet potato	210,286	678,126
Yam	24,415	4,305
Hot Pepper	66,744	40,705
Okra	1,197	3,721
Eddoe	8,068	350
Squash - butternut	8,027	25,002
Aloe vera	614	1,139
Thyme	153	547
Spinach	202	684
Cassava	284	118
Eggplant	-	386
Tomato	-	1,218
Callaloo	227	23
Pumpkin - belly	1,477	18
Cucumber	-	-
Cucumber - English	148	9
Sweet pepper	-	34
Marjoram	16	2
Ackee	5,687	1,848
Dasheen	109	-
TOTAL	390,263	844,903



TABLE 2.6
BARBADOS MARKETING CORPORATION
VOLUME OF FRESH FRUIT EXPORTED
1989 & 1990 (KGS)

COMMODITY	1989	1990
Breadfruit	27,544	36,467
Paw-paw	2,857	3,612
Mango	5,642	2,356
Water Coconut	12,778	27,644
Figs	1,161	5,391
Soursop	1,953	653
Banana - green	68	149
Tamarind	375	27
Gooseberry	11	45
Shaddock	-	102
Guava	138	49
Golden Apple	7,210	8,000
Avocado pear	2,039	2,059
Sorrel	132	133
Lime	27	-
Buffets	175	-
Bayleaf	8	-
Plums	421	-
Mammy apple	70	-

SOURCE\$: BMC's Export Packaging Unit Export Records 1989 & 1990



TABLE 2.7
NUMBER OF ANIMALS SLAUGHTERED AT ABATTOIR
(1980 - 1990)

YEAR	CATTLE/ CALVES	SHEEP & GOATS	PIGS	TOTAL
1980	1,783	3,174	10,223	15,180
1981	768	1,157	4,910	6,835
1982	1,483	1,009	10,372	12,819
1983	1,344	1,568	11,299	14,211
1984	1,081	1,112	8,735	10,928
1985	901	1,163	9,672	11,736
1986	912	1,099	11,372	13,383
1987	1,201	1,311	13,313	15,825
1988	1,191	1,221	12,752	15,164
1989	1,960	1,762	10,942	14,664
1990	2,927	2,355	15,393	20,675

2.5.4 Lessons Learnt

The problems associated with the operations of the BMC since its inception form valuable lessons for future marketing projects. These may be summarized as follows:

- conflict of objectives especially in the attempt to satisfy both farmer and consumer together with an inappropriate strategy to achieve the objectives;
- weak organizational structure for the efficient and effective performance of key tasks;
- poor policies and procedures for recruitment, selection, training and retention of capable personnel in key positions;
- fragmented, uncoordinated, unresponsive and unreliable management information system;
- insufficient finances and inadequate facilities;
- untrained staff.



With respect to BASIS, what is needed is for the policy directorate of the BMC to take a firm policy decision to upgrade BASIS to the desired facility. When this decision has been taken, the necessary steps to secure adequate financing and manpower must be implemented.

The future role of the BMC with respect to the promotion and development of agricultural exports is also a vital consideration that will require the BMC to have the capability of conducting market research in foreign markets. An expanded BASIS could fulfill this function.

2.6 Women's Programmes

2.6.1 Introduction

There are several organizations in Barbados that undertake programmes which target women as the major beneficiaries. The major organizations are:

Women in Development, Women and Development, Women's Bureau, National Organization of Women, Women's Bureau of the Ministry of Community Development and Culture, National Development Foundation of Barbados, BARNACS (as the representative of the Cooperative Movement), BMC (through its food promotion programme), BIMAP (through its small business training programmes), International Funding Agencies (through loans, grants and technical assistance to Women's Organizations (e.g. FAO/UNDP, USAID, IICA, OAS, CIDA, IADB), Barbados Horticultural Society.

A review of any of the above organizations will show that there are many actors channelling limited resources to a small segment of a large target group (the female population in Barbados in 1989 was 132,900 persons). Members of women's organizations stand to benefit directly from training programmes and projects. The membership of all the women's organizations in Barbados is estimated at 6,000 persons.



An analysis of the activities undertaken by the major organizations focusing on women was undertaken by IICA in Profiles on Farmer's and Support Organizations in Barbados. This analysis showed that there is considerable overlap in programme areas suggesting a duplication of effort. Table 2.8 shows the services provided by organizations focusing on women. In an environment of limited financial and trained human resources such efforts should be rationalized to achieve greater impact at least cost.

An analysis of the source of funding for these organizations will show that all agencies go after the same sources of finance. This uncoordinated demand will naturally force funding agencies to allocate available funds in smaller allotments to accommodate more organizations. In fact, the possibility exists that the women's organizations receiving the most funds need not be the one with the 'better' projects, rather, the one with the most persuasive proposal for funding.

The scarcity of quantitative data on the impact of programmes on women is noticeable. In formulating any future strategy to strengthen women's organizations, resources should be allocated towards an evaluation system that would generate the desired data.

TABLE 2.8
SERVICES PROVIDED BY ORGANIZATIONS FOCUSING ON WOMEN

Organizations	Information	Finance	Training	Technical Assistance	Marketing	Input Supply	Project Formulation	Networking
Cooperative Division	X		X	X			X	X
BARNACS	X	X	X	X	X	X		
Women's Bureau	X	X	X	X	X	X	X	X
WAND	X	X	X	X	X	X	X	X
NDFB	X	X	X	X				X
WID	X	X	X	X	X		X	X
BIMAP	X		X	X			X	X

Adapted from: "Profiles on Farmer's and Support Organizations in Barbados. IICA. 1991



2.7 Barbados Government - Ministerial Involvement

2.7.1 Introduction

Generally speaking, the Government of Barbados has articulated and financially supported programmes of agricultural diversification and rural development through the Ministries of Agriculture, Housing, Transport and Works, Finance and Planning (later split into Economic Affairs and Finance). These ministries have been the executing agencies for major capital projects in rural development. In addition, other ministries through various departments, have contributed towards the process, e.g. Division of Women's Affairs, Cooperative Department, Barbados Water Authority.

2.7.2 The Ministry of Agriculture

The Ministry of Agriculture, Food and Fisheries (MAFF) has been given the rather broad responsibility for nurturing, guiding, and reviewing the development of the agricultural sector. Consequently, this Ministry acts as the major arm for the implementation of Government's agricultural policy, agricultural planning, research and extension, and the execution of all large Government-sponsored agricultural projects, primarily those financed through external borrowing.

Up to the 1970's, the two major arms of the Ministry of Agriculture related to farmers were the crop research department and the extension and development division (including livestock). Technical services were provided under the Extension and Development division and these included tractor services, soil conservation, a ploughing scheme, subsidized work on government-owned gardens, irrigation, and regulatory activities in the area of love vine and rodent control. As a result of limited technical staff, and a bureaucratic system, these services were not provided as effectively and efficiently as needed. The MAFF also organized workshops and seminars for farmers related to various aspects of agriculture. Field days were set aside for the observation of demonstration plots. These activities were aimed at promoting the transfer of technology to farmers.



Following the recommendations of consultants under the Agricultural Development Project 1983-85, the technical division of the Ministry was based more on agricultural activity (e.g. livestock, crops) than on research and extension. Extension and research services are now linked to the activities of all technical personnel. This linkage has come in for both praise and criticism. Proponents of the linkage see benefits accruing from the communication between specialist researchers and farmers, whilst critics argue that specialist researchers are scarce and the time spent on becoming involved with extension and administration is a loss to research. So far, exceedingly good results have been registered.

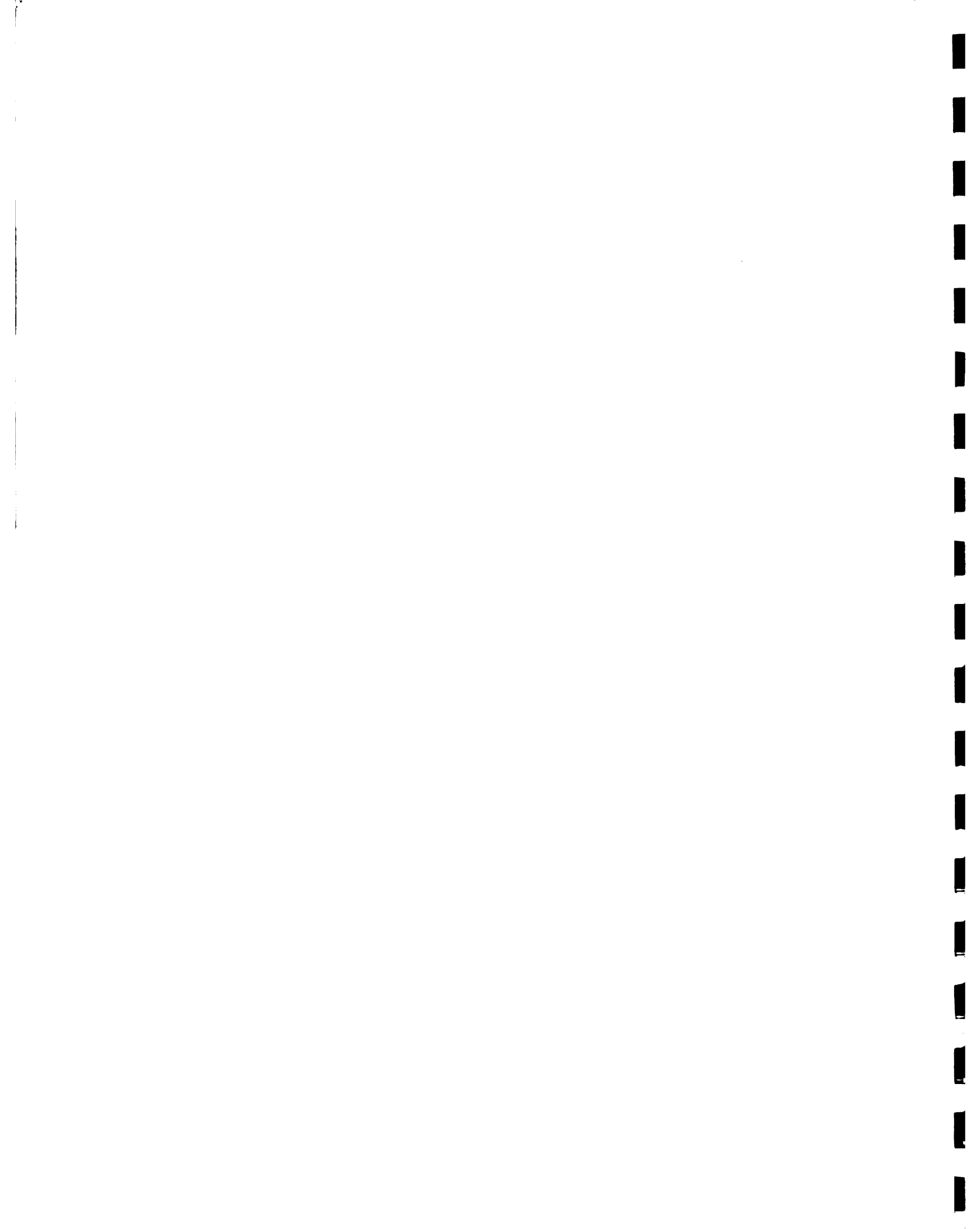
Other conclusions reached by the Consultants to the Project were:

- a) Services should be concentrated on those farmers who demonstrate a capability for growth and development.
- b) Although the services were made available to a large number of farmers, these farmers owned only a limited amount of acres of arable land and therefore could make no meaningful impact upon national agricultural results.
- c) There was no need to have a researcher at one end of the process and an extension officer dealing with the farmers at the other end.

Over the past 15 years the Ministry of Agriculture has spent some \$200 million as capital expenditure (including the major rural agricultural projects) yet agriculture's contribution to the economic development has declined in importance when compared to other sectors. Food imports jumped from \$49.2 million in 1970 to \$162.3 million in 1982 and \$209.4 million in 1990.

2.7.2.1 Issues

The hierarchical decision-making structure of the Ministry, along with its associated red tape related to forms, accounts, rebates, etc. has continued to plague the provision of services to farmers.



Secondly, the services require too much involvement from the technical personnel of the Ministry. It is now felt that these services could be carried out by a restructured BADC.

Thirdly, the tractor ploughing services offered by MAFF are limited to the Scotland District only. In many instances, land reclaimed under the soil conservation process has not been put to use. Some lands owned by Government are not getting into the hands of farmers to be worked.

Given the research-extension link established by the MAFF, the extension services provided by BADC should be transferred to MAFF since such services necessitate the use of research. The BADC should concentrate on providing services with at least break-even capabilities.

In the area of livestock rearing, the problem of over-grazing has revealed the need for farmers with land to get into livestock, and the need to have a feed centre established on the island.

One other important service provided by the MAFF is the hay and silage production service under the Grassland Scheme. Under this scheme, farmers have the ability to hire machinery and equipment to be used for the making of hay and silage. However, this equipment has proven to be expensive and therefore, out of the reach of the small farmer.

In the area of livestock, a contradiction has emerged. Land-starved farmers, having no land to cultivate, are oriented towards the keeping of livestock which overgraze on reclaimed land. Legislation has now been introduced to stave off the menace posed by overgrazing livestock but it is felt that such legislation will effectively reduce the livestock population by 60% unless new entrepreneurs enter into commercial livestock production on some of the unused/idle lands now available.

Finally, the provision of services by the Ministry of Agriculture will have to undergo drastic rationalization given the new policy of participation and reduction of government intervention in the market place.



2.7.3 The Ministry of Housing

The Ministry of Housing has contributed to the process of rural development through its allocation of funds towards costs arising from the provisions of the Tenancies Freehold Purchase Act 1980 under the Plantation Tenancies Scheme. These funds have been used to cover the administrative expenses for the operation of the scheme and expenses associated with the transferring of house spot ownership within Plantation Tenancies to occupants of those spots. Additionally, the Ministry of Housing has channelled funds towards relocation and development costs of agricultural holdings in tenancies where such exist under an urban improvement scheme.

Before 1980, the law required more than 5 houses to constitute a tenantry. The Tenantry Freehold Purchases Act (TFHP) (1980) declared that two houses or more would constitute a tenantry and tenants who had been on the same rented spots for 5 years or more were now protected from eviction. More importantly, the Act provided for tenants to purchase their rented lots in plantation and non-plantation tenancies.

By 1981, the Ministry of Housing and Lands had established a unit to implement the provisions of the Act. Immediately after, discussions were held with the Bar Association and the Land Surveyors Association in an attempt to have legal and surveying services provided to the tenants at nominal fees. A number of land surveyors agreed to survey the lots for the Ministry of Housing outside of their customary scale of fees and this agreement formed the basis of a workable process. Firstly, the landlords requested a survey of the lots to be carried out, the Ministry of Housing then carried out social surveys (to determine names of tenants, addresses, etc.), and after that, invited the surveyors to look at the lots. The surveyors submitted their lot plans and key plans to the Ministry of Housing which then sent them on to the landlords for legal handling.

2.7.3.1 Impact

The surveying aspect of the process worked well and during the period 1981 - 1990, over 5,500 lots had been surveyed. However, only 2,500 cases had fully completed the legal process.

2.7.3.2 Problems

By virtue of the provisions of the Tenantry Freehold Purchase Act, fees payable to lawyers under the Act were set by Government. The lawyers had firmly believed that the current rates established by Government were too low and have therefore not participated meaningfully in the legal process of implementing the provisions of the Act. Government had already subsidized the surveys carried out by surveyors, and felt that the lawyers should play their part in a process aimed at executing the provisions of the Act in a low-cost manner to tenants.

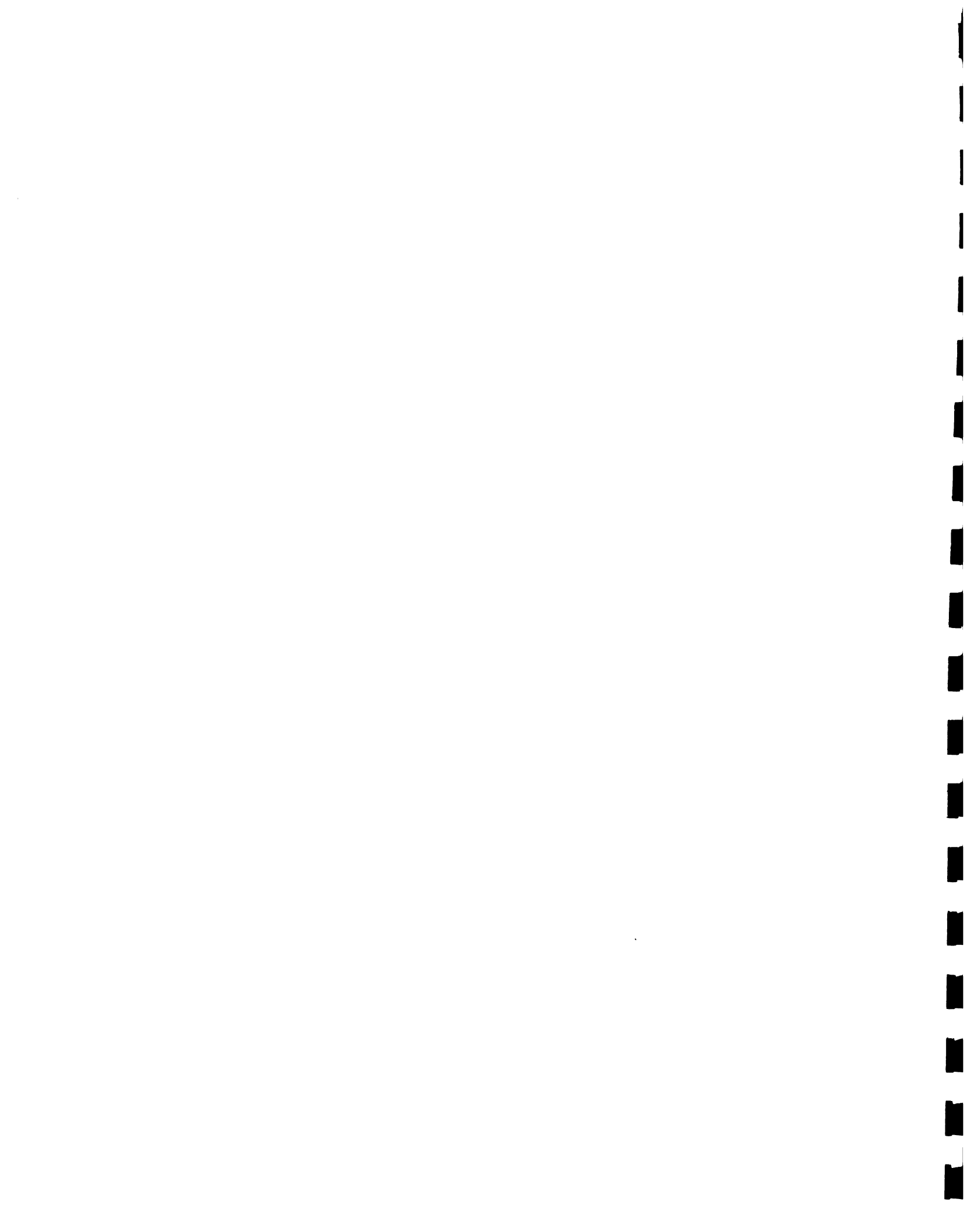
The low participation rate of lawyers in the programme is still a serious problem and efforts should be made to find a solution acceptable to both Government and lawyers.

2.7.3.3. Agricultural Holdings Option to Purchase Act (1982)

The Tenantry Freehold Purchase Act (TFHP) had focussed its attention on house lots. There were, however, many tenants who rented land well away from their homes and the Government felt that such persons should have rights similar to those under the Tenantry Freehold Purchase Act. The Agricultural Holdings Options to Purchase Act (AHOP) (1982), gave tenants the right to purchase rented agricultural land. Government paid the surveying costs and it was left to landlord and tenant to determine the price of the land.

2.7.3.4 Housing Credit Fund

The Ministry of Housing manages the Housing Credit Fund (HCF), a revolving fund which seeks to channel credit funds towards low-income earners to



help them purchase land, improve homes, and buy lots under the TFHP Act. The Fund lends money to various financial institutions (banks, credit unions, trust companies, mortgage houses) for on-lending to target groups. It was originally set up with a US\$10 million loan under the USAID Housing guarantee programme and at the end of 1990, the fund's assets were in excess of BDS\$40 million.

2.7.4 The Ministry of Transport and Works

The Ministry of Transport and Works implements directly and on behalf of other Ministries rural infrastructure projects mainly roads, bridges and schools. During the period under review, this Ministry implemented the Tenantry Road Project for the Ministry of Housing, constructed farm access roads under the Rural Development Project on behalf of the BADC, supplied irrigation mains to the Spring Hall Land Lease Project and is assisting with the test-pumping of wells under the Three Houses Irrigation Project.

2.7.5 The Ministries of Finance and Economic Affairs

These Ministries are usually the liaison Ministries between Government and the international funding agencies. These Ministries ensure that the conditions of project loan agreements are acceptable to Government, that financial accounting and implementation reports are prepared and submitted and they monitor the progress of project implementation. In addition, the Ministries of Finance and Economic Affairs evaluate the claims for any cost overruns and through its Public Investment Unit prepares and submits reports on projects to Cabinet through Central Planning Committee (a joint committee of Cabinet and Technical Officers).

2.7.6 Ministry of Trade

2.7.6.1 Division of Cooperatives

The Ministry of Trade contributes towards the rural development process by way of its Division of Cooperatives. The Cooperative Department is responsible for



overseeing all legal and technical aspects of the registered Co-ops and friendly societies on the island. This includes the registration of societies, the preparation and adaptation of by-laws, the supervision and inspection of registered societies, the settling of disputes and the liquidation of the groups, and the auditing of the societies' books. The Department also plays an active part in the education of the general public in order to encourage the acceptance and formation of new Co-ops.

At March 1991, there were 75 registered Co-ops in Barbados of which 48 were credit unions and 7 agricultural cooperatives reporting 154 members. Despite the small number of agricultural cooperatives, the cooperative movement through the credit unions contributes to the development of agriculture given that most credit unions provide loans for agricultural activities (small farming).

The cooperative movement is subsidized directly and indirectly by the Government. Through the Ministry of Trade, the Cooperative Division receives an annual subvention (about \$200,000 per annum) for its operating and administration activities. In addition, other fiscal incentives and concessions are provided to cooperatives.

2.7.6.2 BARNACS

For many years, the co-operatives of Barbados operated in isolation. Any contact between the different groups within the co-operative sector was minimal. On March 19, 1981, BARNACS was officially formed and from the outset it was intended that the organization should become the national umbrella body of all cooperatives in Barbados, and should promote the interest of and play a development role in the cooperative sector.

Since its creation, the emphasis of BARNACS has shifted and the organization now focuses its support services on the non-credit union and non-financial sections of the co-operative movement. However, the original goal of promoting the co-operative sector into a strong, self sufficient movement and assisting its members in all aspects of their operations still remain intact. At present,



BARNACS provides services in management of investments, accounting and education.

BARNACS' biggest problem stems from a lack of working capital. Given its insufficient budget, the association has not been able to provide enough funding for projects aimed at benefiting its affiliate members. Attempts by its Development Fund to issue loans at non-commercial rates have seriously affected the organization's operational capabilities.

Another problem originates from the fact that international organizations and Government sometimes bypass BARNACS and its cooperative umbrella structure and work directly with primary societies. This approach does not encourage members to work with BARNACS for the attainment of long term goals. A third problem originates from the fact that international organizations, especially those providing volunteer staff, often provide specialists to carry out duties for the duration of a project's term, but fail to train individuals in the community to carry out the tasks after the project is completed and the specialists have left. As a result, projects come to a halt because no one is left to manage them.

Given its problems and experiences, BARNACS has decided to concentrate its attention on three non-credit cooperatives with one each coming from the transport, consumer, and agricultural sectors. It is hoped that by giving adequate attention to such areas, a few successful examples will result which will serve to attract and encourage more involvement in the co-operative movement.

2.7.6.3 Issues

The Division of Cooperatives and BARNACS are both umbrella organizations providing services to member organizations. It is evident that in both cases some of the representative member organizations are generally stronger/more vibrant (financial, human resources) than the Co-op Division or BARNACS. Where this occurs it is natural to expect that the member organization would by-pass protocol and introduce projects and programmes that should be provided by their umbrella



organization. For future impact to occur, required services need to be prioritized by both the Division of Co-ops and BARNACS and strengthened to the point where members seek them out.

There seems to be a need for greater coordination of training of Co-op members and the general public. The umbrella organizations are not equipped to provide sufficient training but might be better placed to coordinate this activity.

Both of these umbrella organizations receive a subvention from the Government, when this is reduced or eliminated survival as an organization could become a major problem.

2.7.7 Ministry of Community Development and Culture

The Ministry of Community Development and Culture contributes towards the rural development process through the Bureau of Women's Affairs. The Bureau functions as a policy formulator, and adviser for all organizations working to further women's development. It also serves as a liaison to local, regional and international organizations dealing with women's affairs, and it provides and receives technical assistance services.

The Bureau is staffed by a Director, a Research Officer, and a Clerk, a complement that is inadequate to execute any major programmes/projects among women in Barbados. Furthermore, this size of staff is a constraint in working with the numerous women's groups/organizations which are pursuing major development programmes for women, e.g. WID, WAND.

The impact of the work of the Women's Bureau in Barbados has not been very visible of late because the Bureau is no longer involved directly in physical projects (e.g. Bajane Producers 1980 - 85). Also, other women's organizations engage in aggressive public relations and so attract more public attention.



The role of the Women's Bureau could be greatly enhanced and be more meaningful if it was accorded a greater priority and status by the political directorate. This was not granted since the Bureau's inception in 1976 and is unlikely to be achieved now that Barbados has adopted an economic austerity programme. As a result, the future of women's programmes, especially in rural development, will have to come from the non-governmental organizations.



SECTION 3 - REVIEW/EVALUATION OF RURAL DEVELOPMENT PROJECTS

3.1 Introduction

In this Section, the Study presents a summary review of the major rural development projects undertaken during the past two decades. The body of the text presents a summary of the project description, impact, implementation problems and lessons learnt. Appendices 1 and 2 gives a more detailed review and evaluation of the two major rural development projects in Barbados. Appendix 3 gives a bibliography of the project documents and other literature researched for this Study.

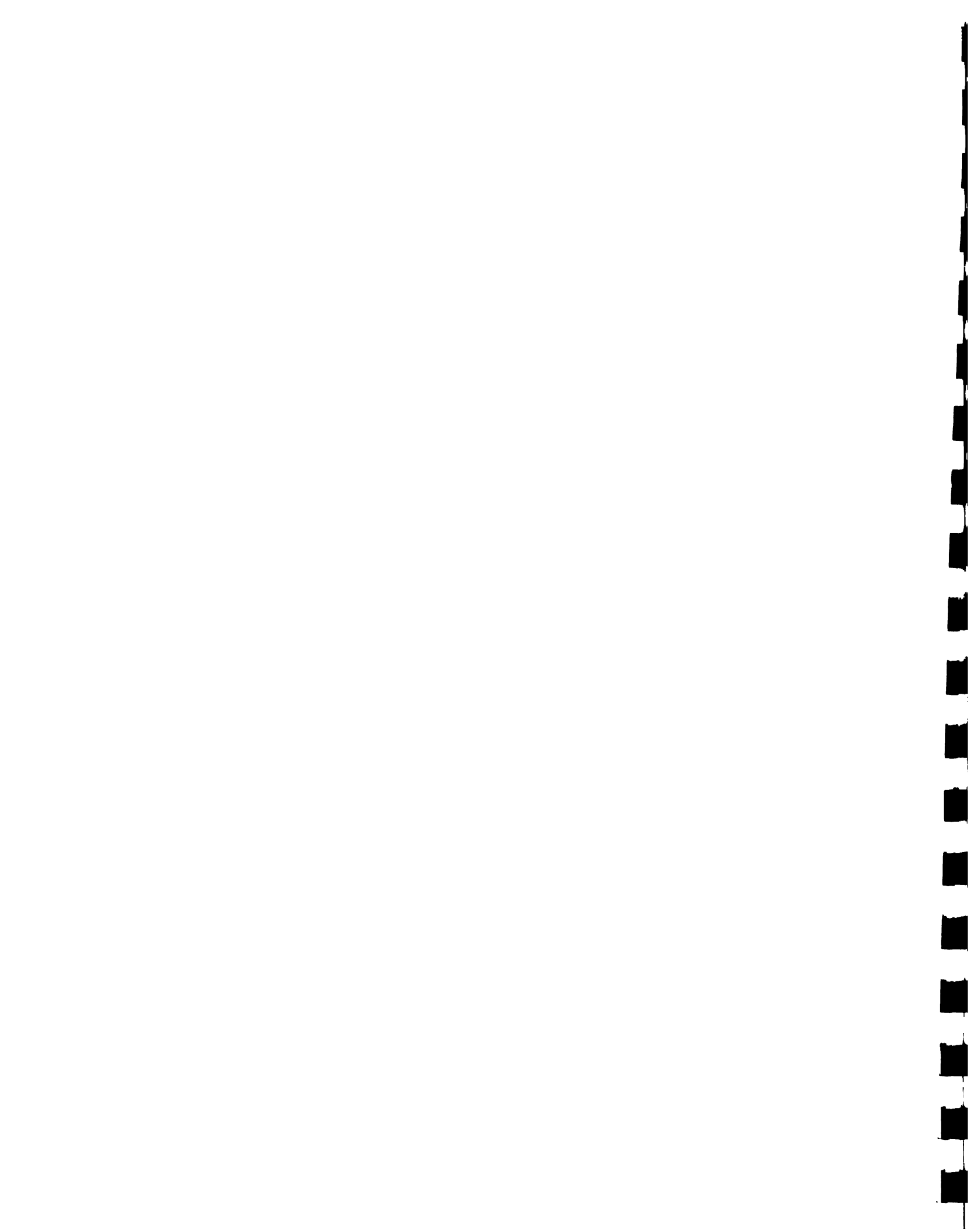
3.2 Spring Hall Land Lease Project (SHLLP)

This is a land settlement project that was conceived by the Government in the early 1970's. The project was formulated and presented to CDB for funding in 1979 (the loan was approved on August 23, 1979). The project was aimed at developing 402 acres of land in St. Lucy for settling 22 farmers who would produce sugar cane, food crops, other economic crops and livestock produce for local and export markets.

The units were to be leased for a 30 year term with renewal options. The farmers were to reside on their farms and funds were made available for housing loans through the Barbados National Bank.

Each of 20 farms were to be provided with irrigation facilities while the other two farms were to be provided with dairy buildings and equipment. A Central Management Facility was to provide training, agronomic expertise, assistance in farm planning and marketing, irrigation scheduling and arranging the rental and operation of an equipment pool for the tenants.

The executing agency was the BADC who appointed a Project Manager. The total project cost at project appraisal was US\$1.2 million. The actual was US\$2.23 million and there were cost over-runs of US\$1.1 million. The CDB approved \$0.92



million and the Government of Barbados \$0.24 million. The project at appraisal was scheduled to start in January 1980 and to be completed in December 1981. It actually started in August 1980 and was completed in August 1988.

The major issues associated with project implementation were a significant cost overrun, inappropriate design of tenant housing, too large size of plots, non-acceptance of sugar cane as a preferred crop by tenants, inability to recruit suitably qualified tenants, inappropriate and inadequate irrigation technology, lack of adequate marketing outlets and insufficient technical staff in management.

Among the lessons learnt from this project are:

- i) a rural development project should clearly define its target group, canvass their views and with their participation design components that would be acceptable to the beneficiaries;
- ii) choosing the right Executing Agency is an imperative if Project Management is to provide crucial advisory services to the participants;
- iii) more time should be spent in planning at project formulation stage, e.g. choosing appropriate technology, design of appropriate housing, determination of appropriate plot size, identification of most profitable crop combinations, identification of market opportunities;
- iv) the design of a rural development project should take into account the socio-cultural (community) aspects of the project to allow interaction of the project with the community.

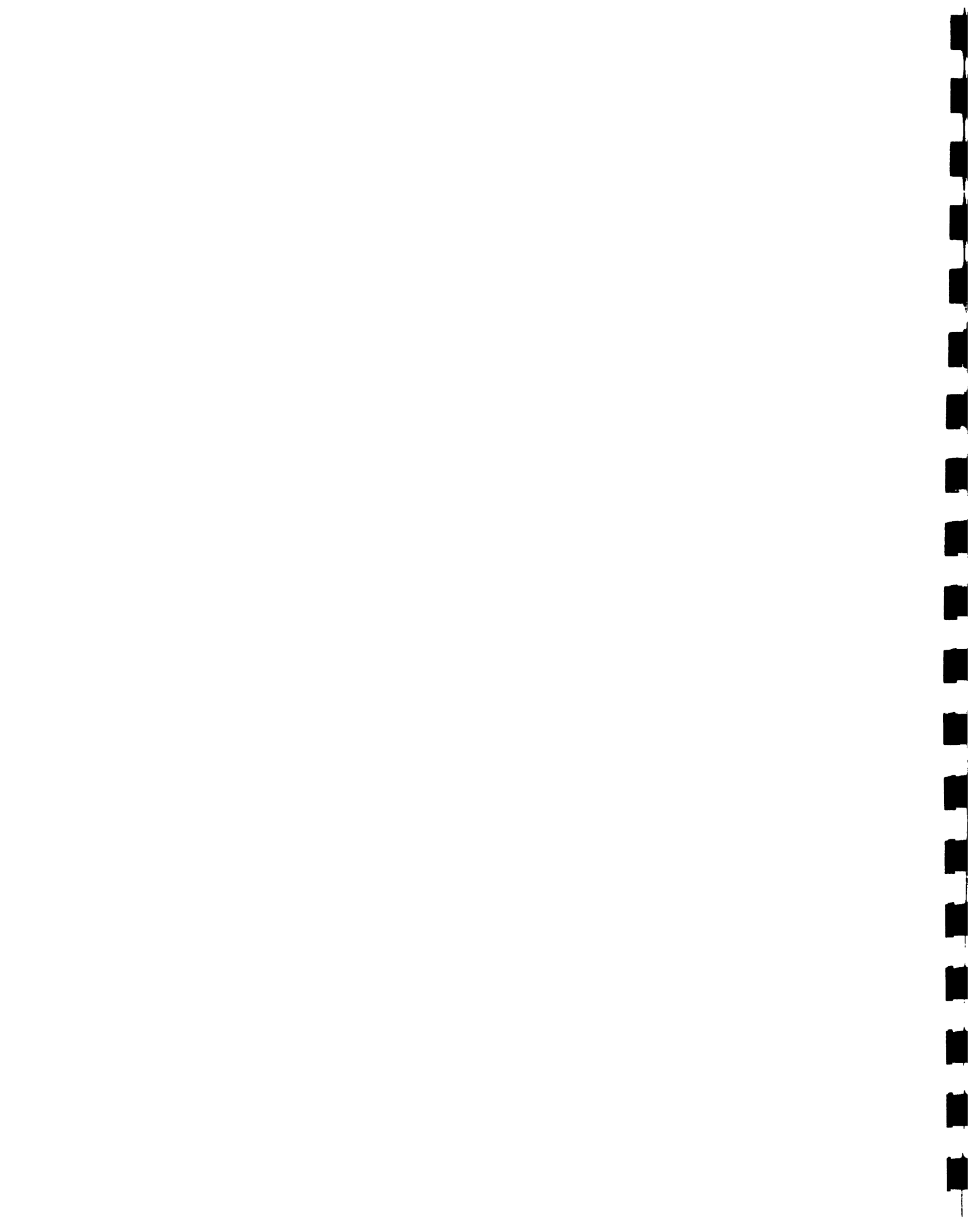
3.3 Rural Development Project

3.3.1 Introduction

The Rural Development Project (RDP) was conceived and formulated during the 1977 - 1979 period and underwent several changes before it was finally approved for funding by the Inter-American Development Bank.



SECTION 3 - REVIEW/EVALUATION OF RURAL DEVELOPMENT PROJECTS



3.3.2 Objectives

The RDP was designed to:

- a) "increase agricultural diversification and increase food production in Barbados to supply the domestic and tourism demand for foodstuffs;" and
- b) "raise the productivity and incomes of those small farmers, both tenantry and smallholder families participating in the project; and moreover, in the case of tenantry families, to provide a legal and institutional mechanism to permit them to acquire the lands on which they reside."

3.3.3 Project Components

The RDP consist of two (2) major sub-programmes and a Technical Cooperation Agreement component. The sub-programmes are:

- a) an infrastructure and agricultural services sub-programme of multiple works; and
- b) a credit sub-programme.

3.3.4 Implementation

The RDP was implemented over the period 1980 - 1986 in two distinct phases - Phase 1 and Phase 11 ending October 1986. The major activities which characterized Phase 1 of the project included:

- appointment of a Project Manager and Project Execution Unit's Staff including Extension Officers;
- appointment of Consultants under the Technical Cooperation programme;
- acquisition of cultivation equipment and project vehicles;
- identification of 22 development units of which 11 units were in irrigated areas. The selection of these units was based on the revised set of criteria;
- the approved and reformulated RDP by Government and the IDB.



The major activities which characterized Phase 11 of the project included:

- completion of all stages of irrigation infrastructure;
- construction of tractor storage facilities at Groves and Spencers and construction of a vegetable vending facility at Glebe;
- selection and construction of about 4 miles of feeder roads;
- installation of potable water to some 127 households.

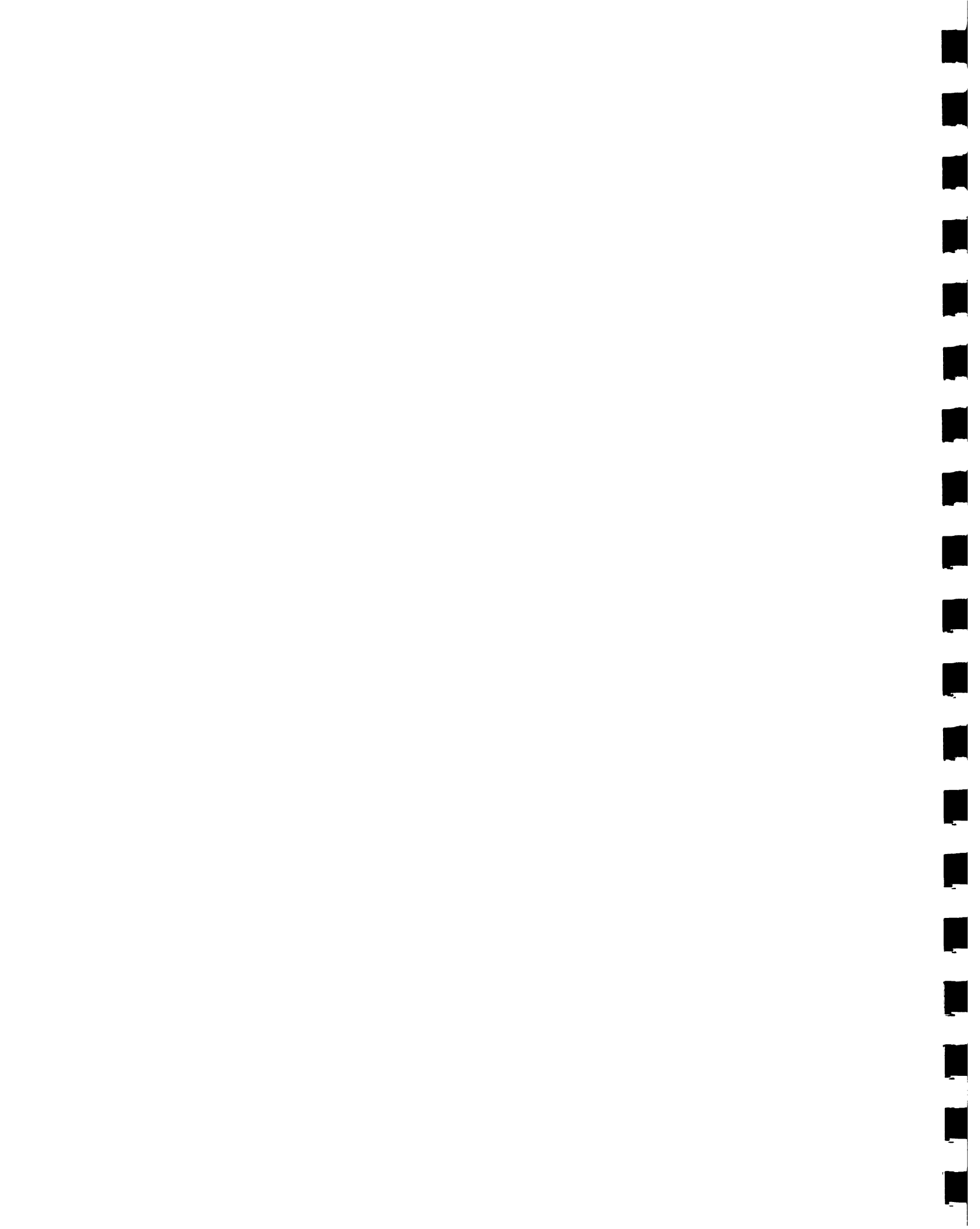
3.3.5 Selection Criteria

The selection criteria required among other things, a minimum level of participation with respect to both irrigated and rainfed units and security of tenure for farmers. It should have been evident from the socio-economic survey that the minimum participation level required would have been difficult to achieve. Furthermore, it is widely accepted that high levels of rented units exists among the small farming community. It would appear that these two key variables were not fully taken into account in the formulation of the selection criteria for the RDP.

In general, the RDP would have been better served if a comprehensive feasibility study had been undertaken to identify and select the specific farm units for the project. In so doing, the time and cost overrun incurred would have been considerably less and implementation less problematic.

3.3.6 Irrigation

Phase 1 of the irrigation installation was executed with minimum difficulty to the project itself. Conversely, Phases II and III of the irrigation component were more problematic for many reasons. In the first instance, the successful contractors did not possess the relevant experience in this type of work and this operated to the detriment of the project. Secondly, severe weather conditions and the failure to examine and give approval to the execution of certain works (e.g., trenches being dug for irrigation pipes) did not assist in the timely implementation of this component. Thirdly, the undertaking of approved variations to the specifications was



bound to extend the implementation period. Fourthly, there were design inefficiencies in some of the pump systems.

3.3.7 Feeder Roads

The programme at formulation stage, envisaged the construction of short internal feeder roads in certain development units where access was particularly difficult. Some 3.67 miles of road were constructed/upgraded. The ratio of roads in rainfed areas to those in the irrigated areas was approximately 1:2. The roads were constructed by a private contractor. The allocation to this component in the financing packet caused or resulted in the construction of a standard of road which was well below the norm for the road system of Barbados.

3.3.8 Tractor Cultivation

In evaluating the cultivation equipment on the project, there are several points that merit some mention:

- the ratio of 4-WD to 2-WD tractors has created limitations on the amount and quality of ploughing. It should be noted that 4-WD tractors are more suited for ploughing operations although on several occasions the 2-WD tractors had to be used. This resulted in a lower quality of cultivation to farmers;
- the range of tractor models existing on the project is a further cause for concern. This has resulted from the type of tendering system used, that is, selection based predominantly on price. This practice has resulted in the project being burdened with an obsolete tractor model and models with agents having inadequate service/parts supply records. The above has resulted in tractors being in the workshop for extended periods.

The quality of cultivation achieved by the RDP was one of the variables found to be an issue during the evaluation. On the one hand, the farmers suggested that the RDP tractor operators were not fully trained or competent with cultivation



operations while on the other hand, the RDP management suggest that a high proportion of small farmers' soils are shallow and stony and hence difficult to cultivate properly.

In general, the majority (75% of the sample survey) of the project farmers who use the tractor cultivation scheme were satisfied with it as a service. However, there were several complaints about timeliness of the supply of the services.

3.3.9 Extension

The Extension Unit comprised a Chief Extension Officer and 8 Officers, one of whom was assigned exclusively to marketing and was designated Marketing Extension Officer.

The nature and method of implementation of RDP required the involvement of the Extension Officer in a range of activities not related to production on the farm. Based on the information provided by the Project Consultants, it is noted that as much as 40% of the Extension Officers' time was allocated to non-farm (even through project related) activities, and of the remaining 60% only 18% related directly to general extension through farm visits.

The information under review would indicate that while the development of the project was heavily dependent on the Extension Staff, the extension support to farmers was insufficient.

3.3.10 Institutional

The Executing Agencies for the RDP were designated in the Project Report as the BADC which would execute the infrastructure sub-programme and the BNB which would execute the credit sub-programme.

Of interest to the re-organizational structure of the BADC was the assigning of responsibility for final accounting for counterpart expenditure on these small farmer projects to the Permanent Secretary - Special Assignments Unit of the



Ministry of Agriculture, Food and Fisheries, while the BADC was renamed the legal Executing Agency for the RDP.

Whereas it does not appear that this shared responsibility for the RDP contributed to any delays in project implementation, it is an incongruity which could adversely affect decision-making and should be avoided in the future.

3.3.11 Consultants

The task of the Consultants hired under the technical cooperation agreement to assist in the implementation of this project was always going to be difficult. The failure to conduct a proper feasibility study and the consequent selection of unrealistic criteria contributed to this difficulty. Nevertheless, the Consultants performed creditably under these conditions especially in the areas of engineering and agronomy. It is also to the Consultants' credit that they saw the need for and recommended reformulation of the project in the interest of the national objectives. This notwithstanding, the Consultants at times and perhaps inadvertently went beyond the limits of their authority on the project and made decisions on matters on which project management should have taken the lead. In some cases, the decisions taken did not operate in the best interest of the project.

3.3.12 Contracts/Contractors

The implementation of the RDP required the extensive use of contract services. In evaluating the system of procurement of services, it became evident that the selection criteria were not always meticulously applied in obtaining contractors. It would appear that the criterion of price was more heavily weighted vis-a-vis that of technical competence.

For future projects, especially with specialized components, where skills and experience are not readily available, care must be taken to ensure that these requisite parameters have been achieved even at the expense of price.



3.3.13 Project Cost

A. Overview

The final (actual) project cost given as US\$5,589,419 is only 11% less than the original appraisal estimates of US\$6,300,000. The margin of difference is even smaller if a more accurate allocation of the cost of preliminary feasibility studies and of accounting services could be identified.

The small difference between the original and final costs, however, does not reflect the large cost variations between the projected and final costs of some components nor the scope, timing and duration of the project activities. In addition, there were two separate revisions to the budget where there were reallocation of costs among some cost components.

The implementation of the RDP took place over a period of 6 years (1980 - 1986) instead of the 4 years initially envisaged. There were variances in the phasing and duration of activities which had implications for cost escalations. In reviewing the cost estimates, it was observed that the cost of the Technical Assistance component was not reflected in the original project costs.

B. Project Impact

The evaluation survey shows that before the RDP, only 29.6% of the farmers utilized extension services, 4.2% used credit and 50.7% used tractor services. With respect to the use of water for irrigation, 90.1% of the farmers sampled irrigated with domestic water supply.

After the introduction of RDP there was a significant increase in the farmers' use of these services. The data showed that 87.5% of the sample made use of extension, 32.4% utilized credit and 81.7% engaged the tractor services of the project. The use of domestic water for irrigation in the sample declined in response to the availability of the irrigation system under RDP. In fact, of the farmers sampled from the irrigated units, 8.1% used the irrigation system.



3.4 World Bank Agricultural Development Project

3.4.1 Background

The diversification project underlined the urgent need to deal with the fundamental problems facing the Barbados agricultural sector. These problems were defined as follows:

- excessive dependence on sugar cane;
- declining profitability of sugar cane;
- rapid increase in food imports; and
- weak institutional coordination and linkage.

In the light of the decline in local sugar production it was seen to be imperative that Barbados carried out policies designed to promote the expansion of non-sugar commodities.

The diversification project funded through a World Bank loan, was implemented in 1983 by an Israeli firm - Agricultural Development Company Limited. After the two years duration the project was extended for one year, funded by the Government of Barbados.

3.4.2 Objectives

The project objectives were set in line with the goals laid down in the Barbados Five Year Agricultural Development Plan - 1983 - 1988. The major objectives of the project were:

- to reduce payments made for agricultural imports and to increase the agricultural export earnings;
- to improve farm incomes as a means of raising the standard of living of the agricultural community;
- to ensure a fair return to the farming community;
- to stabilize the agricultural employment trend.



3.4.3 Components

The main components of the agricultural diversification project were as follows:

- diversification of agriculture through the introduction of new high value crops and varieties, and a more efficient utilization of the resource base;
- strengthening and up-grading the institutional system and supporting services, such as agricultural extension, research, training and marketing;
- setting up a number of sub-projects designed to provide new technology and equipment needed to facilitate attaining the project goals.

The following sub-projects were identified: training facilities and the information unit; the establishment of a central demonstration plot for peanut production; upgrading of agricultural marketing facilities; irrigation and fertilization field trials and demonstrations.

One of the principal activities of the project was the establishment of an effective system of agricultural extension aimed at enhancing production. The extension and training components lay at the core of the diversification project.

In total, some 142 man-months were designated to the project for technical assistance. This was broken down according to the various disciplines as follows:



Long and Medium Term Assistance

<u>Subjects</u>	<u>Man-Months</u>
Agricultural Extension and Project Leader	24
Vegetable Production	22
Irrigation and Fertilization	18
Marketing	18
Farm Mechanization	12
Livestock Production	12
Cotton Production	6
Peanuts Production	6
Silage Production	4
Training	<u>4</u>
TOTAL	<u>126</u>

In addition to this, some 16 man-months were designated for miscellaneous short-term assignments.

3.4.4 Cost and Funding

The total cost of the agricultural diversification project over the three year implementation period (1983 - 1986) was \$5.24 million of which the World Bank through loan funds contributed \$3.47 million or 66% and the Government of Barbados the additional \$1.77 million. Of the total project cost it is estimated that \$3.79 million or 72% were utilized for the payment of the Consultants.



Analysis

The activities of the project as implemented included the following:

- Agricultural Extension Activities. The major activities of the extension component included in-service training programmes for extension officers and the provision of equipment for the information unit.
- Crop Production Activities. Focus of concentration was placed on the introduction and improvement of selected vegetables, peanuts and cotton. Activities included the introduction of improved production techniques and new varieties, sub-regional crop specialization, the establishment of adaptive research programmes and an improvement in the effectiveness of the extension service.
- Irrigation and Fertilizer Activities. The irrigation and fertilizer activities concentrated on specific functions and activities related to water resources development. In particular, the component focused on establishing demonstration plots on farmer's fields based upon drip irrigation; strengthening the extension soil/water laboratory to enable the carrying-out of soil, water and fertilizer analyses.
- Livestock Activities. The livestock activities concentrated upon the development of the dairy herd and the production and introduction of silage.
- Agricultural Marketing Activities. The marketing activities related to both the export and domestic markets. The export activities concentrated on developing the potential for entering the British market. Local market operations included the planning of a programme to promote the consumption of vegetables and the preparation of post-harvest training materials.



- Farm Machinery Activities. The farm machinery activities included the design and evaluation of a farm machinery survey and the planning of a training programme for machinery operators and mechanics.
- Training Activities. The training activities included the design of in-service training programmes, on-the-spot training courses (agricultural machinery), on-the-job training for extension officers and specialized training programmes abroad.

Project Impact

It may be concluded that the major impact of agricultural extension was to increase the awareness of the farming sector to agricultural diversification and to reduce any resistance to change.

The impact of the project can ultimately be measured at this stage of implementation by the volume and value of non-sugar agricultural production exports and by any increased yields achieved. As a result of the diversification project, exports of non-sugar crops have increased, non-sugar GDP has increased and crop (peanuts, tomatoes, cotton) yields have risen.

A number of institutions providing supporting services were strengthened through the introduction of new improved facilities and equipment, modifying the organizational structure and upgrading personnel through the design of training programmes.

With respect to marketing, the project made recommendations concerning the export and domestic marketing systems.

3.4.5 Lessons Learnt

While the agricultural diversification project has indeed provided several benefits to the development of agriculture in Barbados, the implementation and management of these were serious areas of weakness. In analysis, it can be noted

that not all of the components received the level of evaluation and attention expected of the project. Marketing can be identified as one such area. It is very clear that the screening and evaluation mechanisms of the Consultants were missing. Indeed, some Consultants were allowed to remain on the project even though their contributions were recognized to be inadequate.

The fact that the project never became fully integrated into the functioning of the Ministry must be considered another major weakness. To some extent the non-performance of the project's steering committee would have been the primary reason.

The diversification project, because of the number of Consultants used (over 20) appeared to have the effect of suppressing the initiative of the local staff. It is hoped that future projects would take this issue into account at both the formulation and implementation stages.

3.5 Three Houses Irrigation Project

3.5.1 Background

This Three Houses Irrigation Project is one of the sub-projects emerging from the World Bank Agricultural Development Programme.

The World Bank Agricultural Development Programme had funded a study (at a cost of US\$72,000) which examined the irrigation potential of the Three Houses area in the parish of St. Philip. Arising out of that study were recommendations about alternatives for the development of Spring Water for irrigation purposes and suggestions with respect to the development of the ground water potential within the catchment area. This project is still very much in the project formulation stage and the final design will emerge as the project progresses.

The present project (phase 1) focusses its attention on the development of the ground water potential and five (5) wells have been identified as potential providers of irrigation water.



3.5.2 Objectives

The objectives of the initial phase of the project are:

- a) to fully develop the 5 wells identified in the Three Houses area so that all farmers in the vicinity are provided with irrigation potential; and
- b) to promote the efficient use of the irrigation facilities developed in the area with a view to improving farm incomes and expanding non-sugar agricultural exports within the agricultural diversification programme.

3.5.3 Project Components

The project involves the development of five (5) wells which are grouped into three units as follows:

1. Brathwaite/Cumberbatch/Nicholson
2. Mahabir and Mulling
3. Power

The other three phases of the project will include:

- a) the development of the distribution system;
- b) the development of 51 wells;
- c) proper canalization of stream, construction of overnight storage and the reservoir at the end of the stream.

The Brathwaite/Cumberbatch/Nicholson Unit will be connected to, and whenever necessary, supplemented by water from the already existing BADC-RDP Ruby-Jezreel Unit. Only one well, the Brathwaite well, has been test-pumped to date. The results have shown that this well can be of great use to the farmers for irrigation purposes.



3.5.4 Executing Agency

The Ministry of Agriculture is the executing agency for this project and has appointed a Project Manager to coordinate for this purpose. However, given the extent of irrigation use of the project; collaboration is necessary with the BADC-RDP Irrigation Unit and the Barbados Water Authority. A private contractor may be sub-contracted to implement some of the activities of the project.

3.5.5. Cost

The total cost of the project is estimated at \$491,700 with Year 1 activities accounting for \$173,800 and Year 2 \$317,900.

3.5.6 Project Impact

This phase of the project when fully implemented is expected to benefit 70 small farmers whose plots are within a catchment area of 162 acres. In Year 1, irrigation will be provided to 24 farmers on 62 acres. The system will comprise: a water metre, a hand valve to control the water supply and a riser on which will be connected the drip/sprinkler irrigation equipment.

Implementation of the project is expected to extend over the 1992/93 and 1993/94 financial years and the total costs, farmers or plots involved, and acres covered are shown in Table 3.1.

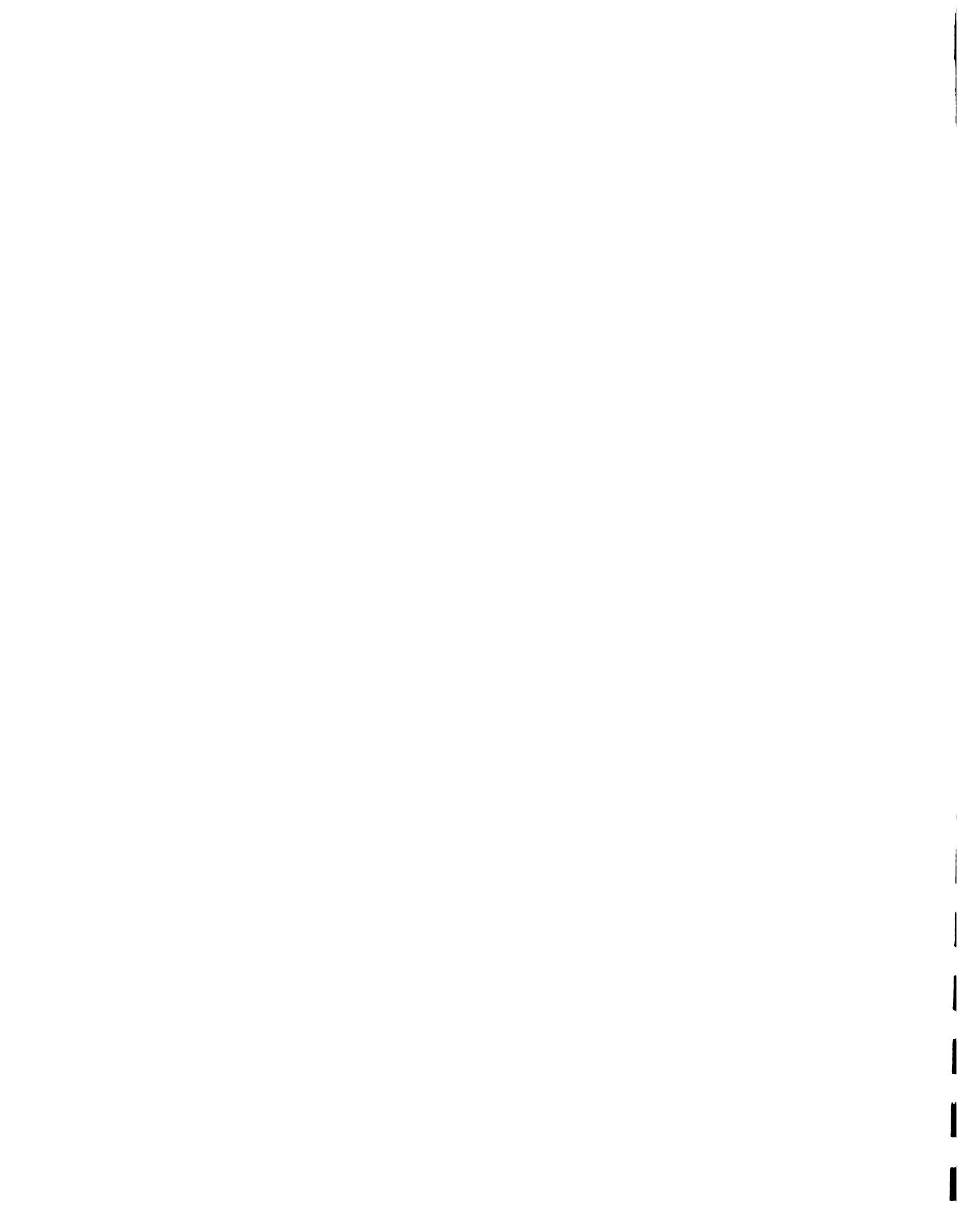


TABLE 3.1 PROJECT BENEFICIARIES				
Item	YEAR 1	YEAR 2		TOTAL
	Brathwaite/ Cumberbatch/ Nicholson	Mahabir/ Mulling	Power	
Total Capital Cost (Bds\$)	173,800	172,370	145,530	491,700
Number of Plots/farmers	24	18	28	70
Area Covered (Acres)	62	55	45	162
Capital Cost per Acre (Bds\$)	2,803	3,134	3,234	3,035

3.5.7 Problems

Although the project has not yet been implemented, there are some potential problems which have surfaced as a result of test pumping the Brathwaite well. To alleviate the flooding which heavy rains in the vicinity of the Brathwaite well usually cause, it is necessary to maintain that well as a suck well. If the well is to be used for irrigation purposes also, then it must be protected from sediments brought along by run-off water. Pumping must be suspended after heavy rains since the silt would damage the equipment. Additionally, all electrical and other vital equipment must be located out of areas prone to flooding.

3.5.8 Post-Implementation Management

After the implementation of the project, that is, the development of the three irrigation systems by the Ministry of Agriculture, the post-implementation activities will fall to BADC. The irrigation development unit of BADC will take over the maintenance of the system and the collection of fees from farmers for the use of water. The Ministry will provide funds in its annual estimates to be transferred to BADC for the up-keep of this irrigation service.

BADC will also be asked to provide extension support to farmers in the Catchment area.



3.5.9 Lessons Learnt

This project is still very much in the design phase and so any mistakes are being rectified as implementation progresses. However, there is no indication of the extent of involvement of the beneficiaries in this process. Efforts to quantify the benefit in terms of farm output and incomes should be undertaken and a formal monitoring and evaluation system installed. As a first step, a base line study among the beneficiaries is needed.

Any activity involving the use of natural resources such as irrigation water should be monitored for its environmental impact.

3.6 Barbados Agricultural Development Corporation's Mechanical Cultivation Services

3.6.1 Background

With an eye towards agricultural diversification, the Government of Barbados established the Barbados Agricultural Development Corporation (BADC) in 1965 through an Act of Parliament. From its inception, the BADC was earmarked for the carrying out of both developmental and commercial duties and successive Governments have used the BADC to develop and promote the use of irrigation and mechanization services in the area of non-sugar agriculture. Prior to the BADC, the Ministry of Agriculture through its extension services division operated a small farmer tractor cultivation scheme as a subsidized operation.

The BADC has operated two mechanization schemes in addition to the mechanization components within the Rural Development Programme and the Spring Hall Land Lease Project. One was the Motor Tractor Cultivation Scheme which provided cultivation (ploughing, rotovating, harrowing, etc.) services to small farmers at subsidized rates; the other was a Pilot Smallholders' Mechanization Scheme, providing services in mechanical cutting, loading, and transportation to small sugar cane growers as well as mechanized tillage services to small farmers. As part

of a management reorganization plan, the BADC amalgamated these two cultivation schemes in order to achieve greater practical efficiency in the use of equipment.

3.6.2 Impact

From the standpoint of demand for its tractor services, the BADC has had a favourable impact on both full time agriculturists and part-time small farmers. In fact the scheme has made its tractor cultivation services so available to farmers throughout Barbados (except in the Scotland District) that demand for these services now far exceeds the ability to provide them.

The success of the Tractor Cultivation Services of the BADC can be gauged from the total acreage ploughed, rotovated, and furrowed under these services. (Table 3.2).

TABLE 3.2 AREA CULTIVATED BY BADC TRACTOR SCHEME			
OPERATION	Acres Completed (1991)		TOTAL
	RDP Scheme	Other Scheme	
Harrow	300	595	895
Plough	413	461	874
Farrow	631	778	1,409
Rotovate	551	589	1,140
Rolling	467	66	533
Planting	52	71	123
Spraying	2	8	10

The total number of farmers benefiting from these services were 5,242. The small size of the farms serviced can be assessed by noting that the total number of operations performed on the above acreage were 9,624, given that an average 2 - 3 operations were performed per farm.

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3.6.3 Problems

The major problems afflicting the tractor services of the BADC are economic ones. Firstly, the rates at which the equipment is hired out have not been revised for many years. Thus, at present the exercise is highly unprofitable due to the fact that the cost of equipment maintenance far exceeds the income received from offering the low-priced service.

Secondly, the low-priced service has attracted other clients beside full-time agriculturists and public abuse has begun to surface. Both demand for and abuse of this system will increase since other small operators of mechanical services have gone out of business through their inability to compete with the low prices of the BADC.

The organizers of the scheme would suggest that the lack of training of tractor drivers did contribute to the unnecessary breakdowns and unsatisfactory services given to some farmers.

3.6.4. Lessons Learnt

1. It is clear that given the increasing demand for the tractor cultivation services, the financial mechanism underlying the system must be altered quickly. Urgent attention must now be focussed on setting the services on a self-sustaining path.
2. The excessive demand placed on the tractor cultivation services could be greatly alleviated if mechanisms are put in place to utilize the services of cultivation equipment schemes operating on large estates.
3. The target group for this type of service has to be redefined given that it has become un-economical to continue to service very small plots. Furthermore, the time given to these very small farmers is manifested in the delays and loss of production on larger full time farms.

3.7 Small Farmers Marketing (Pilot) Project

3.7.1 Background

The MAFF and the IICA signed an agreement on December 31, 1981 to participate jointly in the execution of a project entitled "A Marketing Plan for Small Farmers in Barbados".

The need for the agreement arose against the background of serious problems faced by small vegetable producers. These problems were identified as large price fluctuations, uncertain market outlets, increasing competition from large-scale farmers and low bargaining power.

The purpose of the Marketing Project was to assist the Government of Barbados in defining and implementing an agricultural marketing plan with particular emphasis on increasing the bargaining position and marketing opportunities of small farmers as well as improving their participation in the rural development process.

The Project was programmed to last for a period of three years, to be carried out in two phases of eighteen months duration each. The implementation of phase one was planned for January 1982. However implementation proved difficult due mainly to the complex and dynamic character of the undertaking. After the first five months little progress had been made in getting the Project off the ground.

In June, 1982, with the recruitment of a project coordinator by IICA, it was decided that from a practical standpoint what was required was a less complex undertaking which would be simpler to implement but at the same time would test the feasibility of some of the basic elements of the proposed marketing strategy.

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3.7.2 Objectives

The objectives of the Pilot Project were:

1. To test the capability of small farmers to respond to a centrally monitored marketing operation.
2. To demonstrate the potential of joint efforts in marketing operations at the rural level and induce the formation of small farmer organizations.
3. To establish the basis for an efficient and institutional setting (MAFCA, BMC, BADC, BAS) that would permit the implementation of the Small Farmers Marketing Plan.

3.7.3 Project Description

Some seventy small farmers of the IRDP and seventeen of the SHLLP participated in the Pilot Project. The introduction of farmers was undertaken in three stages. The first group of farmers, selected from IRDP units in St. George, entered in August, 1982. The second group, selected from the Spring Hall Project, joined in November, 1982. The third stage saw incorporation of farmers from IRDP units in St. Philip and St. Michael in January, 1983.

The project focussed on three main areas:

- a) the operation of an organized system of collecting and marketing the agricultural produce of small farmers on a group basis;
- b) the formation of farmers' groups and the placing of emphasis on the benefits to be derived from small farmer organizations;
- c) the provision of support to the development of a market information system.

3.7.4 Executing Agency

The Project was a joint technical co-operation effort between the Ministry of Agriculture, Food and Consumer Affairs (MAFCA) and IICA. Other institutions



involved in the execution of the Project were the BMC, the BADC and ACTCO, marketing arm of the BAS. The BMC was the executing agency for this project.

3.7.5 Funding

Funding of US\$77,500 was provided through the Simon Bolivar Fund and additionally a US\$5,000 revolving fund was set up by IICA to support the operation.

3.7.6 Impact

The level of support for the Project actually demonstrated by the farmers was very encouraging with the strongest support coming from the RDP farmers in St. George.

ACTCO represented the major market outlet for the farmers' produce under the project and between August and December, 1982 sales of vegetables and root crops produced by the RDP participating farmers amounted to almost 14,000 lbs. Additionally, during four weeks of collection of similar produce from farmers in the SHLLP, an estimated 10,500 lbs were marketed. (Table 3.3).

During 1983 some farmers, encouraged by the project, increased their area and/or intensity of production. This factor along with improved participation from other farmers, resulted in an increase in estimated supply. Estimated available supply, along with ACTCO's demand are both shown in Table 3.4.



TABLE 3.3 ESTIMATED VOLUME OF PRODUCE ^{1/} THROUGH ACTCO AUGUST - DECEMBER 1982 ^{2/} UNIT - LBS	
1982	Estimated Volume of Produce Marketed
August	1,923
September	3,307
October	2,272
November ^{3/}	12,097
December ^{3/}	4,621
TOTAL	24,220

- NOTES:
- ^{1/} 'Produce' includes only vegetables and root crops. An additional 830 fruits (mainly pears, coconuts, shaddocks) were sold by IRDP farmers.
 - ^{2/} Collection began on August 24, with IRDP farmers. Only two weeks of collection were, therefore, possible in August. In other months collection was held every week.
 - ^{3/} During November (3 weeks) and December (1 week) produce was collected from the Spring Hall Project. In November, 8,892 lbs and in December, 1,631 lbs were collected from the Spring Hall Project - a total of 10,523 lbs. The remainder of produce for the period, 13,699 lbs, was collected from IRDP farmers in St. George.



TABLE 3.4 ACTCO'S DEMAND AS A PERCENTAGE OF ESTIMATED AVAILABLE SUPPLY JANUARY - DECEMBER 1983			
1983	Estimated Available Supply (lbs)	ACTCO Demand (lbs)	Demand as a % of Supply
January	8,291	6,156	74
February	17,359	10,013	58
March	15,970	11,735	73
April	7,547	6,610	87
May	6,723	5,776	86
June	11,218	7,269	69
July	9,877	5,293	54
August	7,193	6,138	85
September	3,599	1,798	50
October	5,061	3,163	63
November	6,509	4,039	62
December	2,565	692	27
TOTAL	101,912	68,682	67

Source: Final Project Report: A Marketing Plan for Small Farmers in Barbados - Pilot Project. IICA. January 1984

Farmers actually supplied about 87% of ACTCO's demand and this performance must be viewed as reasonable in light of the not yet developed state of information-gathering and estimation techniques among small farmers.

The project showed that the farmers possessed the ability to respond favourably to organized marketing arrangements. However, whereas at the operational level the project resulted in a closer working relationship between BAS and BADC (through active collaboration between RDP staff and ACTCO), failure on the part of farmers to gain support from ACTCO at critical times resulted in the deflation of farmers' hopes and impacted negatively on the movement towards the formal organization of farmers.



Generally speaking, the project made a positive contribution to the development of the farmers. Its positive impact can be summarized by the following four observations:

1. It represented a positive and commendable effort to assist small farmers and succeeded in convincing them that small farmers were neither overlooked nor forgotten.
2. It showed farmers and decision-makers that the implementation of a marketing plan is not only necessary, but feasible.
3. It contributed greatly to farmers' increased income, improvement in market security, and transportation of produce.
4. It evoked some degree of faith and hope from the farmers who in turn attempted to increase and diversify their agricultural production.

When questioned about the impact of the project on their income; 80% of the farmers felt that their income had been increased, 10% felt that the project left their income unchanged, whilst the other 10% failed to respond.

3.7.7 Problems

At the outset, the success of the SFMP, to a great extent, relied upon a high level of participation by the farmers and appropriate institutional support. Lack of sufficient institutional support, especially the failure of ACTCO to provide some determined slice of its demand market in the form of prearranged quotas, helped to prevent farmers' participation from reaching higher levels, and also gave rise to some degree of stagnancy.

The existence of some attitudes which proved inimical to the fostering of proper marketing relationships between the farmers and ACTCO resulted, at times, in poor communication and a belief on the part of the farmers that the low prices offered by ACTCO could be made better. Whereas recurrent production difficulties, especially in the St. Philip area, seriously reduced farmers' output, farmers' dissatisfaction with ACTCO's prices along with the offering of better prices from



other buyers contributed to the collapse of the Spring Hall Collection and adversely affected participation from farmers in St. Michael.

Interestingly enough, it was originally believed that a programme of market promotion, aimed at penetrating large volume market outlets such as supermarkets and hotels, would be able to secure the highest prices. However, in reality the project pursued very limited market promotion activities of this nature and concentrated its attention on ACTCO as the sole market outlet for the farmers' produce.

ACTCO adopted a "take-it-or-leave-it" approach to the pricing of farmers' produce and all efforts on the part of the project to exert influence on ACTCO's pricing policy proved futile.

3.7.8 Lessons Learnt

1. The project experienced a high degree of erratic behaviour in ACTCO's prices, confusion for farmers, and constant disequilibria among the forces of supply and demand. It is clear that a great deal of work remains to be done in the areas of national production planning and the harmonization of production and marketing opportunities.
2. It is true to state that the area of pricing surfaced as an important concern under the project. However, pricing was not the major concern. The farmers considered lack of an assured market their primary problem.
3. The farmers appeared to perceive some degree of hostility directed at them by the supporting institutional system. The project clearly highlighted the need for meaningful dialogue between farmers, ACTCO, and policy makers.
4. In 1982, the rejection ratio of farmers' produce delivered to ACTCO was 10%. The project stressed proper handling, packaging and grading of produce. Additionally, ACTCO demanded that farmers supply only produce that had attained a marketable standard of quality. In 1983, the rejection



ratio fell sharply to 1%. This performance demonstrated that the quality of produce from the farmers can be quite high and that the farmers themselves, if guided, motivated and provided with markets, can respond favourably to challenges.

3.8 National Fruit Orchard Project

3.8.1 Background

Organized fruit production and research first started in Barbados around the 1960's, coinciding with the government's policy of diversification. Until then, production originated mainly from wild trees and backyard producers. National fruit production - still obscured by insufficient information - was estimated at 9,900 tonnes or 65% of domestic requirements. Since 1970, the value of imported fruit (fresh and processed) has increased three fold rising from \$3.0 million to \$9.9 million in 1980. Of significance is the fruit imports during 1980, fresh apples accounted for \$1.3 million, fresh oranges \$1.5 million and orange juice \$3.3 million.

Given the factors informing the agricultural policy of the day, the Government selected fruit production as one area of importance in its development and diversification drive. To facilitate this objective, incentives and subsidized seedlings were made available while research and production projects were undertaken. But despite these initiatives serious constraints continued to restrict progress. In fact, by the mid-1980's the industry was still characterized by:

- low yields together with poor quality produce;
- scattered and seasonal nature of production;
- limited planning due to information deficiency;
- absence of marketing mechanisms; and
- poor services - research, credit and extension.

In the face of these constraints the Government in the 1983-88 Development Plan outlined a number of goals for the fruit industry. These include:



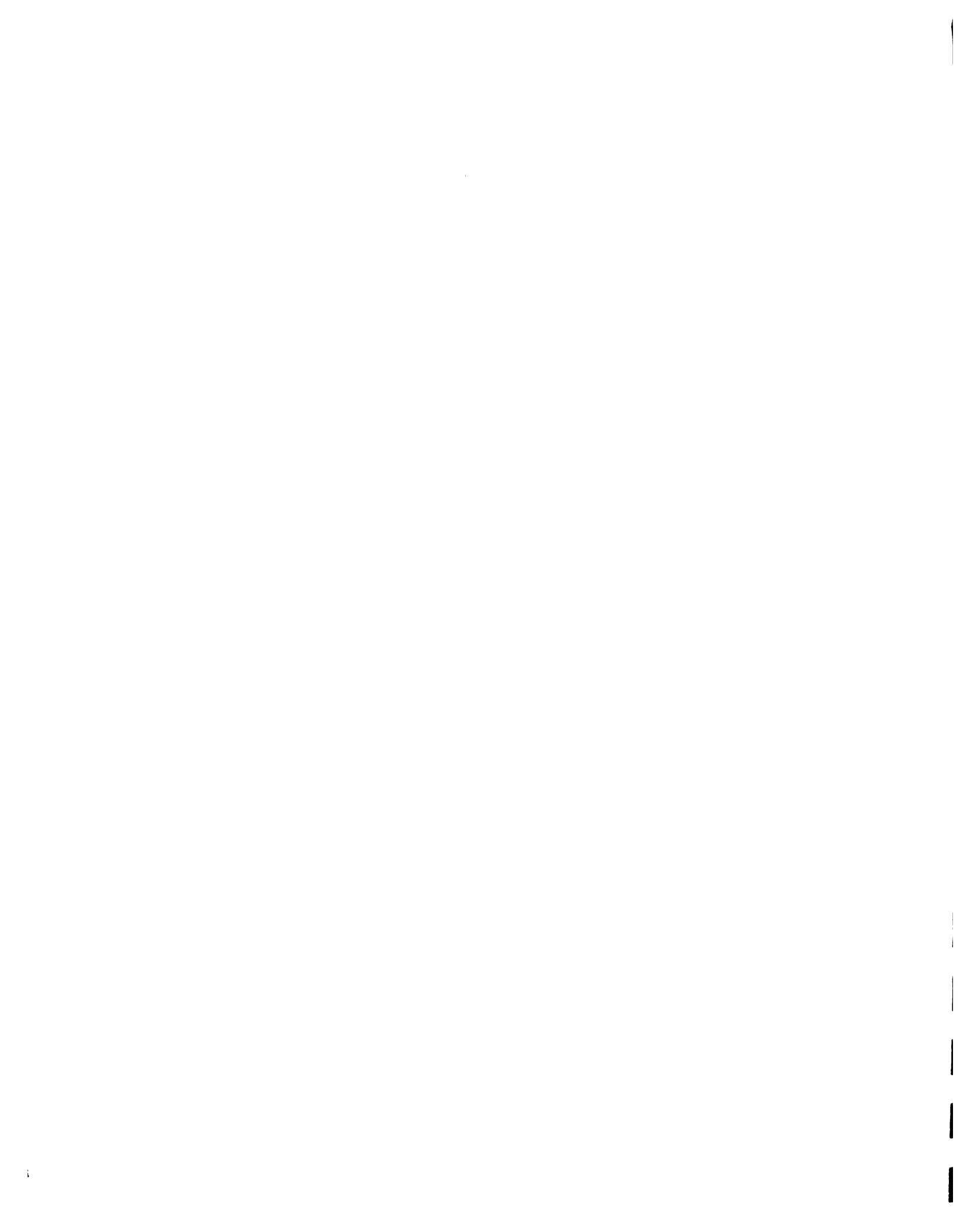
- (a) the encouragement of more extensive commercial fruit production;
- (b) the identification and securing of export markets for selected fruit (cherries, paw paw);
- (c) increasing the consumption of locally produced fruits;
- (d) improving the production efficiency in the fruit industry; and
- (e) the initiation of a viable processing industry based on local raw materials.

To achieve the specific goals set for the fruit industry, Government set out to resolve the information and planning problems first. As a result the Ministry commenced an exercise with IICA to develop a Comprehensive Fruit Development Programme and to gather basic information to assist the planning exercise. The Government's approach was to strengthen research in the area of fruit production and processing, initiate marketing, credit and extension programmes and substantially increase production and productivity in the sub-sector through the demonstration effect, that is, commercial national orchards. Efforts were to be concentrated on such fruits as mangoes, papaya, avocados, passion fruit, cherry, lime, grapefruit, soursop, guava and pineapple. This integrated project, with its research, developmental, and commercial foci, had the potential to lend considerable support and drive to other initiatives being taken, and to the benefit of the agricultural sector as a whole.

3.8.2 Project Description

Objective

The project's overall objective was to develop the local fruit industry so as to encourage improved land use, create employment, and make a positive impact upon the balance of payments through saving foreign exchange and establishing a base for exports.



Components

The National Fruit Orchard Project (NFOP) was designed to be implemented over a period of eight (8) years in two phases (Phase I for 3 years and Phase II for 5 years) and comprised the following components:

A. Phase I

The Project's activities included:

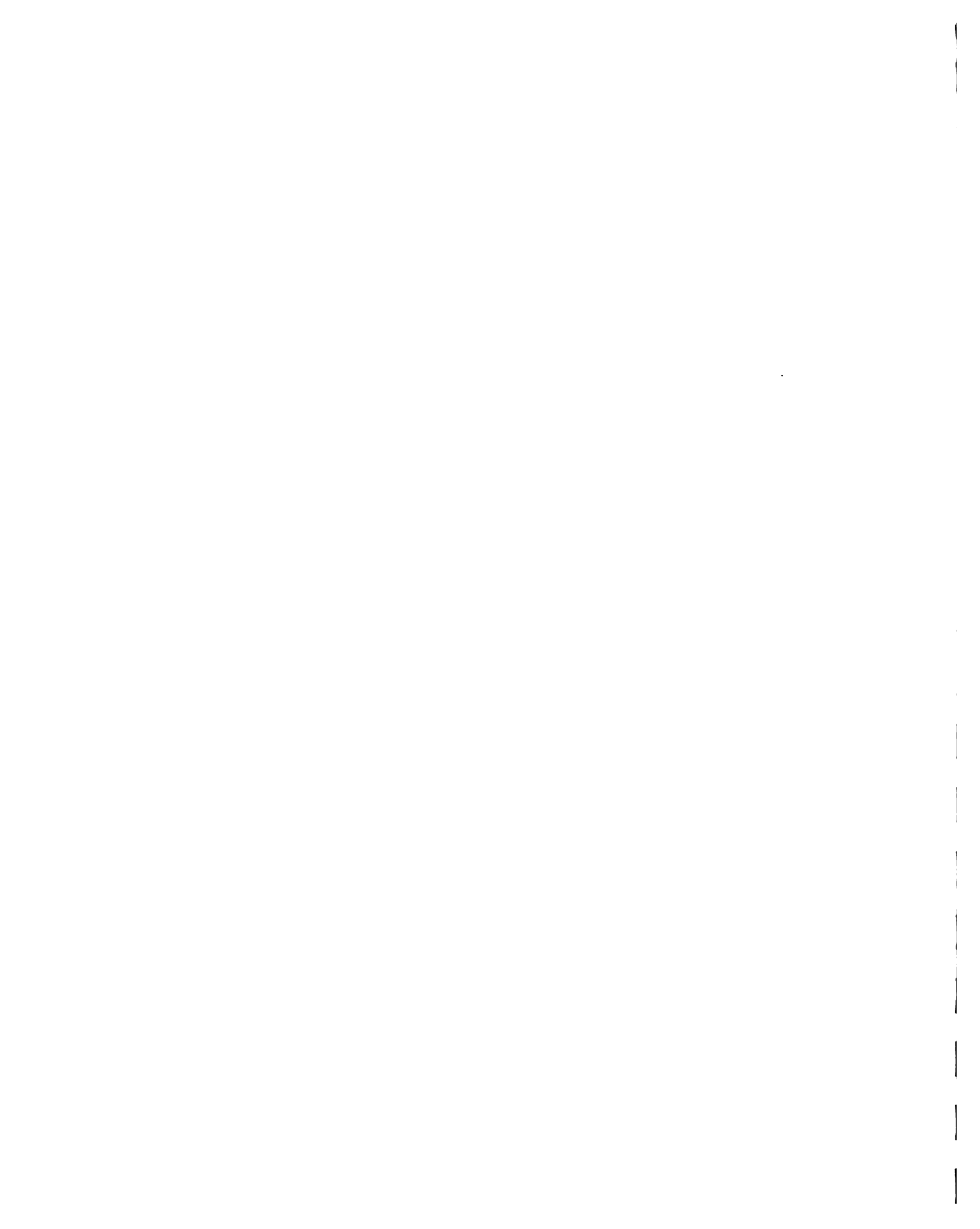
- a) establishing a demonstration orchard at Codrington, St. Michael;
- b) assisting in establishing or rehabilitating at least ten commercial orchards on an annual basis;
- c) providing technical assistance and a line of credit for fruit farmers.

B. Phase II

The activities of this phase include:

- a) development of Demonstration/Commercial Orchards (for leasing to private farmers);
- b) expansion of the Establishment and Rehabilitation Component (at (b) above);
- c) fruit processing;
- d) fruit marketing;
- e) bee-keeping.

Although these two phases are related and constitute a single project, each will be analysed separately. This report deals with Phase I, while Phase II is to be fully developed and analysed through Technical Assistance from Phase I (and after an evaluation of Phase I) during year 3.



3.8.3 Executing Agency

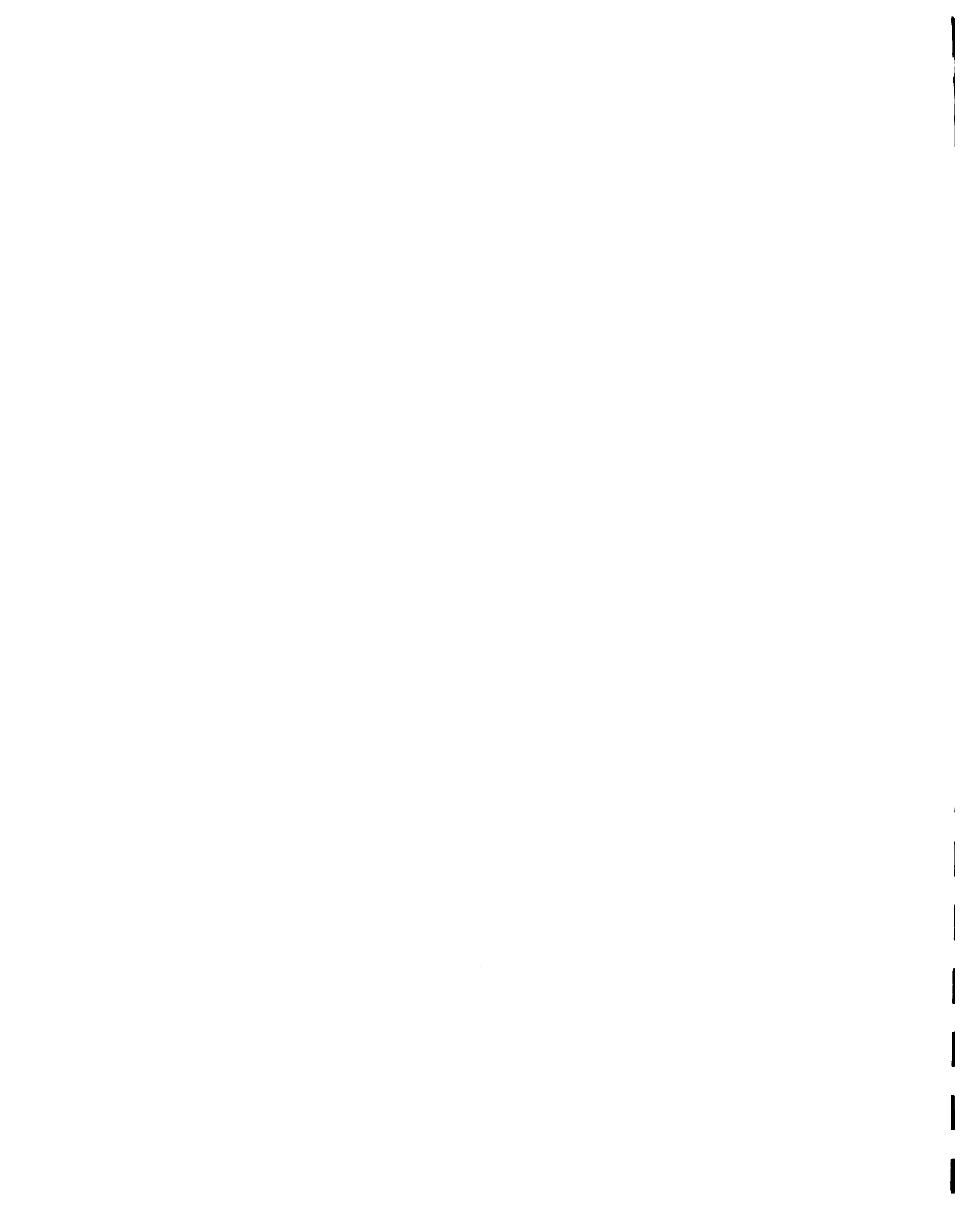
The project was executed through a Fruit Development Unit (FDU) with the MAFF. The unit was headed by a Project Manager and had as a technical adviser a Fruit Technologist provided through Technical assistance from IICA.

3.8.4 Project Costs

The project was jointly funded by the Government of Barbados and the European Development Fund (EDF). The total estimated project cost was Bds\$1.34 million as shown in Table 3.5.

TABLE 3.5 NATIONAL FRUIT ORCHARD PROJECT COSTS (Bds \$'000)			
ITEMS	CONTRIBUTION		TOTAL
	EDF	GOV'T	
Central Project Cost	29.0	207.9	236.9
Commercial/Demonstration Orchard	29.5	276.9	306.4
Irrigation	91.0	-	91.0
Line of Credit	500.0	-	500.0
Technical Assistance	75.0	-	75.0
SUB-TOTAL	724.5	484.8	1,209.3
Physical Contingencies (10%)	22.5	48.5	71.0
SUB-TOTAL	747.0	533.3	1,280.3
Price Contingencies (5% compounded)	17.0	45.4	62.4
TOTAL	764.0	578.7	1,342.7

Source: Status Report on the National Fruit Orchard Project by Stevenson Skeete, Senior Agricultural Assistant.



3.8.5 Impact

The demonstration orchard at Codrington has been established and the drip irrigation system has also been installed.

With regard to the establishment and rehabilitation of commercial orchards the programme has been quite successful. At the end of 1987, 305 acres were established and rehabilitated. By the end of 1989, the project had established or rehabilitated over 490 acres, 115 acres in excess of its target of 375 acres. (Table 3.6).

By early January 1990, paw paws cultivated by a local firm, were being exported on a regular basis. Commercial orchards producing citrus, mangoes, cherries, avocado pears, and guavas were also established.



Table 3.6
Area Planted/Rehabilitated by Project

CROP	Acreage planted in 1986	Acreage planted in 1987	Present acreage 1989	Non-Commercial acreage planted in 1987
Cherry	82	22	104	5
Pineapple	2	1	3	-
Paw Paw	12	60	60	-
Limes	1	1	2	4
Grapefruit	1	2	3	20
Oranges	-	-	-	10
Soursop	-	3	3	4
Avocado	1	1	2	6
Mango	2	14	16	15
Guava	-	7	7	6
Breadfruit	-	2	2	1
Mixed Fruit	(Not calculated)	6	7	18
TOTAL	101	119	209	89

Source: Status Report on the National Fruit Orchard Project. Stevenson Skeete, Senior Agricultural Assistant.

Total acreage planted	209
Total acreage rehabilitated	96
Grand total commercial orchard area at present	305
Target area for first phase	375



3.8.6 Problems

During the establishment of the demonstration orchard at Codrington, problems were encountered in the area of mango-tree planting. Given the fact that the then existing irrigation system could not adequately provide water to the mango area, the decision was made to plant the mango trees in the wet season. During the wet season, however, wet soil conditions caused land preparation activities to be abandoned. The acquisition and installation of the drip irrigation system has now made it feasible to plant the mango trees in the dry season.

Serious problems were also experienced with the soil conditions of some areas at Codrington. Water logging and/or poor soil depth caused some areas to be completely disregarded. Major drainage works had to be done on paw paw and avocado areas.

The impact of the establishment and rehabilitation of commercial orchards was restricted by the lack of irrigation facilities. Many of the orchards had no irrigation and lack of proper management during the warmer part of the year (January to September), resulting in some sensitive crops (e.g. paw paw) being affected. Other problems under this programme included inadequate spraying and pruning services, poor marketing strategies for some fruits (e.g. grapefruit, limes) and a lack of finance which prevented farmers from rehabilitating their orchards.

To date, the line of credit provided by the EDF has not yet been established. Lack of coordination between the Ministry of Agriculture and the Barbados National Bank has been the main cause of the delay in having this credit link established.

3.8.7 Lessons Learnt

Given the experiences associated with the implementation of the NFOP, the following are summary lessons learnt:

- (a) The importance of having technical know-how and access to technical assistance expertise cannot be over-emphasized. Indications are that the



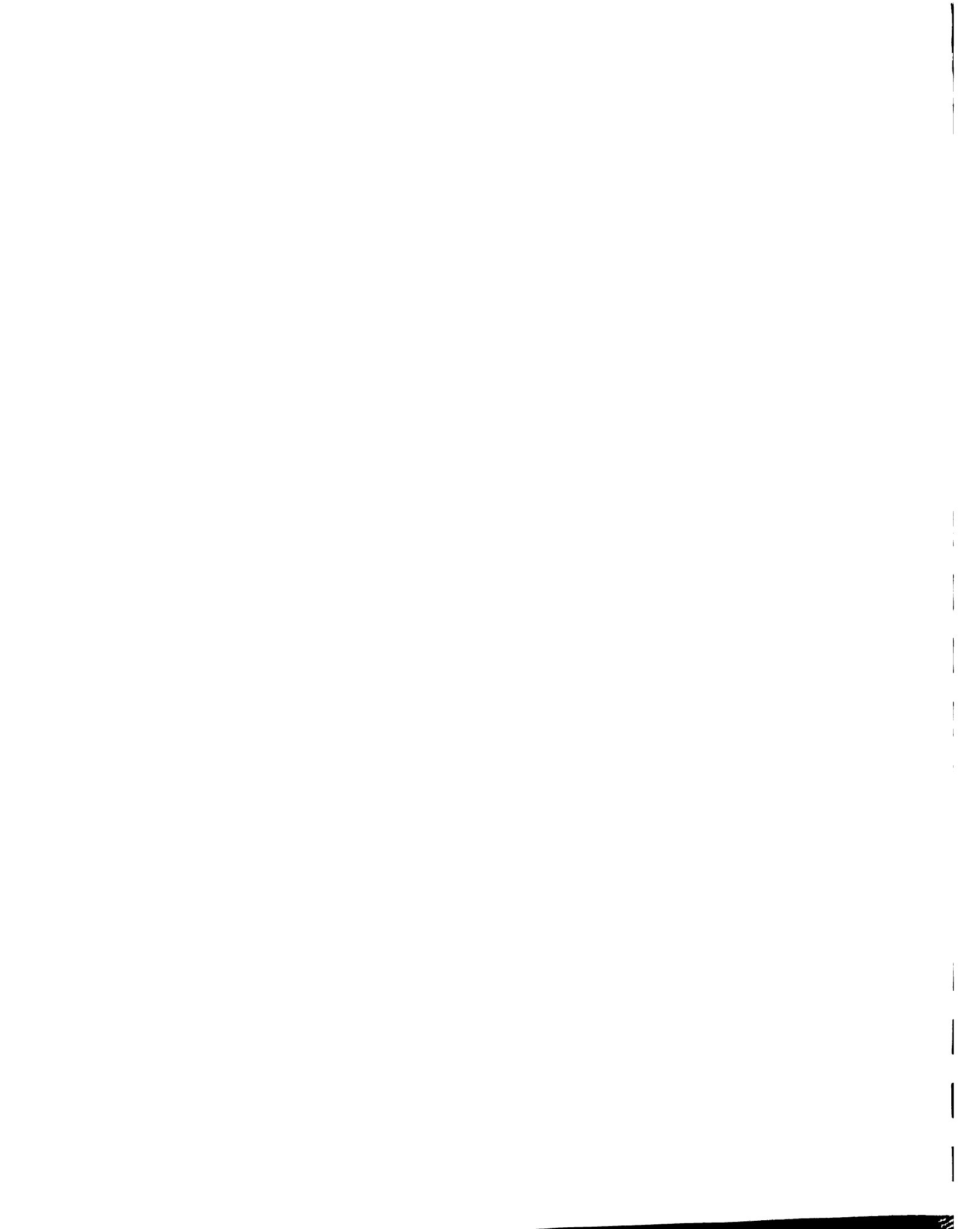
major successful commercial orchards were only able to succeed because of the ready access to the Fruit Technologist on the project. Indeed it is not merely a coincidence that this orchard collapsed soon after the departure of this technical expert.

- (b) The failure of the major large paw-paw orchard after several years of investment by the project suggest that in the future, project/programmes should not be overly dependent on one major participant.
- (c) Indications are that the export market for paw paw are extremely sensitive to size, taste and quality of fruit. This calls for extra coordination between the market and production forces and should be built into projects of this nature.
- (d) The extraordinary delay in disbursing the line of credit under this programme suggests lack of coordination between the Executing Agency and the Bank. In addition it focusses on the erroneous assumptions often made during project formulation that there is an unsatisfied demand for credit among farmers. The lesson is, that the reasons for the likely use and non-use of credit should be more thoroughly investigated when formulating projects.
- (e) The documented data on the progress of the project is very limited and makes evaluation difficult. This fact supports the need to build in monitoring and evaluating systems into projects.

3.9 Scotland District Soil Conservation Project

3.9.1 Background

The Scotland District covers a sub-region that accounts for one-seventh of the total land area of Barbados or some 5,881 hectares. It is estimated that over 50% of the District lands are subject to an intricate and difficult soil erosion problem.



A number of important technical studies have been carried out on the unique erosion problems of the District. An eight month study by the Organization of American States' Office of Regional Development in 1970 found that over 3,700 hectares in the District were affected by erosion and instability. It recommended various engineering and agronomic treatments for certain areas and suggested specific soils studies prior to undertaking work in other areas. Comprehensive and detailed studies of the area were also conducted by Stanley Associates and Systems and an Integrated Development Plan was produced for implementation.

This Plan identified the following areas of development:

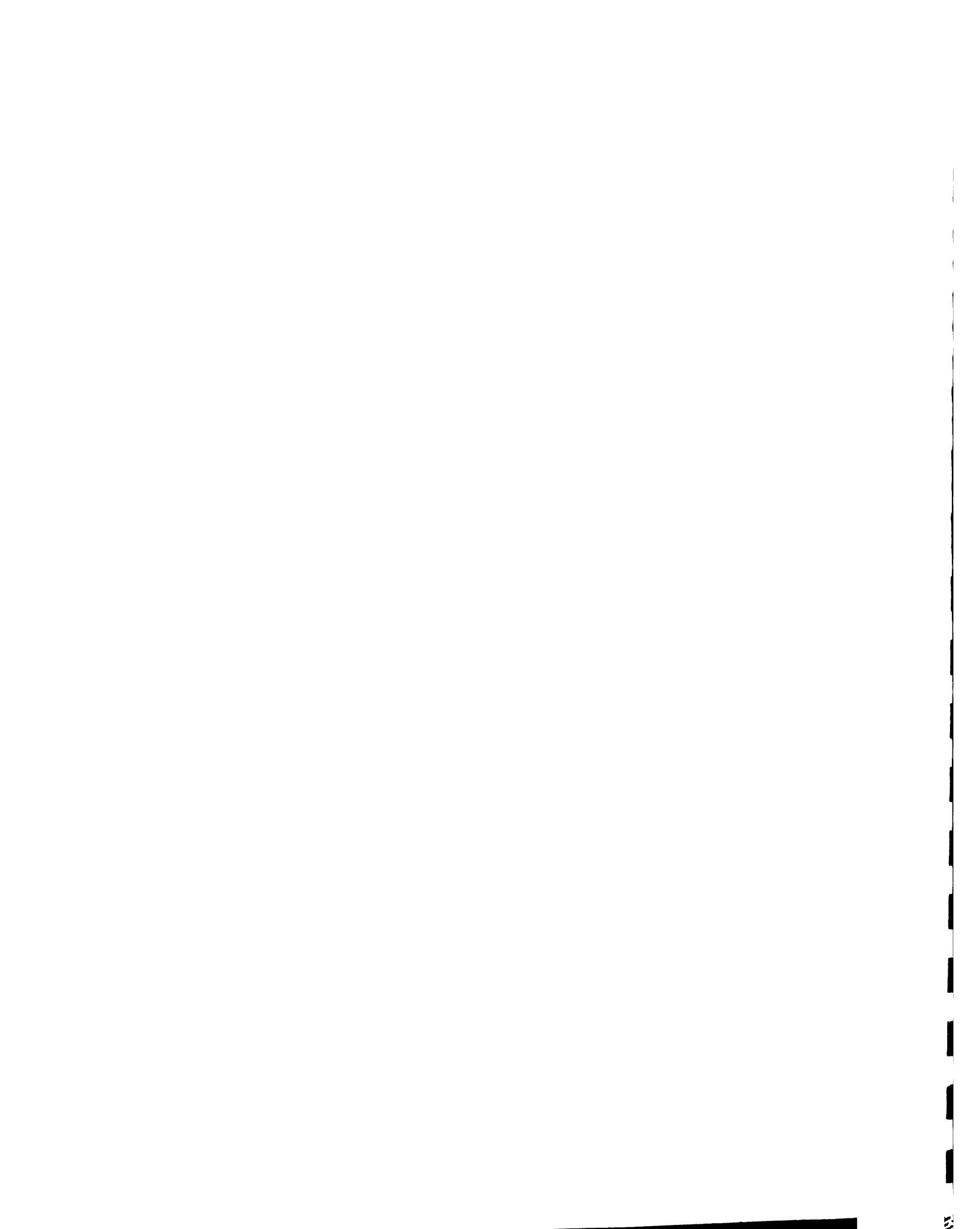
- soil conservation, agriculture, industry, recreation and recommended the creation of a Scotland District Development Authority as the vehicle to manage the development of the sub-region using the proposed development plan as its guide.

Despite the various relevant features of this Plan, its implementation never became a reality. In fact, several agricultural and non-agricultural projects continued to be implemented with minimum coordination and the absence of a development focus for the sub-region.

In recognition of the special environmental problems of the District, the Government has, through its annual estimates, allocated over \$60 million during the past 20 years to the activities/programmes in the Scotland District. This has resulted in the reworking of about 2,200 acres of land by the Soil Conservation Unit (SCU) who were charged with the management of the soil conservation programme.

Indications are that the SCU has not adequately recorded the costs and benefits associated with the various conservation works undertaken. As a result, the need does exist for an evaluation study of the SCU and its programmes.

In an effort to strengthen its soil conservation efforts in the Scotland District, the Government sought and obtained funding from the IDB for a soil conservation project for the Scotland District. The major purpose of the IDB project was to



conduct applied soil conservation research in designated areas (utilizing both engineering and agronomic alternatives) in order to place Barbados' soil conservation work on a firmer technical and economic footing. The project was started in 1983 and finished in September 1987.

3.9.2 Components

The following activities constituted the IDB project components:

- i) Soil conservation works in two pilot areas (Swanns-Turner Hall - 250 acres and Greenland - 180 acres).
- ii) Replacement of a portion of the SCU machinery and equipment and provision of repair and maintenance in the pilot areas.
- iii) Provision of Consultant support for the design, execution and monitoring of the project and the institutional strengthening of the SCU.
- iv) Conduct of soil and hydrological studies of the areas in the Scotland District subject to erosion, to develop basic hydrological data and soil erosion risk analysis.

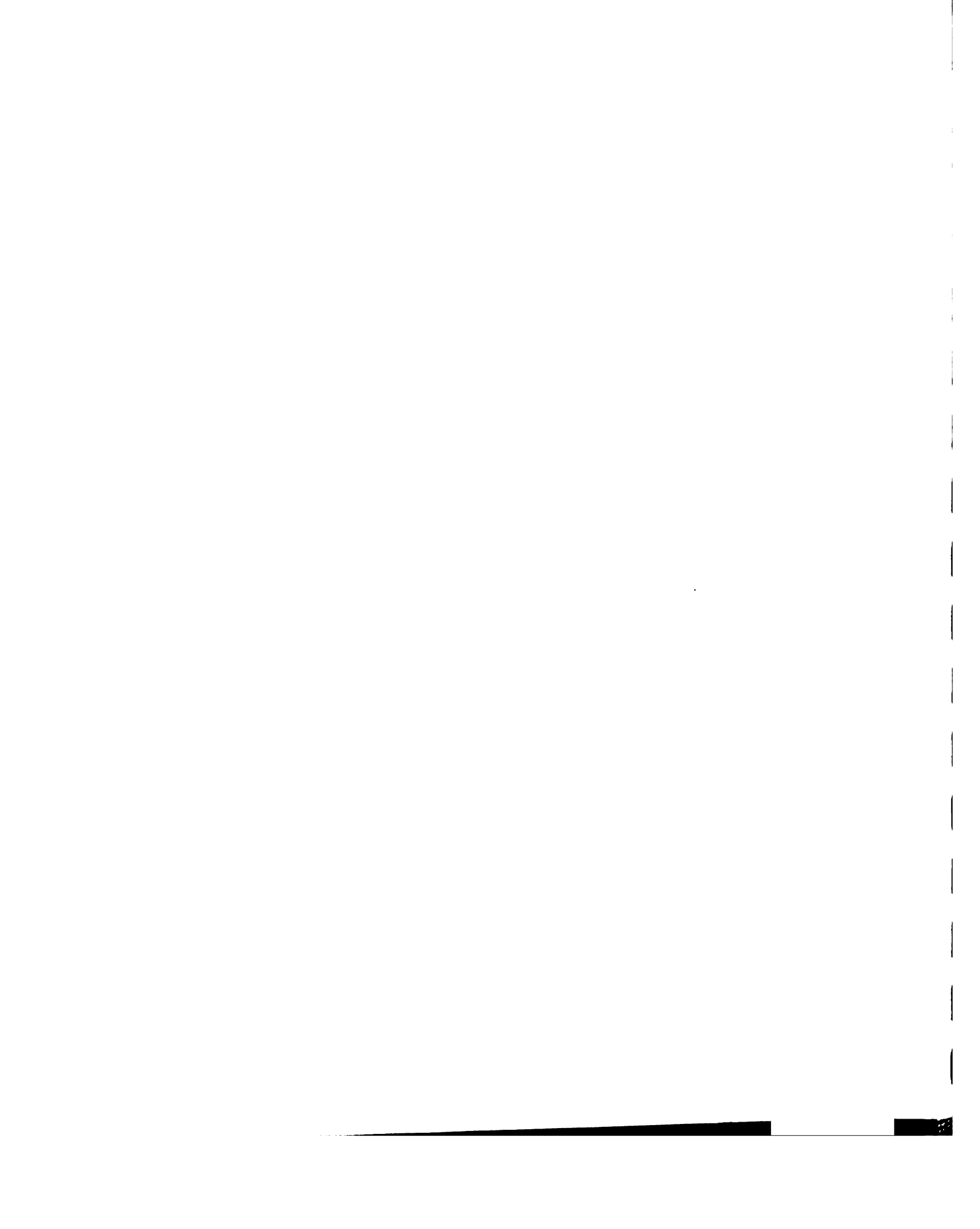
3.9.3 Cost

The total cost of the IDB project has been estimated to be US\$5.8 million of which IDB was required to contribute US\$4.44 million. The project is at the stage where a Project Completion Report (Evaluation) should be undertaken to identify what lessons could be learnt and generally ascertain the success of the project.

3.9.4 Evaluation

The major constraints of the Scotland District may be summarized as follows:

- i) instability of the land;
- ii) hilly topography that is erosion prone;
- iii) unevenness of the land area which makes land preparation very difficult;



- iv) inaccessibility of higher lands to certain types of vehicles;
- v) variability in soil types and infertility of certain soil types;
- vi) insufficient industrial development due in part to topography and distance from the major commercial centre - Bridgetown;
- vii) limited public services such as health, transport, banking;
- viii) cost of provision and maintenance of infrastructure (especially roads/bridges);
- ix) absence of an acceptable investment environment.

3.9.5 Impact

Agronomic and engineering conservation works were carried out on some 400 acres of land in the pilot areas. Almost 200 hectares of land had been reshaped and stabilized for rehabilitation and this exercise resulted in the development of seven water courses, 15 kilometres of access and bench terraces for water control, and 3 dam structures for water control and irrigation purposes.

Some activity resulted in the establishment and maintenance of fruit orchards, re-forestation, sugar cane cultivation, grazing and animal management trials.

As Table 3.7 shows, almost 20 hectares of fruit crops were established whilst another 22 hectares were reforested with species such as Eucalyptus, Casuarina, and other basic fuelwood species.

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**TABLE 3.7
GENERAL ESTABLISHMENT**

CONCEPT	Bawden/Turners Hall	Greenland
	Acreage & Species	Acreage & Species
Fruit Crops	3.0 ha: - Mango - Avocado - Soursop - Guavas	16.74 ha: - Bananas - Avocado - Coconuts - Cashew - Tamarind - Guavas - Mangoes - Cherry
Forestry	17.05 ha: - Eucalyptus - Casuarina - Pink pine - Whitewood - Neen - Samar - Cedar - Mahogany	5.40 ha: - Neen - Cedar - Mahogany - Casuarina

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work on the development of suitable cropping systems has also been developed on approximately 7.0 hectares of the area referred at Greenland. (Table 3.8).

TABLE 3.8 INTER-CROP SYSTEMS 18 ACRES			
Crops	Acreage (ha)	Yields (lbs/Ac)	Projected/Annual Value
Cotton	0.6	*	-
Melon	0.6	1,379	-
Pigeon Peas	0.3	600	-
Sweet Potatoes	1.6	5,933	-
Squash	0.8	*	-
Runcival	1.2	*	-
Banana	1.6	*	-

3.9.6 Animal Husbandry (Grazing) Trial

Approximately 20 cows provided by small farmers in the area were subjected to a management regime in this exercise under a controlled paddock system with improved pastures. The objective of the trial was to show farmers in the region that similar or greater benefits in the rearing of their cattle could be achieved in relatively small areas with adequate management of pastures and of animals, as opposed to the free grazing of untethered stock. Such stock have been a major hindrance to the establishment of crops and fruit trees, and causes erosion problems due to overgrazing.



3.9.7 Soil Analysis Laboratory

Under this project some \$30,568 were spent on the establishment of a soil analysis laboratory. At this facility over 10,000 soil samples have been analyzed, as well as 709 samples from the hydrological (runoff) plots. The determinations covered by such analyses have been: pH, electrical coordinating (EC), pontrile size, sediment lost and soil maintain content. Analytical work at this facility continues.

3.9.8 Hydrology

Eight stations for the collection of hydrological and meteorological data were established. Data collection activities were started in June 1984, with collection of soil samples being initiated in April 1985. Approximately 709 runoff samples were collected. Daily data collection activities are also effected.

3.9.9 Workshop

Earth moving and agricultural equipment along with workshop tools and equipment were replaced at the soil conservation unit. Project personnel received local and overseas post graduate training in soil conservation and agronomy. Consultancy services were also provided in the areas of Agronomy, Engineering and Machinery.

3.9.10 Lessons Learnt

The major weaknesses of the previous programmes in the Scotland District may be summarized as follows:

- i) inadequate management of the SCU to administer the difficult soil conservation programme;
- ii) failure to record the costs and benefits associated with the various conservation works undertaken;

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is crucial for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent and reliable data collection processes to support informed decision-making.

3. The third part of the document focuses on the role of technology in data management and analysis. It discusses how modern software solutions can streamline data collection, storage, and reporting, thereby improving efficiency and accuracy.

4. The fourth part of the document addresses the challenges associated with data management, such as data security, privacy, and integration. It provides strategies to mitigate these risks and ensure the integrity and confidentiality of the organization's data.

5. The fifth part of the document concludes by summarizing the key findings and recommendations. It stresses the importance of a proactive approach to data management to maximize the value of the organization's information assets.



- iii) apparent breakdown of a maintenance programme of the engineering works installed over the years;
- iv) lack of technical balance between engineering measures and a more integral soil conservation strategy (including agronomic work);
- v) over-emphasis on soil conservation measures vis-a-vis development of natural resources of the District;
- vi) lack of inter-sectoral approach toward developing the area and thus establishing linkages with the area and the rest of the economy;
- vii) absence of an audit of the natural resources of the Scotland District and the quantification of the development potential of the sub-region;
- viii) inability of the Executing Ministry to initiate successfully the implementation phase of projects following two major externally funded studies which identified projects for implementation.

SECTION 4 - RURAL DEVELOPMENT STRATEGY FOR BARBADOS

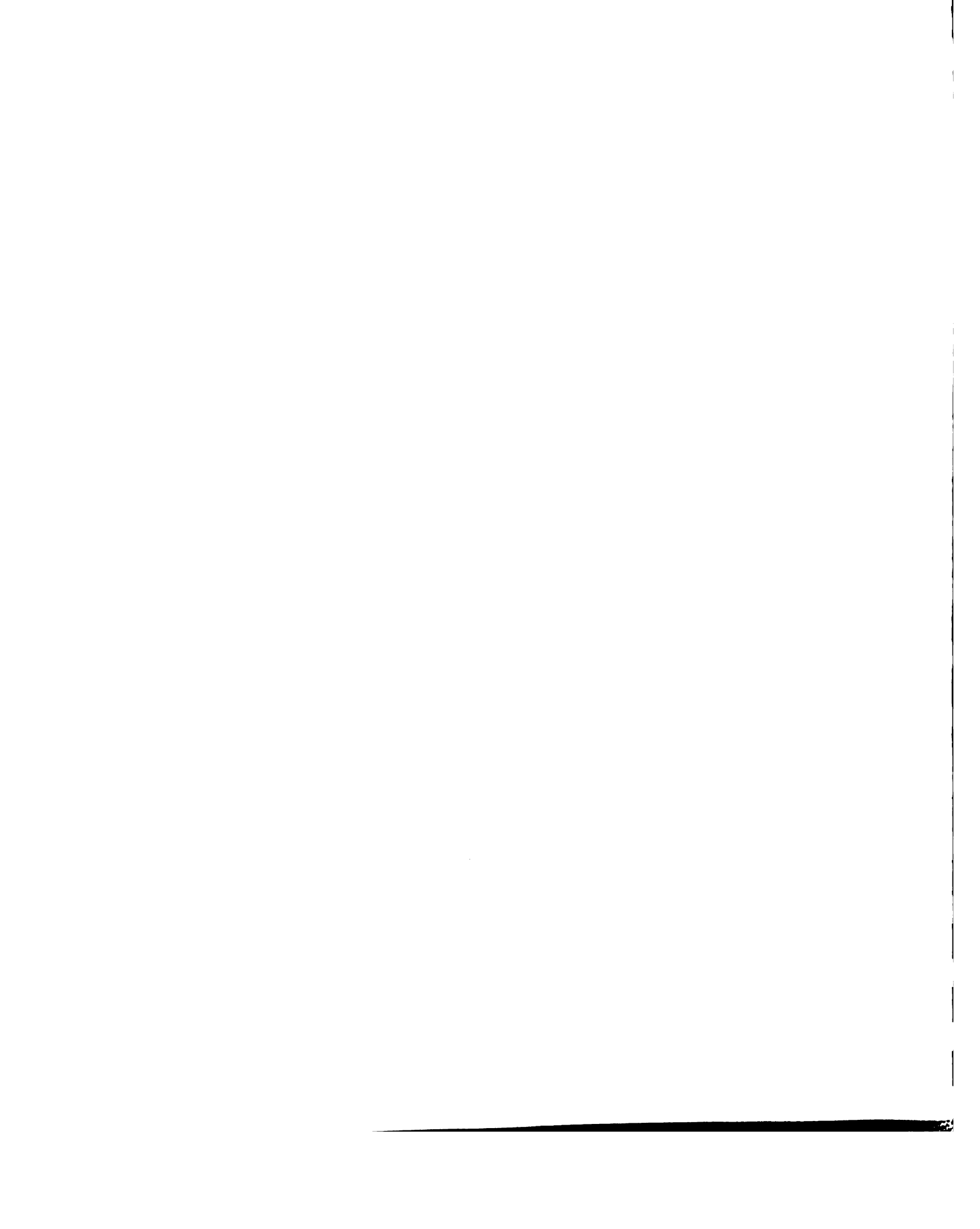


4.1 Framework

Historically Barbados has been dominated by a rural plantation system emphasized the cultivation of sugar and the setting up of chattel houses in unstructured villages on plantation lands to ensure a constant and easily available supply of agricultural labour. The lands on which these chattel houses stood were undeveloped (no roads, running water, electricity) and consequently the inaccessibility of facilities encouraged the development of some diseases. Additionally, the educational system ensured the perpetration of a rigid class structure through the insistence that a fee (which only the wealthy could afford to pay) had to be paid to secure a secondary education.

For many years, sugar cane production utilized more than 70% of the country's land resources and this fact alone demonstrated the inherent weakness of a policy based on mono-culture agriculture. Therefore, it can be safely argued that before the 1960's, the dominance of the agricultural sector, the inaccessibility of services, under-development of rural villages, and the limited educational opportunities available created a true urban-rural dichotomy in Barbados.

However, since the 1960's (1960 - 1979), Government's policies were directed to ensure rapid development in the social sector which in turn provided the human capital that was essential and simultaneously required to adequately utilize the economic capital and physical resources. During the period, Barbados provided its nationals free secondary and tertiary education with a resulting high literacy rate (more than 98%). With respect to the health services, a new general hospital was built, a new modern private hospital was commissioned, an Applied Science Programme started and rural district hospitals opened. The period also saw the introduction of the National Insurance and Social Security Scheme. The Government's commitment to social services development (infrastructure and human resources) was reflected in their annual expenditures. In the 1962/65 Development Plan, 38% of the planned expenditure was allocated to social projects. This proportion was 26% in the 1965/68 and 28% in the 1969/72 Plans.



The improved well-being of the masses brought about economic opportunity (per capita income was US\$3,000 in 1980) and improved quality of education, health and housing has been accompanied by a shift of labour away from the agricultural sector (a mere 5.7% of total in 1989) into the services areas. Greater internal mobility supported by an improved infrastructure (some 2,000 kilometers of road network) resulted in the removal of the rural-urban dichotomy in Barbados.

As a result of the small size of the domestic economy and consequential specialization in the limited number of sectors, Barbados has exceedingly high ratios of imports and exports to national income. This has resulted in a critical dependence on the international economy for the maintenance of high levels of domestic economic activity, and renders the country extremely vulnerable to fluctuations in economic activity in its major trading partners, and to radical shifts in the supply situation for key commodities.

Despite considerable changes, the country's inherited structural problems remain the major obstacle to the solution of its economic problems. The imbalance in the production structure and lack of inter-sectoral linkages results in the persistence of high levels of unemployment especially among the under 25 age-group.

The existence of a resource gap common to most developing countries, and which is relatively large, makes a continuing access to foreign capital inflows of vital importance to domestic economic growth.

Furthermore, the high level of government involvement and intervention in the economy has placed an overburdensome level on the public sector expenditure, a situation that must now be reversed. Consequently, greater privatization will occur in the economy and private sector organizations will emerge in greater numbers in both the productive and social sectors.

During the past decade the regional and international agencies have assisted Government in implementing its agricultural development programme by providing financial resources of some US\$28.0 million for projects in the sector. In addition,



agencies such as UNDP/FAO and IICA supplied technical assistance to support rural development programmes. Such funding and technical assistance will be necessary for continued development.

It is against this background of an economy with a narrow resource base and highly developed social infrastructure, with a literate population which has high expectations, that the policy and strategy for Rural Development must be established.

4.2 Objectives

Over the past 10 years, the agricultural sector in Barbados has undergone severe pressures. Low prices on the international markets, decline in productivity, massive build-up of debts to the banking community, and a serious loss of enthusiasm among farmers, are all factors which now threaten the well-being of those persons who earn their livelihood in some form from the sugar industry. Thus, a great need exists for some renewed strength in the fight to develop the agricultural sector and halt the erosion of the well-being of rural communities. Given the existing problems, the objectives of a continuing rural development programme for Barbados must be:

- a) to contribute significantly to the well-being and development of the rural population through improved productivity in the agricultural sector;
- b) to generate employment, increase exports or reduce the outflow of foreign exchange through import substitution;
- c) to achieve self-sufficiency in the area of food so as to enhance national security against the ravages of famine;
- d) to protect the environment and promote optimal utilization and settlement of land.



The strategy to achieve a successful rural development programme in Barbados should comprise the following components:

land use programme, restructuring of farming system, development of cooperatives, increased productivity, sectoral integration/linkages, rationalization of institutions, foreign exchange earnings thrust, opportunities for privatization of enterprises and beneficiary participation.

A. Land Use Programme

The large portion of idle arable land should form the basis of a land distribution programme. As a start, the more than 500 hectares of agricultural land in the Scotland District operated by the BADC could form the nucleus of such a programme. To support the production of these lands an explicit land use policy is an imperative if agricultural production is to be sustained in the long run.

B. Restructuring of Productive Units

The traditional estate size and small farmer size units are no longer seen as the most viable size production units. A new approach must now be adopted to encompass and recognize the following facts:

- a) Some plantations should now be amalgamated to form more efficient units for economies of scale in production.
- b) Emphasis must now be shifted away from unskilled labourers towards workers with technical capabilities and an ability to effectively deal with machinery.
- c) The small farmer, in order to be efficient, must now utilize appropriate technology such as irrigation devices, cultivation equipment, post-harvest technology practices (to minimize wastage and spoilage), and credit. Additionally, the small farmer must now demonstrate an interest in record-



keeping and be prepared to accept training since his farm must be treated and viewed as a small business.

C. Development of Cooperatives

Participation in a cooperative movement has been shown to provide several cost advantages to farmers (large and small). Given the need for greater cost efficiencies and more price competitiveness in the future, producers could find advantages in participating in activity specific cooperatives such as equipment, input supply and marketing.

D. Increased Productivity

The adoption of new technology per se is not enough to generate increased output and hence increased farm incomes. The skills of the operators of this new technology must be so improved as to achieve greater output from each unit of input. Of necessity therefore, farmer training and technology transfer schemes must be part of future strategy.

E. Sectoral Linkages

A future rural development strategy should seek to establish intersectoral linkages between the agricultural sector and the tourism and manufacturing sectors. This strategy would generate increased domestic demand for the output from projects.

F. Foreign Exchange Earnings

The design of rural development projects should provide for selected commodities that are exportable or ones that will displace an existing import item without requiring too high a foreign exchange element in the form of inputs. This strategy would be in keeping with the national objective of earning or saving foreign exchange.



G. Rationalization of Institutions

There is evidence of duplication of effort, competition for scarce resources, limited availability of trained manpower, weaknesses in organization and management systems among the several organizations involved with rural development programmes. A rationalization of the role and activities of these organizations should lead to greater efficiency in the utilization of scarce resources (human, financial and physical).

H. Privatization

Cognizance must be given to the fact that public sector involvement in the economy has to be significantly reduced under the structural adjustment programme for Barbados. As a result, the role of NGO's as rural development project executing agencies should be greatly emphasized. But these NGO's must be evaluated to ascertain their strengths and weaknesses to undertake their expanded tasks.

I. Beneficiary Participation

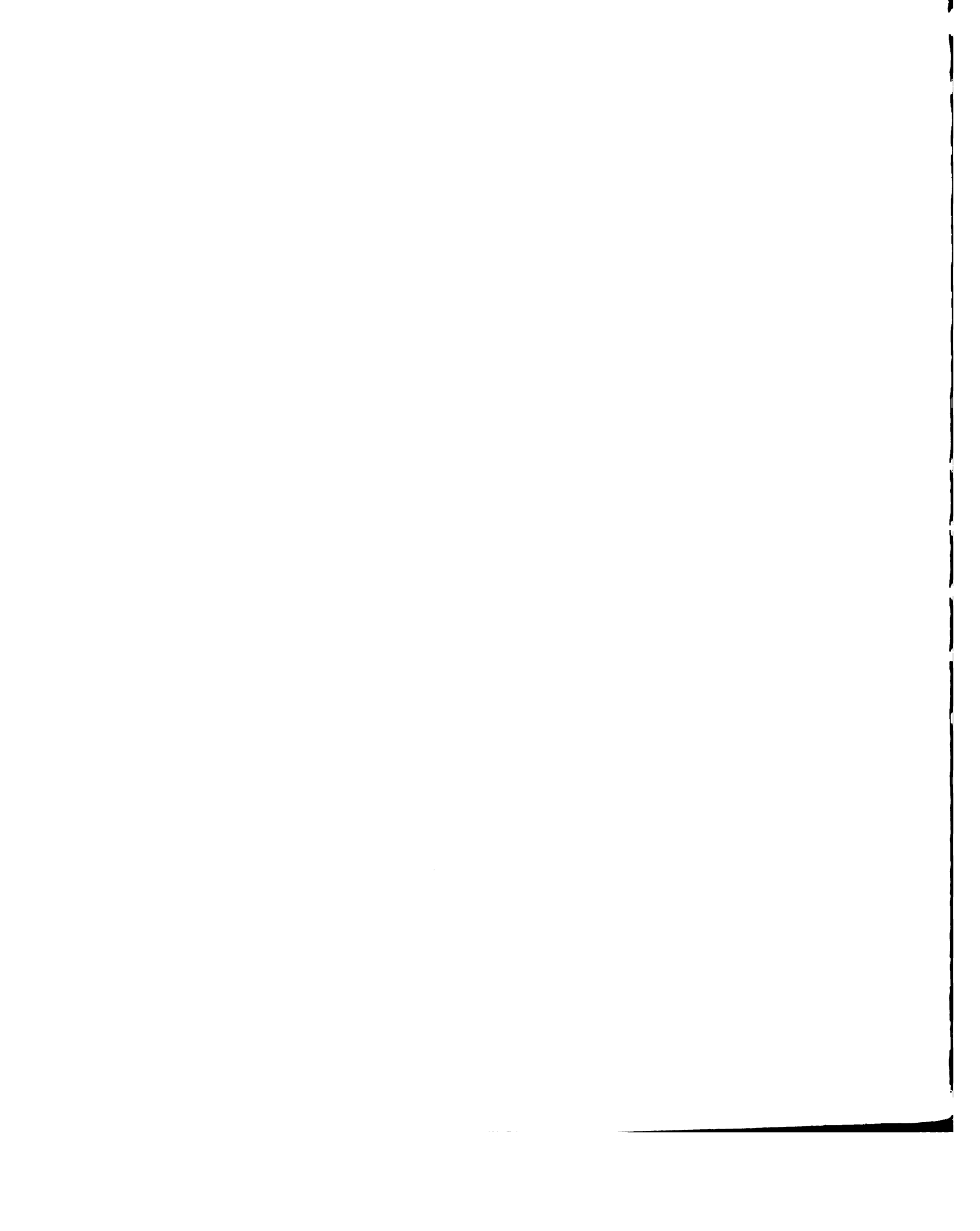
Efforts should be made to involve the project participants in the formulation and design of the rural development projects. Based on the lessons learnt in Barbados and elsewhere, there is evidence that when the project's beneficiaries are not involved in the preparatory stages of a project that the magnitude of its impact is seriously reduced. The process of beneficiary participation would also allow for the conscious screening of beneficiaries into sub groups, mainly women, poorest of the poor, nutritionally disadvantaged, youths, etc. In addition, early involvement would enable the project to focus some resources on group formation, vis-a-vis individuals, where this is found to be a more cost-effective approach to project implementation. Priority attention must be given to the selection of the beneficiaries with potential to develop economically sustainable projects.



There is a common theme emerging from all of the organizations involved with rural development in Barbados when relating their immediate needs, i.e. the need for funding, and increased staff. The perception is that with these two constraints removed the organization would be vibrant and its project portfolio doubled in a short time. Whereas funding and staff would go a long way, the observation is made that the respective Governments of Barbados have had access to generous sources of money and manpower and yet their projects' portfolio has been plagued with weaknesses. It must be acknowledged that the success of programmes/projects at any level (macro/micro) is dependent on the presence of multiple variables interacting in a planned environment for the sole purpose of satisfying a need of identifiable beneficiaries. Unless the needs of these beneficiaries are clearly understood and defined the project process will be mis-directed and ineffective. Future rural development projects in Barbados should therefore be based on the real needs of targeted farmers and not on the vested interest of a few administrators associated with agricultural organizations or the agricultural production process. Against this background, the following project ideas should be developed in consultation with the existing and prospective farmers (including women and youths).

4.4.1 Land Distribution

The assumption is that there are persons who are in need of land to cultivate for agricultural purposes and who will do so as a business venture given the necessary access to financing, technical advice and technology marketing arrangements, etc. The basis for this project would be the idle lands or private holdings or BADC lands. The model to be used would draw on the experience of the SHLLP and the IRDP projects. Other components would include: irrigation development, mechanical cultivation scheme, credit, farmer training, monitoring and evaluation.



4.4.2 Livestock Development

Support for livestock development is based on the observation that numerous persons (especially small farmers) attempt to rear livestock under unacceptable husbandry practices whether they have land or are landless. These methods and practices are being threatened by legislation that will leave a potentially large group of farmers without a preferred enterprise. Their interest in being upgraded to commercial livestock businesses should be ascertained and projects formulated to satisfy this need. Such projects would include: selection of breeds, development of feeds and feeding practices, animal husbandry training, introduction of artificial insemination, credit, small business management training, market development and meat processing.

4.4.3 Marketing

The need to secure markets for crop and livestock output is a real one that should not be left solely to the producer to resolve. Specialized marketing organizations should be promoted to fill this need. Associations and relationships between producer and marketers could be developed and projects to provide physical facilities encouraged. This would be an area in which private sector initiative could be successfully developed but some form of coordination would be needed to ensure uniform grades, standards, packaging, etc. A marketing project would focus on such components as - market penetration, dissemination of market information (demand, prices, seasonality, variety, preference) training in post-harvest handling, transportation studies, food promotion, agro-processing, etc.

4.4.4 Human Resources

Not all persons interested in agricultural ventures are technically qualified to undertake the particular exercise. They are therefore in need of training and often are unable to access this because there are no training opportunities known or available to them. A programme of continuous farmer education aimed at part-time and prospective farmers as well as administrators would constitute a useful project. However, the development of such courses/training should be in consultation with



those who need the training. Training for practicing full-time farmers would be continued but strengthened. A review and evaluation of training courses offered by existing organizations should be undertaken with a view towards producing a training manual for use by interested persons.

4.4.5 Strengthening Existing Institutions

The rationalization of the role and functions of the various organizations involved with rural development is essential if wastage, inefficiencies are to be controlled and weaknesses strengthened. However, this action would be a long term project given the autonomy and voluntary nature of the respective organizations. In the meantime, the need for technical assistance personnel could be assessed and satisfied as a short term action. In fact, part of this technical assistance could be used to undertake the rationalization study. One of the umbrella organizations (e.g. BARNACS, NOW, BAS) would be the recipient of this technical assistance.

4.4.6 Consultancy/Technical Services Unit

As the activities of the NGO's expand to accommodate a shrinking Government involvement in rural development activities, the need for quick project assessments to support project extensions, re-designs, cyclical changes, loss of technical manpower, etc. will increase. To satisfy these needs of the executing agencies, access to consultancy/technical/accounting services would be an asset. Accordingly, consideration should be given to mobilizing qualified professionals into a Consultancy/Technical Services Unit as a resource base to be available to NGO's. Services paid for through this facility could be funded by International Agencies as Technical Assistance.

4.4.7 Environmental Impact

The heightened consciousness of the need to preserve the environment has become a vital consideration under all projects. In executing rural development projects, much by-products and waste from the production and/or processing activity are produced in sufficient volumes to be environmentally undesirable if disposed



carelessly. As a result of this occurrence there exists an opportunity to develop projects around the utilization of by-products and waste materials. Studies to protect the environment from soil erosion contamination of underground waste and environmental education programmes would constitute relevant projects.

4.4.8 Data and Information Gap

Historically, there has been a dirge of quantitative data on agricultural production on which to adequately formulate agricultural projects. This lack of data gathering continued through the life of most projects thus making it difficult to conduct important evaluations. Although in recent times internationally funded projects in the public sector improved data processing, the same cannot be said for most NGO's. In fact, the distinction should be made between data (raw material) and information (refined and consumable data). This is a potential project activity that would take project data, process it into information and disseminate it in the form of a statistical publication.

4.5 Implementation

The implementation of programmes/projects in the agricultural sector will take place against the future policy changes that of necessity must be adopted by Government. These new policy changes arose out of a study undertaken by the IADB through Sparks Companies Inc. late 1991. That report (see summary findings at Appendix 4) concluded that Government interventions throughout the economic structure "tend to prevent resource adjustment by administering prices, limiting competition, restricting access to inputs and by direct competition from Government capitalized firms. They also allocate markets and provide credit to non-credit worthy borrowers. By providing capital for inefficient producers, and restricting access to inputs, products and markets by potential competitors, the Government has increasingly reduced the island's competitive position in World markets".



The Report recommended several policy reforms including:

- eliminate the monopolistic concessions and restrictions on private competition in both domestic and foreign trade;
- phase out (or substantially reduce) direct and indirect subsidies now provided both to sugar and non-sugar agriculture (including fiscal incentives, price supports, duty waivers, direct marketing services, etc);
- systematically identify all parastatal and public programmes undertaken by private groups and evaluate private sector alternatives for each activity;
- design a technical institute with the sole limited purpose of providing essential research, development testing and technical assistance for Barbadian agricultural development.

Implicit in the policy reforms that are to be implemented is a new role for the Government, i.e., being a facilitator rather than a sponsor/manager. Consequently, the provision of services in the areas of extension, research, export promotion, mobilization of credit, the upgrading of marketing facilities would be the major areas of governmental activity in agricultural promotion and would respond to real needs. The establishment of a modern abattoir and the continual supply of water and access roads are the physical activities that should be concentrated on by Government agencies such as the Barbados Water Authority and the Ministry of Transport and Works.

If projects are to be implemented efficiently, coordination of efforts should take place in two critical areas. It is envisaged that the role of regional and international funding agencies will be a crucial one with respect to the availability of project funding and the rendering of technical assistance by way of provided expertise and training. The activities of these funding agencies should be coordinated to avoid duplication.

An important aspect of project management, lacking in most of the rural development projects, is the need to carry out continuous monitoring and evaluation exercises. Based on previous experience, Government should assume a leadership role in this exercise by appointing a Monitoring and Evaluation Officer in the



Ministry of Agriculture to carry out these important functions. Given Government's stated policy of controlling expenditure, funding of monitoring and evaluation activities should be secured through technical assistance. The major function of the Monitoring and Evaluation Officer would be to evaluate the impact of project designs and activities upon the targeted beneficiaries, recommend any changes needed for improvement, and also generate the data base needed for planning future rural development projects.

4.6 Recommendations

Given the proposed objectives, strategy, programmes/projects and implementation parameters of a future rural development programme for Barbados as discussed above, the following recommendations are presented in support of the programme.

1. Design

- 1.1 Rural development projects should be sustainable and have clearly defined objectives that are measurable, components that are detailed and compatible, a phased implementation schedule and a built-in monitoring and evaluation system.
- 1.2 In designing rural development projects efforts should be made to concentrate on investments rather than focusing on scattered investments aimed at providing something for everyone.

2. Scope

The size of rural development projects should be manageable given the available resources to maintain the services and inputs at the desired level during the life of the project.



3. Beneficiaries

Project beneficiaries must be clearly identified and should be active participants at all levels of project planning and implementation.

4. Project Monitoring and Evaluation

Each project should contain a monitoring and evaluation component which will provide the necessary data and information for effective management decision making.

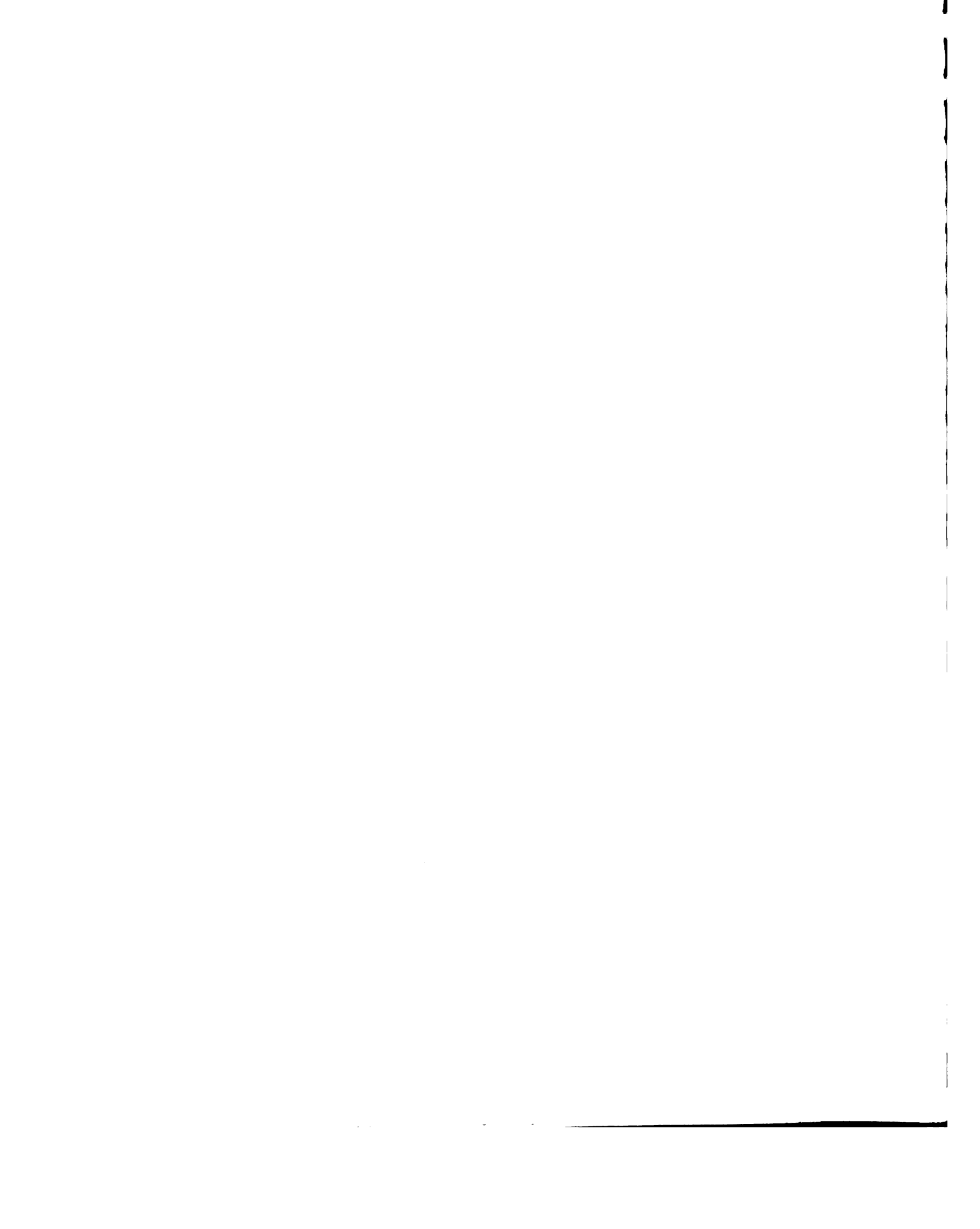
5. Project Management

5.1 There is evidence from existing projects that the level of competence among project administrators and the degree of efficiency within the project administrative system determine the extent of the success during implementation. Consequently, rural development organizations should seek to recruit persons with the technical and administrative capacity to manage their projects effectively.

5.2 The use of Technical Assistance personnel to strengthen a project management team is recommended where feasible, however, systems should be put in place to ensure there is technology transfer to local personnel. Where possible operational manuals should be a requirement.

6. Training

The rapid changes in the technology available to rural development project demand that project participants and administrators be subjected to on-going training on the various project attributes.



7. Marketing

7.1 Future rural development projects will only succeed if the output is price competitive in the market place. To achieve this, market characteristics, preferences, demand, price standards, etc., should be thoroughly researched and related back to the production phase of the project.

7.2 Production subsidies that were often available in the past to agricultural projects in Barbados will become minimal or non-existent in the future. As a result, more in-depth planning and analysis should be undertaken to establish the extent of the viability of the project including analysis of cost of production, post harvest handling and marketing and market opportunities.

8. Social Infrastructure/Services

Rural development projects in Barbados, which will be predominantly agricultural based will only succeed if satisfactory social infrastructure is available. To this end, ad hoc surveys of the various components of social infrastructure/services should be undertaken to assess the status of and need for these support services.

9. Environmental

The preservation of the environment is of such importance that all projects should be required to undertake an environmental impact assessment of its various components. Maximum efforts should be made to identify and develop environmentally friendly projects which create employment in rural areas and are both economically and socially sustainable.



APPENDICES



SPRING HALL LAND LEASE PROJECT

1. Description

1.1 Objective

The project was aimed at developing 402 acres of land at St. Lucy for settling 22 farmers who would produce sugar cane, food crops, other economic crops and livestock produce for local and export markets.

1.2 Components

The project consisted of the following components:

- (a) Land comprising the project site and buildings existing on residence for the project manager;
- (b) Repairs and rehabilitation of existing buildings to provide a residence for the project manager;
- (c) Infrastructure activities (plot surveys, on-farm roads improvement and installation of electricity);
- (d) Provision of farm vehicles, field and dairy equipment; and
- (e) A line of credit to facilitate the purchase of agricultural inputs required by farmers.

1.3 Financing

The project at appraisal was to be financed through a loan from the Caribbean Development Bank (CDB) totalling US\$927,050. In addition, the Government of Barbados' contribution was US\$236,100 and some \$25,800 were to be derived from internally generated funds. At completion, the actual contributions were CDB US\$919,000, Government of Barbados \$1,350,100. The allocation of these cost to the project components was as shown in Table A1.



Table A1
Spring Hall Land Lease
Investment Cost and Financing
(S'000)

ITEMS	TOTAL	ESTIMATED	VARIANCE
Land	556.60	201.10	(355.50)
BUILDINGS:			
- Manager's House	210.70	90.90	(119.80)
- Farm Houses	0.00	0.00	0.00
- Maintenance Workshop	0.00	25.00	25.00
- Machinery Shed	0.00	15.00	15.00
- Packhouse/Office/Storeroom	22.00	61.10	39.10
- Dairy Buildings (2 farms)	162.30	80.10	(82.20)
Sub-Total	395.00	272.10	(122.90)
EQUIPMENT:			
- Pickup Truck	112.90	20.00	(92.90)
- Tractors and Field Equipment	476.00	262.00	(214.00)
- Workshop Equipment	4.40	4.00	(0.40)
- Dairy Equipment (2 farms)	90.80	30.00	(60.80)
- Irrigation Equipment	755.30	226.60	(528.70)
- Office Equipment	10.80	3.97	(6.83)
Sub-Total	1,450.20	546.57	(903.63)
Standing Crop	0.00	11.28	11.28
DEVELOPMENT COSTS:			
- Road Development	12.40	9.20	(3.20)
- Plot Survey	35.60	45.00	9.40
- Electricity Supply	44.70	45.00	0.30
- Waterworks	189.20	0.00	(189.20)
- Fencing-Dairy Farm	41.50	17.00	(24.50)
Sub-Total	323.40	116.20	(207.20)
TOTAL CAPITAL & DEVELOPMENT COSTS	2,725.20	1,147.24	(1,578.00)
ESTABLISHMENT COST	1,099.40	316.30	(783.10)
ANCILLARY PROJECT:			
- Waterworks Expansion	196.00	141.35	(54.70)
- BNB Line of Credit	293.70	500.00	206.30
Physical Contingency	0.00	81.60	81.60
TOTAL RESOURCE COST:	4,314.30	2,186.49	(2,127.80)
- Price Contingency	0.00	115.39	115.40
- Legal Fees	12.00	0.00	(12.00)
- Commitment Fee	1.43	0.00	(1.40)
- Interest	179.10	75.90	(103.20)
TOTAL INVESTMENT COST	4,506.83	2,377.78	(2,129.00)
FINANCING BY YEAR:			
- Loan	1,838.10	1,854.10	16.00
- Equity	2,668.73	523.68	(2,145.00)
TOTAL FINANCING	4,506.83	2,377.78	(2,129.00)



1.4 Project Execution

1.4.1 Sub-components

At the implementation stage the three sub-components identified in the design were realized. With respect to the Barbados Water Authority programme, a new well was commissioned at Barrows, St. Lucy. The necessary pumping equipment and buildings were installed and the water was chlorinated before being pumped into the distribution system. A new main extending from this well and following the 200 foot contour line brings water to within 1,600 feet of the project site.

The between farm distribution system consisting of the booster pump, the underground distribution main and the take off points in the form of riser hydrants were purchased and installed by the project office.

The on-farm distribution system was installed for the 20 farms with additional mains for rental. The surface irrigation equipment on each farm is based on a simple standard design that allows irrigation of half an acre per set. The sprinkler system of irrigation was installed on the project and the water supply to each farm metered.

1.4.2 Cost

At the appraisal stage, Government had proposed a subsidized irrigation rate of \$0.80 per 1,000 gallons. In reality however, this intended rate did not materialize. At start-up the rate of irrigation water was set at \$2.50 per 1,000 gallons thereafter increasing as Table A2 indicates. The corresponding rates for normal domestic and commercial users are also given for comparison.

TABLE A2 CHANGES IN BARBADOS WATER AUTHORITY RATES (BD\$\$ PER 1,000 GAL.)				
ITEM	PRIOR TO APRIL 1, '82	APRIL 1, '82 - MARCH 31, '83	APRIL 1, '83 - MARCH 31, '84	APRIL 1, '84 - MARCH 31, '85
SHLLP	2.50	3.86	4.77	4.77
Domestic	2.84	5.00	6.14	7.73
Commercial	3.97	6.82	8.41	10.46

It should be noted that the retention of rate of water to SHLLP at \$4.77 per 1,000 gallons over a two year period was a deliberate policy aimed at containing the high cost of irrigation to the farmers. With the continued demand of the farmers for cheaper water, a study was undertaken of the two wells on the project on lots 14 and 18. The study recommended that the BWA supply should be substituted using these wells as source.

This change was effective and at present irrigation water is being supplied from one well at the rate of \$1.50 per 1,000 gallons.

1.4.3 Cultivation Equipment

The concept of Central Management facility for equipment has become a reality. This facility is in operation and the services are on a per acre basis instead of hourly as indicated at appraisal.

1.4.4 Support Infrastructure

The extent of road improvement was limited to the construction of two short sections of feeder roads. The required water and electricity supply were installed as required.

5. Evaluation of Spring Hall Land Lease Project

It is instructive to recognize that, from the beginning, the successful operation of the Spring Hall Land Lease Project depended heavily on the coordinated efforts of the BADC (the executing agency), the BNB (lender of housing funds to the farmers), the BWA (provider of water for irrigation purposes), the farmers, the Special Assignments Division of the Ministry of Agriculture, the Ministry of Finance, and Project Management.

As it turned out, some efforts did not receive full co-ordination and cooperation and, generally, problems surfaced from almost every quarter.

From a financial standpoint, the project experienced cost overruns of Bds\$2.2 million. The cost overruns resulted from delays by the BADC in satisfying conditions precedent to the first disbursement, incomplete lease arrangements for tenants, and reluctance of the BNB to make housing loans available to some tenants who appeared not to have suitable collateral.

Overall, the BADC and Government's performance in the implementation of the project has been summarized as satisfactory. Both the Government and the BADC continued to support the project during its operational stages by addressing several issues which had the potential to inflict adverse effects on the project (e.g. irrigation water distribution and housing), and provided farmers with the opportunity to participate in agricultural export marketing programmes. Government continued



financial support in meeting the operational deficits of the Central Project Management Unit (CPMU) and suggested an inherent desire on its part to ensure that a reasonable measure of success was achieved under the project.

5.1 Impact

It must be borne in mind that the objective of the project was to settle 22 farmers to produce agricultural and livestock products for local and overseas markets. The distribution of the farms by size is summarized in Table A3.

TABLE A3 DISTRIBUTION OF FARMS BY SIZE		
FARM SIZE (acres)	AS APPRAISED (No.)	ACTUAL (No.)
8 - 11.99	4	4
12 - 15.99	5	7
16 - 19.99	5	4
20 - 29.99	6	5
30 & over	2	1
TOTAL	22	21*

Source: Project Performance Audit Report on Spring Hall Land Lease Project. CDB. October 1991.

Note: * Amalgamation of the two dairy farms reduced the total number of farm units.

During the implementation of the project all of the 20 farms emphasizing crop production had been leased to selected tenants. Some of these leases, however, had to be terminated by Project Management as a result of non-cooperation and delinquency. Throughout the period of implementation, only nine farms have remained continuously in the hands of original owners. The BADC however, is continuing its efforts to have all farms occupied and at December 31, 1989, 16 farm units were occupied.

The project witnessed an unplanned disastrous decline in sugar cane cultivation within its boundaries.

The area under sugar cane cultivation declined from 167.3 hectares (368 acres) at the start of the project's implementation to a negligible amount by December 31, 1988. This shows that the areas



which had long been under sugar cultivation were, over time, abandoned by tenants. This decline in sugar cane cultivation within the project's boundaries, however, reflected the serious decline of sugar cane cultivation islandwide.

Food Crop production has turned out to be lower than expected, since only a small area (8% - 13% of the overall 402 acres) has been utilized for the cultivation of such crops. The area under cultivation has been estimated to range from 1.5 to 2.5 acres per farm. (Table A4).

TABLE A4 SPRING HALL LAND LEASE PROJECT PRODUCTION AND OTHER TARGETS			
	Estimated 1982	Actual 1982	Actual 1989
No. of available farms	22	22	21*
No. of farmers	22	19	16
Area in sugar cane (ha)	81	25	Nil
Area in food crops (ha)	56	\$20	\$20
Area for dairying (ha)	25	-	25
Yield of sugarcane (tons)	4,000	\$200	Nil
Yield of food crops (tons)	795	N/A	N/A
Milk Production (gals)	26,000	Nil	40,000 (Est)
Hired labour (units)	32	N/A	N/A
Central project staff (units)	8	8	6
Av. capital cost/farm (\$'000)	108	168	214
Implementation period (yrs)	2	2	8
Financial Rate of Return (%)	4	N/A	(neg)
Economic Rate of Return (%)	42	N/A	11

Source: Project Performance Audit Report on Spring Hall Land Lease Project. CDB. October 1991.

Note: * Decision was taken to reduce the number of farms through amalgamation of two proposed dairy farms.

N/A signifies information is not available.



At the end of 1989 milk production was estimated to be around 50% in excess of the amount targeted when the project was appraised. An estimated quantity of 40,000 gallons of milk is being produced by 50 cows housed on the amalgamated farm, and an additional 30 cows which are being reared on one of the crop farms.

The project has not yet made a significant impact on agricultural development in the island simply because it has not been able to bring all of its lands under production. After seven years of operation, 76% of the project's farms are tenanted but less than 25% of the project's land area is being cultivated. Indications are, however, that the recent installation of drip irrigation has stimulated output on many farms.

5.2 Problems

Co-operation among the farmers, project management and BADC at different times was a problem which contributed somewhat to the poor performance of the Project. Some of the selected farmers displayed unsatisfactory attitudes and earned poor credit ratings. The farmers, as a group, were required to cooperate with project management in the following areas:

- (a) attendance at training sessions on relevant aspects of agriculture;
- (b) development of production plans for farm units;
- (c) negotiations for credit with BNB;
- (d) provision of data related to timing and financing of crop establishment and cultivation.

Attendance at training sessions was generally unsatisfactory and seems to have been caused by the need of farmers to travel to the project site. Persistent problems stemming from inadequate irrigation, frustrations arising out of the inability to meet high water costs, and threats of eviction caused the level of cooperation from farmers to wane. Farmers often expressed the view that the BADC, being also a producer of food crops, was in direct competition with them. The inability of the project management to render assistance in the problematic area of crop marketing and the misplaced reliance of the farmers on the BMC as a market for their produce only added to the sense of frustration.

At present, project management plays no major role in the marketing activities of the farmers and consequently is unable to reliably inform the BADC, the Barbados Government, and other actors in the project about levels of production within the project area.

Some of the selected farmers displayed unsatisfactory management skills and poor credit ratings. These two factors, along with minimal capabilities and lack of experience in dealing with large acreage contributed heavily to the demise of the sugar crop within the project area.



Problems also surfaced in the socio-cultural domain. Whereas the non-provision of farm residences on some farms meant under-utilization of the farms and wastage of the most productive part of the work day, the ill-advised construction of high priced houses on some farms by project management did not achieve the desired effect. Some of the farmers who moved on to the farms expressed a preference for a community type housing scheme near the project area as a means of combating the high degree of loneliness which they were experiencing. Interestingly enough, the housing loans of nearly \$20,000 each disbursed to twelve tenants were not being repaid properly, some lease arrangements were terminated, whilst others defaulted. (Table A5)

Farm #	Cultivation \$	Other inputs \$	Farm rental \$	Water \$	Total \$
1	-	-	-	-	-
2	-	-	-	-	-
3	1,000.00	4,488.69	6,937.79	4,466.34	16,892.82
4	-	-	-	630.63	630.63
5	-	-	193.97	13,849.93	14,043.90
6	-	245.00	4,160.55	1,567.49	5,973.04
7	-	-	840.12	131.67	971.79
8	-	-	1,172.40	489.06	1,661.46
9	1,983.75	1,659.58	2,970.48	9,760.43	16,374.24
10	1,243.75	300.58	7,037.50	2,830.17	11,412.00
11	-	-	2,071.76	-	2,071.76
12	-	-	1,579.05	357.39	1,936.44
13	1,556.25	1,007.53	2,439.32	21,857.03	26,860.13
14	-	-	3,727.35	255.42	3,982.77
15	4,132.50	1,888.22	3,755.47	31,203.84	40,980.03
16	-	1,475.88	7,141.25	-	8,617.13
17	1,021.68	2,750.11	664.70	4,269.17	8,705.66
18	-	-	5,261.45	3,590.38	8,851.83
19	-	-	4,208.56	4,325.67	8,534.23
20	-	-	2,357.20	2,887.19	5,244.39
21	886.75	2,206.99	1,697.39	4,627.78	9,418.91
22	-	-	-	-	-
Total	11,824.68	16,022.58	58,216.31	107,099.59	193,163.16

Source: Project Performance Audit Report on Spring Hall Land Lease Project. CDB, October 1991.



A serious problem appears to have persisted in the area of irrigated water. Part of a preliminary agreement between the Ministry of Agriculture and the BWA centered around the promise (from BWA) of water to the farmers at an economical rate. Eventually, the BWA reneged on its initial promise and proceeded to charge the farmers at commercial water rates. These rates had the effect of increasing the farmers' operating costs.

A comprehensive evaluation of the SHLLP was undertaken in November 1986 by an independent consultant on behalf of the Executing Agency. The recommendations and conclusions made by that study constitute some pertinent lessons learnt and are reproduced here for consideration.

5.3 Summary Recommendations/Conclusions

1. The evaluation indicated that the farms were generally too large. Consequently, farm models were developed using various sizes and production activities. The results indicated that farm sizes between 4 and 15 acres can be viable and hence four farm model sizes 4, 8, 10 and 15 are recommended for implementation.
2. It is recommended to retain the existing arrangement whereby the BADC and Special Assignments Division are the umbrella bodies responsible for the implementation of the SHLLP. It is further recommended that a Project Operations and Review Committee chaired by the Deputy Chairman of the BADC and comprising representatives of BADC, Special Assignments Division, Ministry of Agriculture, the CDB and the BNB be established as a matter of priority to carry the project forward. The BADC should have the power to co-opt the services of agencies or individuals to the Committee as required.
3. The Tenant Selection Committee should be established as a sub-committee of the Project Operations and Review Committee. This sub-committee should attempt to reach the target group through better publicity.
4. The Tenant Selection Committee should be stringent in the selection of prospective tenants and should introduce a probationary training period of 6 months during which time the prospective tenants would be continuously assessed.
5. It was found that the existing farm models were too restrictive to allow for enough flexibility to guard against crop failure. It is recommended that future models reflect a more diversified approach to farming including livestock and forage production.
6. The previous amalgamation of the two thirty acre dairy units into a single sixty acre unit is supported. It is recognized that dairy units of much smaller sizes are viable and should be



encouraged. As corollary to this, Central Management should be flexible enough to allow individual tenants using their own resources to shift to dairy farming or to incorporate it as an activity in their models.

7. The project should acquire equipment of the appropriate capacity to effectively cultivate the heavy soils in the area.
8. A farmers' cooperative has been recently formed and is in operation on the project. This body should be used as the main vehicle for implementing the new marketing strategies outlined elsewhere in the document. The BADC should be urged to use its resources to nurture the co-operative effort at the project particularly in the area of marketing.
9. With respect to SHLLP's marketing strategy, coordination with the national marketing strategy - a prerequisite for success - is recommended.
10. To implement the modified SHLLP, the existing central management staffing structure should be strengthened with the inclusion of a projects officer with skills in farm planning, management, extension and training.
11. It is recommended that training of project participants and staff should become an integral part of the SHLLP and that this training be coordinated by Central Management.
12. It is recommended that a three year implementation period for the modified SHLLP be adopted, at the end of which, any technical staff assigned should be withdrawn having completed their involvement in the project. Any further assistance would be undertaken from the general BADC technical resources.
13. The eventual aim in respect of Central Management would be to divest management responsibilities of the operations and assets (irrigation, cultivation and dairy facilities) to the farmers' cooperative with BADC retaining an advisory role.
14. The remaining housing units to be provided on the SHLLP should be constructed by Central Management as part of its new capital investment programme. This is to facilitate the concept of providing a house as part of the farm holding.
15. The recommendation with respect to irrigation is that a more economic alternate irrigation system be introduced and an additional well be commissioned to supplement the water resources. In addition, efforts should be made to monitor the water supply with a view to storage should it become necessary. Attempts should be continued at providing irrigation water more efficiently including training in proper water use.



16. The excess lands resulting from the reduction of farm units should be held in a 'Land Bank' to be managed by Central Management but operated through a BADC estate.
17. In light of the changes of the cost structure of the project and in order to simplify the administrative demand (on the tenant and the project) of the numerous charges, a comprehensive rate structure review should be undertaken as part of the five year review of the Tenant Agreement which is due in 1987.
18. With respect to the debt situation of tenant farmers, it is recommended that the debt portfolio be carefully examined with a view towards writing off unrecoverable debts and rescheduling the remainder on reasonable conditions.
19. The existing lease Agreement of the project should be so modified as to incorporate the changes contained in the recommendations pertaining to the future direction of the SHLLP.
20. The SHLLP was designed as a model for future agrarian reform projects. The evaluation revealed deficiencies in basic planning parameters such as:
 - geographical location;
 - general project layout;
 - planning for social and cultural needs of participants; and
 - the concept of family farm development.

It is recommended that planning for future projects of a similar nature pay special attention to the elimination of these deficiencies.

INTEGRATED RURAL DEVELOPMENT PROJECT

1. Background to the Rural Development Project

1.1 Origin of the Project

Barbados' interest in a Rural Development Project (RDP) was first communicated to the IDB in 1977 and was further developed during 1978, resulting in the preparation of the final Project Report in 1979. During the 1977 - 1979 period, the concept and design of the project were subjected to various modifications.

The Project was conceived as a Rural Development Scheme to provide the means for families presently residing on plantation tenancies to buy the land they rent, while at the same time, providing assistance which would result in the improvement of the present socio-economic environment.

While the core component remained, that is, security tenure to tenants on plantation lands, the social components - rural electrification, and construction of community centres were omitted and the components providing for potable water and feeder roads were drastically reduced. With the reduction of this social component the name of the Project was changed from Integrated Rural Development Project (IRDP) to Rural Development Project (RDP) and there was a corresponding increase in emphasis on the agricultural development aspects of the Project. Indeed the Project beneficiaries were expanded beyond the confines of the plantation tenancies to include small farmers contiguous to the project area.

A further significant change in the Project design related to the Executing Agency. The original proposal sought to create a new institution to implement the project; however, the final decision was to restructure the BADC to undertake this function.

The review of the changes and the activities of the two year period preceding the preparation of the final project report suggests that the IDB had a major influence on the final design of the RDP.



1.2 The Project

1.2.1 Objectives

The Rural Development Project was designed to:

- (a) increase agricultural diversification and increased food production in Barbados to supply the domestic and tourism demand for foodstuffs; and
- (b) raise the productivity and incomes of those small farmers, both tenantry and smallholder families, participating in the project; and moreover, in the case of the tenantry families, to provide a legal and institutional mechanism to permit them to acquire the lands on which they reside.

1.2.2 Project Area

The project area as detailed in the project document consists of about thirty (30) rural development units consisting of contiguous groupings as tenantry and small farmer holdings. It was envisaged that the project would include a total area of approximately 1,000 net cultivated areas and affecting some 1,500 families. Of this total, about 500 acres of land located in low rainfall areas would be irrigated and about 500 acres located in the intermediate and high rainfall areas of the island would operate under rainfed conditions. The final selection of units for the project are shown in Table B1.



TABLE B1
RURAL DEVELOPMENT PROJECT
PROFILE OF DEVELOPMENT UNITS

UNIT	PARTICIPATING FARMERS			
	TOTAL ACREAGE OF UNIT	NUMBER	ACREAGE	AVERAGE SIZE
<u>RAINED</u>				
1. Greens	41	29	26.4	0.91
2. Workmans/Thorpes	75	35	41.1	1.17
3. Ellerton	47	23	16.2	0.70
4. Eastlyn/Good Intent	23	24	14.5	0.60
5. Newbury	46	28	28.4	1.01
6. Bridgecot/Bellair/Roach Village	N/A	39	36.0	0.92
7. Newcastle	184	24	121.5	5.06
8. Massiah Street/Rosegate	50	21	18.8	0.89
9. Sturges	68	22	54.5	2.48
10. Jackmans/Belle	N/A	17	42.7	2.51
11. Drax Hall/Hope	21	20	15.4	0.77
12. Drax Hall/Greens	39	21	16.2	0.77
SUB-TOTAL		303	431.7	1.42
<u>IRRIGATED</u>				
1. Fairview	56	30	42.5	1.41
2. St. Patrick	32	22	26.0	1.18
3. Marchfield	85	40	44.2	1.10
4. Kirtons/Heddings	145	73	92.1	1.26
5. Gibbons Boggs	N/A	24	141.5	5.89
6. Pegwell Boggs	N/A	37	66.9	1.80
7. Wilcox	65	25	38.2	1.52
8. Haggatt Hall	109	67	67.7	1.01
9. Salters	74	18	44.6	2.47
10. Union Hall	127	32	90.1	2.81
11. Silver Hill	46	20	34.2	1.71
SUB-TOTAL		388	688.0	1.77
TOTAL		691	1119.7	1.62

Source: Evaluation of the Rural Development Project. Agricultural & Management Consultants Limited. June 1988

* N/A = Not Available



1.2.3 Selection Criteria

The criteria for the selection of development units as provided in the Project Report were as follows:

- (a) that the appropriate technical conditions exist for successful agricultural development in view of the soil, climate, hydrology, topography and local ecology of the area;
- (b) that the irrigation units selected would be based upon prior detailed technical studies of water resources conducted by the Borrower and would be no less than 20 acres, except as the Bank might otherwise agree;
- (c) that participants in the project should represent:
 - (i) in the case of irrigation units, 75% of the households within the unit; and
 - (ii) in the case of rainfed units, 50% of the households within the unit;
- (d) that the minimum number of households participating in the project in the case of rainfed units, should be 15 per development unit;
- (e) eighty percent (80%) of the individual participants in each development unit of the project should have demonstrated that their total assets did not exceed BDS \$100,000 at the time of their entry into the Project.

1.2.4 Project Components

The RDP consisted of two (2) major sub-programmes and a Technical Co-operation Agreement component. The sub-programmes were:

- (a) an infrastructure and agricultural services sub-programme of multiple works; and
- (b) a credit sub-programme.

Sub-Programme A: Infrastructure and Agricultural Services

The following facilities, materials and installations would be provided through this sub-programme.

- (i) Irrigation Infrastructure: Pumping stations, and mains to periphery of the irrigation sites; electricity connections from the pumping stations to the nearest Barbados Light and Power



Company sub-station; distribution systems within each irrigation unit; and on-farm irrigation facilities.

- (ii) Potable Water Supply Improvements: Supply and installation of distribution mains to the selected development units and service connections for approximately 400 households.
- (iii) Internal Roads: Construction of approximately four (4) miles of selected internal roads of appropriate width and design standard.
- (iv) Buildings, Workshop Improvements and Other Improvements: Expansion of and improvements to agricultural and equipment maintenance stations and the provision of plant and construction materials associated with agricultural development.
- (v) Machinery and Equipment: The purchase of utility vehicles, tractors and implements and related maintenance unit. Experimentation equipment was also to be provided.
- (vi) Extension Services: Recruitment of 8 extension officers to service the project farmers.

Sub-Programme B: Agricultural Credit

Agricultural credit for both short term crop production and longer term agricultural investments would be provided to the farmers participating in the Project. This Credit Programme will be administered by the BNB, in consultation with the Project Execution Unit (PEU) which would provide assistance to the credit applicant in preparing his cropping plan and application for credit to the BNB.

1.2.5 Technical Co-operation Agreement

The Technical Co-operation Agreement between the IDB and the Government of Barbados was in the form of a grant to finance a programme to provide expert advice to the BADC and the BNB in order to assist these institutions in meeting the objectives of the RDP and to strengthen their respective institutional, administrative and technical capabilities.

1.2.6 Project Management

The project was managed by a Project Execution Unit (PEU) created for this purpose and was operated under the aegis of the BADC as Executing Agency. The PEU was headed by its own Project Manager and comprised an Engineering Operations Division and an Agricultural Development Division which supervised all aspects of the Infrastructure and Agricultural Services Sub-Programme execution and liaised with the BNB in the operation and co-ordination of the activities of the Credit



1.2.7 Project Costs

The total costs for the financing of the proposed project was estimated to be the equivalent of US \$6.3 million. The distribution of these funds by category of investment and source of resources is shown in Table B2.

TABLE B2
RURAL DEVELOPMENT PROJECT
BARBADOS - RDP ESTIMATED COST IN US\$'000

CATEGORIES	IDB FUNDS	GOB TOTAL	TOTAL COST
1. <u>ENGINEERING & ADMIN.</u>	40	410	450
1.1 Studies	40	-	40
1.2 Supervisory & Admin.	-	410	410
2. <u>PERMANENT IMPROVEMENTS</u>	2,012	700	2,712
2.1 Irrigation Intras.	1,490	305	1,795
2.2 Potable Water	336	144	480
2.3 Internal Roads	103	161	264
2.4 Rural Construction	83	90	173
3. MACHINERY & EQUIPMENT	378	-	378
4. AGRICULTURAL CREDIT	1,040	360	1,400
5. ASSOCIATED COSTS	360	700	1,060
6. <u>FINANCIAL CHARGES</u>	270	30	300
6.1 Credit Commission	-	30	30
6.2 Interest	229	-	229
6.3 Inap. & Supervision	41	-	41
TOTALS	4,100 <u>1/</u>	2,200	6,300
Percentages	65.0	35.0	100.0

1/: Included \$109,000 for local costs.



1.3 Evaluation of Rural Development Project

1.3.1 Execution

The successful operation of the Rural Development Project rested heavily on the coordinated efforts of the BADC (the executing agency), the Government of Barbados, The BNB (provider of agricultural credit to the farmers), the BWA (provider of potable water), the farmers, the Special Assignments Division of the Ministry of Agriculture, the Project Execution Unit (PEU), and the project consultants.

All efforts were not coordinated smoothly and consequently some problems surfaced. For example, whereas the BADC was the project's executing agency, responsibility for seeking and approving government funds for the project rested with the Special Assignments Division. This situation of dual responsibility resulted in documented communication difficulties.

Additionally, there were instances where the lack of dynamism on the part of the PEU, the slow decision-making process of the BADC, and too dominant a role played by the consultants contributed to the development of situations that were not in the best interests of the project.

On the positive side, the Government of Barbados went beyond the fulfillment of its official commitments to the project and aided the implementation of the project by passing two legislative acts - the Tenantry Freehold Act, and the Options to Purchase Act - which enabled tenants to purchase these lands.

From a financial standpoint, the actual project cost has been given as US \$5.6 million and this represents 11% less than the appraisal estimates of US \$6.3 million.

1.3.2 Impact

The task of gauging the impact of the Rural Development Project on the development of the farmers and the attainment of stated objectives has been made difficult by the absence of a proper monitoring and evaluation system. Nevertheless, through use of Sample Surveys and reviews of farmers' records, the conclusion has been drawn that the RDP has made a positive contribution to the well-being of participating farmers and their families.

The evaluation survey showed clearly that the project had a tremendous impact on not only increasing the farming knowledge of participating farmers, but also on the introduction of technological devices and beneficial techniques to the farmers generally. (Tables B2 and B3)



TABLE B2
RURAL DEVELOPMENT PROJECT
CHANGES IN FARMERS' KNOWLEDGE OF FARMING AFTER RDP-
SURVEY RESULTS

	PERCENTAGE RESPONSE			
	INCREASED KNOWLEDGE	DECREASED KNOWLEDGE	SAME KNOWLEDGE	<u>1/</u> OTHER
Irrigated Farms <u>2/</u>	51.0	-	83.3	-
Rainfed Farms <u>2/</u>	49.0	-	16.7	-
TOTAL <u>3/</u>	71.8	-	25.4	2.8

1/: Farmers not responding or not active in farming.

2/: Percentage distribution between irrigated and rainfed farms for the particular response.

3/: Percentage distribution/total response.

TABLE B3
PERCENTAGE OF FARMERS USING SUCH SERVICES

TYPES OF SERVICES USED	BEFORE RDP %	AFTER RDP %
Extension Services	29.6	87.5
Credit Services	4.2	32.4
Tractor Services	50.7	81.7
Marketing	-	29.5



It is interesting to note that before the provision of irrigation services under the project, 90.1% of the farmers surveyed used domestic water supply for irrigation purposes. One year after irrigation services were provided, 89.2% of the farmers sampled who had access to these irrigation services expressed their satisfaction. This level of satisfaction should now be used as a basis for encouraging greater participation by farmers under the irrigation programme in an effort to justify the irrigation investment costs of Bds \$1.9 million.

Despite the lack of project data, a project evaluation exercise estimated that Bds \$3.4 million worth in agricultural output was generated from the project. However, sample data indicate that only 43.7% of farmers sampled experienced increased yields through participation in the project, whilst 10% indicated reductions in yields. (Table B4).

TABLE B4 RURAL DEVELOPMENT PROJECT CHANGES IN YIELD AFTER RDP - SURVEY RESULTS				
	PERCENTAGE RESPONSE			
	INCREASED YIELD	DECREASED YIELD	SAME YIELD	1/ OTHER
Irrigated Farms <u>2/</u>	64.5	28.6	60.0	-
Rainfed Farms <u>2/</u>	35.5	71.4	40.0	-
TOTAL <u>3/</u>	43.7	9.9	35.2	2.8

1/: Farmers not responding or not active in farming.

2/: Percentage distribution between irrigated and rainfed farms for the particular response.

3/: Percentage distribution of total response.

It is quite possible, though, that these results reflect some inability on the part of farmers to reap the full benefits from the major components of the project which had been in operation less than a year when the evaluation was undertaken.

Other benefits identified by the sample survey results showed a link between increased yields and increased income under the project. 42.2% of the farmers recorded increased incomes, 16.9% experienced decreased incomes, 33.8% registered unchanged income positions, whilst the other 7.1% had either become inactive or unresponsive. Full-time farming employment jumped from 34.3% before the RDP to 52.2% after implementation. This increased full-time farming activity, acting in concert with a shift in emphasis away from sugar cane to non-sugar crops helped the project to achieve success in one of its stated objectives - agricultural diversification. Before the project, 31% of the farmers



surveyed grew sugarcane alone or in rotation with other crops. After the project was implemented, the proportion of farmers sampled who grew sugar cane plummeted to only 4.2% whilst the amount producing vegetable and other food crops soared to over 66%.

1.3.3 Problems

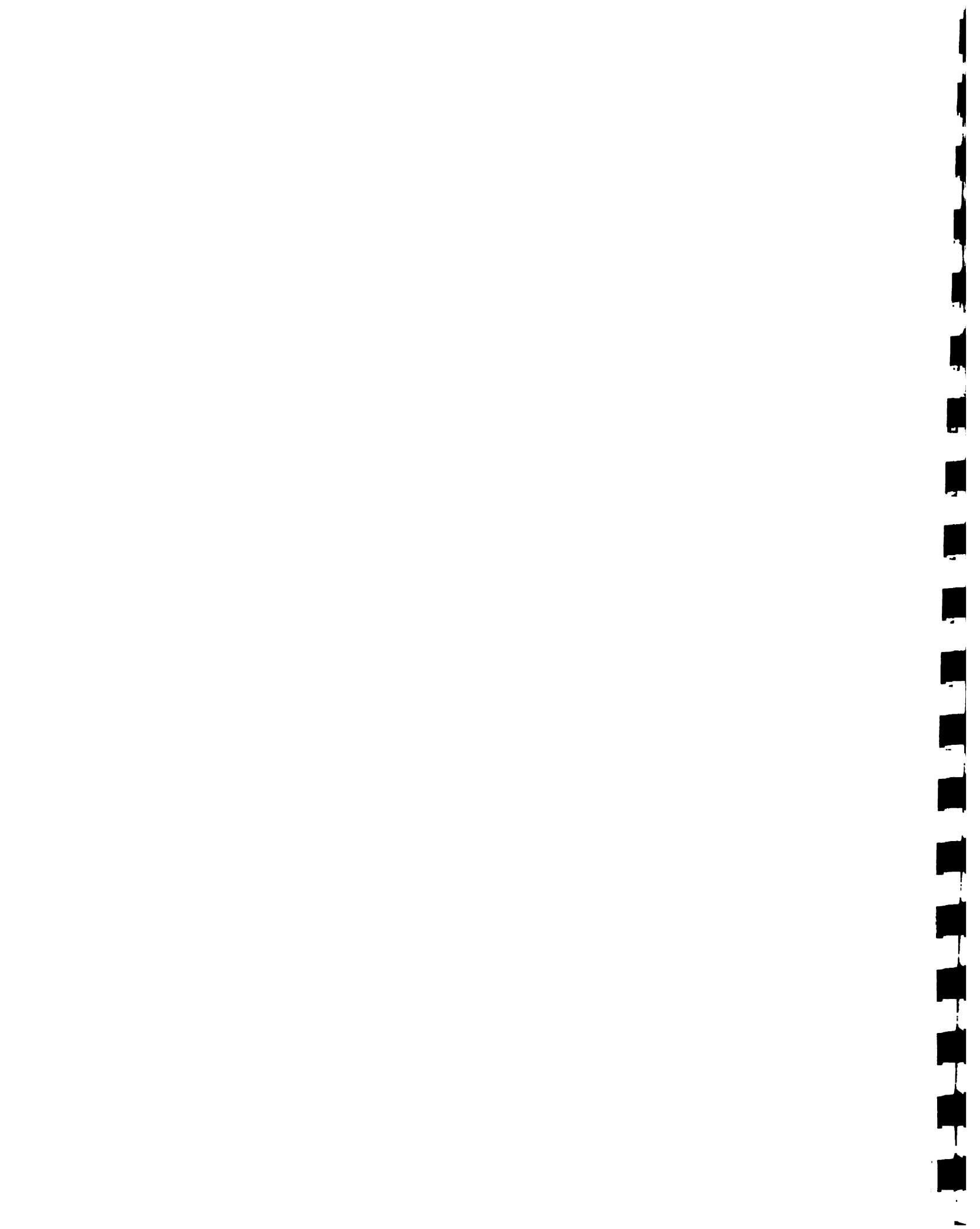
In view of the fact that no comprehensive feasibility study was carried out on the RDP it is not surprising that the project experienced some problems in the basic areas of selecting and identifying specific farm units for participation. The minimum level of participation required of both rainfed and irrigated units proved difficult to achieve.

Whereas phase 1 of the irrigation installation programme experienced little difficulty, phases II and III of the programme suffered setbacks as a result of lack of experience on the part of the selected contractors, severe adverse weather conditions, design inappropriateness in some of the pump systems, and a change in specifications from water lubricated to oil lubricated pumps.

Although it is widely accepted that 4-WD tractors are better suited for ploughing operations, there were several occasions on which 2-wd tractors had to be used. The frequent use of 2-WD tractors resulted in a lower quality of cultivation services to farmers who also complained about the timeliness of the supply of such services. Obsolete tractor models, inadequate servicing and supply of spare parts, and tractors being holed up in the workshop for extended periods of time, were some of the factors which prevented management from providing adequate and timely cultivation services to farmers in the project. During the evaluation exercise, farmers hinted that the RDP tractor operators were not fully competent whilst RDP Management countered by suggesting that a great deal of the small farmers' soils were too shallow and rocky to be cultivated properly.

Problems also surfaced in the areas of marketing and finance. Results from the survey indicated that almost 50% of the farmers were not satisfied with marketing services provided under the project. Low prices, lack of markets, and inadequate transportation services were highlighted as the major reasons for dissatisfaction.

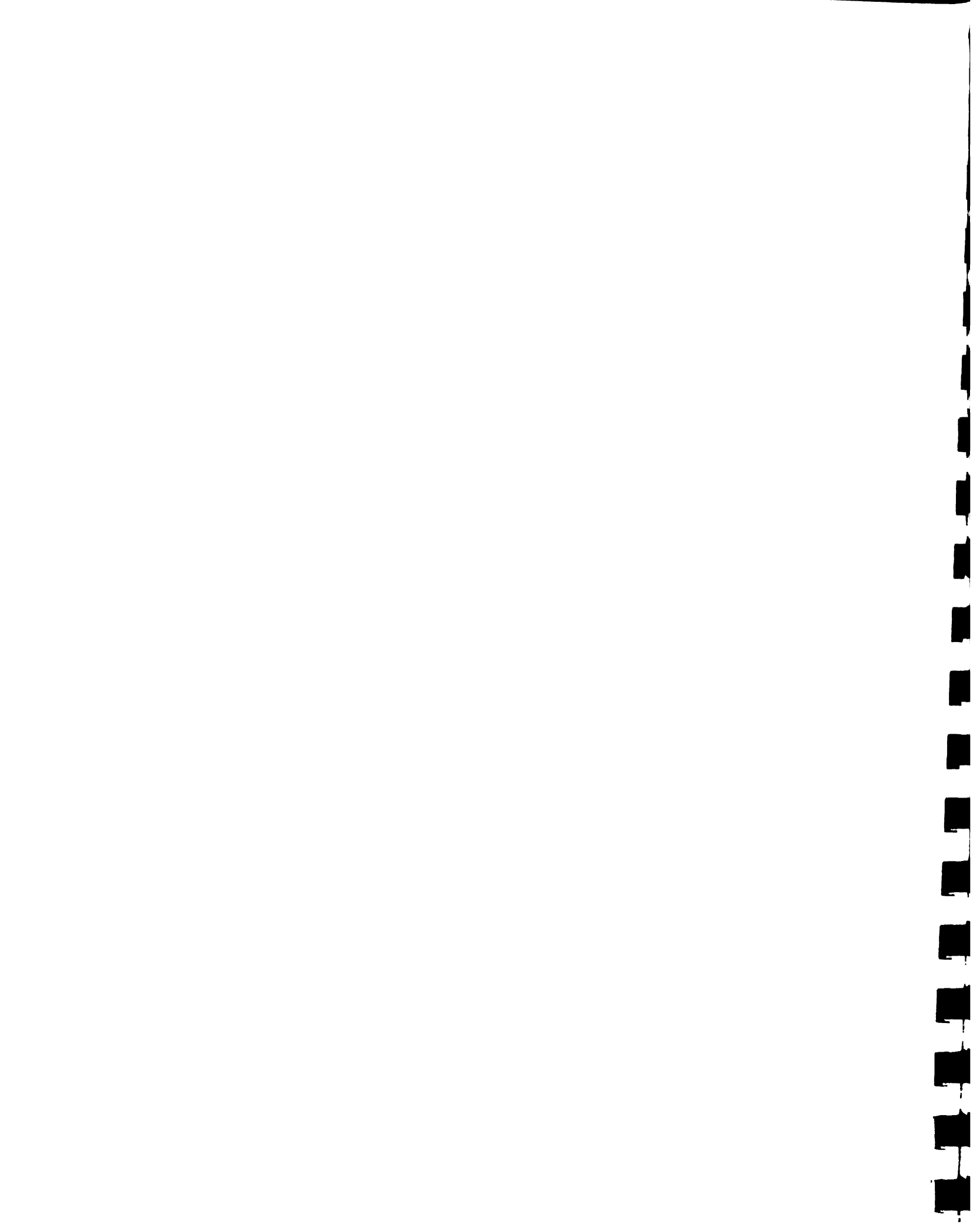
A credit sub-programme had been implemented with the objective of disbursing loans to farmers to aid them in crop production, and purchasing of equipment and livestock. The performance of these loans turned out to be poor and at December 31, 1986, 74% of loan accounts were in arrears with 60% of these delinquent accounts being over two years old.



1.3.4 Lessons Learnt

The recommendations made by the evaluation exercise of the RDP contain several points that would serve as lessons to be learnt from this project. The relevant recommendations are therefore reproduced below:

1. In general, the Rural Development Project (RDP) would have been better served if a comprehensive Feasibility Study had been undertaken to identify and select the specific farm units for the project. In so doing, the time and cost over-run incurred would have been considerably less and implementation less problematic. The various agencies involved in the process of project identification, formulation and implementation would do well to take cognizance of this.
2. The lack of clarity of roles and the failure of the Project Execution Unit (PEU) to assert itself will always lead to bad decision making with its consequent adverse affect on the project. It is recommended for future projects that the roles and responsibilities of groups participating in the implementation process should be clearly identified and detailed.
3. The BADC remained the legal Executing Agency for the RDP while the responsibility for final accounting for counterpart expenditure on the RDP was that of the Permanent Secretary - Special Assignments Unit of the Ministry of Agriculture, Food and Fisheries. Whereas it does not appear that this shared responsibility for the RDP contributed to any undue delays in project implementation, it is an incongruity which could adversely affect decision-making and should be avoided in the future.
4. In evaluating the system of procurement of services, it became evident that the selection criteria were not always meticulously applied in obtaining contract services. It is therefore recommended that for future projects, especially with specialized components where skills and experience are not readily available, care must be taken to ensure that these requisite parameters have been achieved at the expense of price.
5. In the interest of efficiency, and with the completion of the RDP, the cultivation services now provided to the RDP farmers should be amalgamated into the general BADC's small farmers cultivation scheme.



6. It is recognized that the Ministry of Agriculture, Food and Fisheries is the appropriate umbrella body for the provision of extension services. However, for the proper maintenance of the RDP in the short run it is necessary to retain some aspects of extension under BADC to ensure that the benefits intended are realized.
7. It is recommended that a Programme Review Committee chaired by the Deputy Chairman of the BADC and comprising representatives of the BADC, Special Assignments Division, Ministry of Agriculture, the BNB and participating small farmers be established as a matter of priority to monitor and evaluate the operations of the on-going RDP and to carry the Programme forward.
8. It should be noted that this project evaluation exercise was constrained by the absence of data both at the farm and project levels and this naturally made a quantifying of project impact that much more difficult. It is therefore suggested that a further evaluation (ex-post) of the impact of this project on its beneficiaries is necessary and would be useful to development planners.
9. It is recommended that any future Rural Development Programme should not be restrictive but should reflect the widest possible application of diversified agricultural production which would include such activities as livestock production, crop production, floriculture, tree crops and agro-processing.
10. The Executing Agency for the future Rural Development Programme should be the Ministry of Agriculture, who will be responsible for the administration of the Rural Development Investment Fund (RDIF) the source of funding for RDP sub-projects. This RDIF will derive its resources from the Government and International Funding Agencies.
11. Farmer Cooperatives should become the focal points for the implementation of future RDP's and accordingly the Executing Agency should seek to mobilize farmer co-operatives to facilitate the effective delivery of goods and services.



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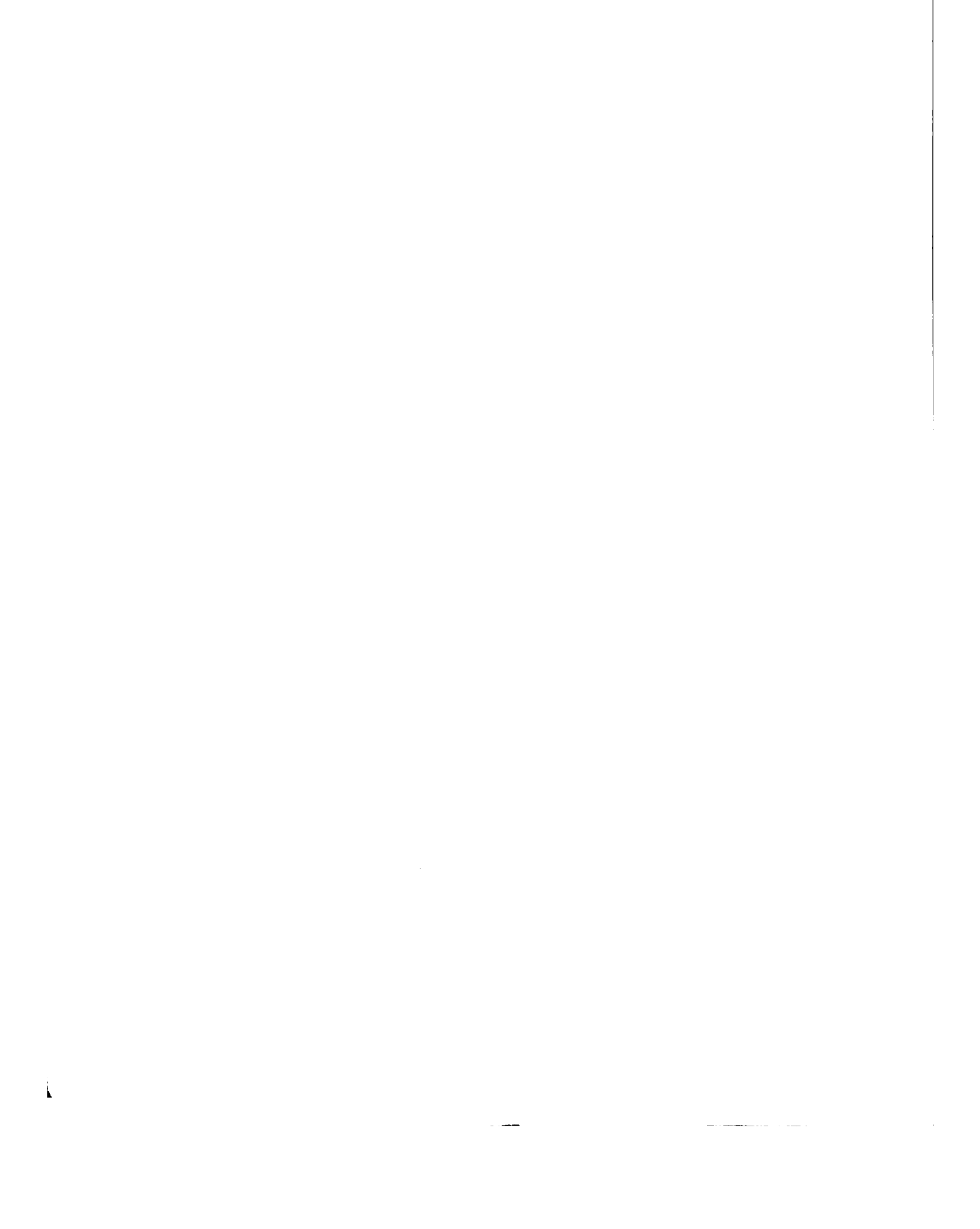
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1. Introduction

This is a review of the Barbados agricultural sector, focussing on selected key economic issues, program objectives and recommendations for reform. It is intended for discussion by officials of the Inter-American Development Bank, the Government of Barbados and other concerned persons.

2. Price and Trade Policy

2.1 Statement of Problem

Barbados is an "island economy" with a small population, limited domestic markets and high costs. It can be argued that its unique physical characteristics and small size limit application of neo-classical criteria to policy decisions, and the Government of Barbados (GOB) has intervened widely in response to perceived market failures. Past reliance on combined social and economic criteria has led to a number of policies with unintended consequences (capital losses, economic distortions through hidden subsidies and costs, inefficient resource allocations, and others).

Barbadian agriculture (as well as other sectors) has had severe difficulty competing in world markets through much of the 1980's because its costs are high and its efficiency low (the result of a relatively high wage rates, as well as low productivity).

Production sectors traditionally expand and contract in response to levels of net returns (and investment failure and success normally defines resource values). The result is shifts in resource use until costs become competitive and attract investment. However, the production adjustments necessary to increase efficiency Barbadian agriculture have not occurred, in part because of lack of productive alternatives and because of GOB intervention.

GOB intervenes throughout the economic structure in numerous ways; together with the current financial overview of selected parastatal corporations. These interventions tend to prevent resource adjustment by administering prices, limiting competition, restricting access to inputs and by direct competition from Government's capitalized firms. They also allocate markets and provide credit to non-credit worthy borrowers.

By providing capital for inefficient producers, and restricting access to inputs, products and markets by potential competitors, the GOB has increasingly reduced island's competitors position in world markets. For example, food and beverage imports that were Bds\$155.3 million in 1985 increased 35% to Bds\$209.4 by 1990. Exports of food and beverages increased by BDS\$11.7 during 1985 - 90,



but net import grew by 2350000 units. At the same time, the amount of rice that increased significantly.

2.2 Programme Objectives

The programme has three specific objectives:

- 1) Create a new economic environment that improves business opportunities and stimulates economically efficient and profitable investment.
- 2) Improve significantly the efficiency of agricultural resource use.
- 3) Improve the quality and variety of foods available to consumers, reduce their cost and reduce costs to taxpayers of support for the agricultural and food system.

3. Recommended Policy reforms

As a result of the policy review, the following recommendations are presented:

- i) Eliminate the monopolistic concessions and restrictions on private competition in both domestic and foreign trade. For example, the use of import/export licenses should be phased out, and replaced with modest tariffs.
- ii) Phase out (or substantially reduce) direct and indirect subsidies now provided both to sugar and non-sugar agriculture (including fiscal incentives, price supports, duty waivers, direct marketing services, etc.).
- iii) Phase out administered prices and controls on consumer food products (providing more direct assistance to low income consumers) and on agricultural products and raw materials.
- iv) Eliminate non-tariff barriers to trade of agricultural production inputs and products.
- v) Provide any protection thought to be absolutely necessary through variable levies.

Because the impacts of GOB interventions are so pervasive, it is not possible to define the full range of impacts of phasing them out. Retail prices of a broad range of products would fall (including sugar, milk, poultry and others). However, by reducing restrictions on domestic resource use and trade, new domestic and international markets could be developed and exploited and overall returns to Barbadian resources increased.



1.4.1 Statement of Problem

High cost, ineffective parastatal firms compete with commercial operations in several aspects of agricultural production and marketing in Barbados. In general, these operations provide high cost services, have confused economic and social purposes, are highly fragmented among institutions (for example, BADC, BSIL, BMC, BAS and other groups and the Ministry of Food and Agriculture have overlapping and often competing purposes and programmes) and provide weak support for economic development.

1.4.2 Programme Objectives

The programme has the objective of increasing the focus and effectiveness of support for agriculture and reducing public costs. It would:

- a) diminish public sector involvement and limit its expenditures to those essential and unavailable from the private sector;
- b) strengthen the market infrastructure, including regulatory, economic, development, marketing, research and extension support for private agriculture;
- c) concentrate on improving the services available to support sector development, especially for non-sugar agriculture.

1.4.3 Recommended Policy Reforms

Support service strengthening reforms are recommended in seven areas:

- 1) Systematically identify all parastatal and public programs undertaken by private groups (together with the specific activities, staff, costs, economic and social impacts of each).
- 2) Evaluate private sector alternatives for each activity.
- 3) Design a transition scheme to eliminate redundant or contradictory parastatal activities, together with high priority needs to strengthen essential services.
- 4) Develop and adapt suitable systems of grades and standards for use by the commercial trade in selected commodities.
- 5) Develop self-supporting market information programmes for all major non-sugar crops and livestock.
- 6) Design a technical institute with the sole, limited purpose of providing essential research, development, testing and technical assistance for Barbadian agricultural development.
- 7) Design a check-off scheme so that producers provide a significant share of R&D costs, and most technical assistance costs.



GOB now provides about 2.25% of its expenditures for direct economic support of agriculture; additional amounts come from industry (including 1.2% of sugar sales revenues) for research and development, in addition to publicly funded activities by non-sugar groups. By eliminating those activities that compete with private firms, consolidating public support for high priority market infrastructure support efforts and by developing sources for private funding, both stronger support and lower GOB expenditure would be expected to result.

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WHAT IS IICA?

The Inter-American Institute for Cooperation on Agriculture (IICA) is the specialized agency for agriculture of the inter-American system. The Institute was founded on October 7, 1942 when the Council of Directors of the Pan American Union approved the creation of the Inter-American Institute of Agricultural Sciences.

IICA was founded as an institution for agricultural research and graduate training in tropical agriculture. In response to changing needs in the hemisphere, the Institute gradually evolved into an agency for technical cooperation and institutional strengthening in the field of agriculture. These changes were officially recognized through the ratification of a new Convention on December 8, 1980. The Institute's purposes under the new Convention are to encourage, facilitate and support cooperation among the 32 Member States, so as to better promote agricultural development and rural well-being.

With its broader and more flexible mandate and a new structure to facilitate direct participation by the Member States in activities of the Inter-American Board of Agriculture and the Executive Committee, the Institute now has a geographic reach that allows it to respond to needs for technical cooperation in all of its Member States.

The contributions provided by the Member States and the ties IICA maintains with its twelve Permanent Observer Countries and numerous international organizations provide the Institute with channels to direct its human and financial resources in support of agricultural development throughout the Americas.

The 1987-1991 Medium Term Plan, the policy document that sets IICA's priorities, stresses the reactivation of the agricultural sector as the key to economic growth. In support of this policy, the Institute is placing special emphasis on the support and promotion of actions to modernize agricultural technology and strengthen the processes of regional and subregional integration.

In order to attain these goals, the Institute is concentrating its actions on the following five programs: Agricultural Policy Analysis and Planning; Technology Generation and Transfer; Organization and Management for Rural Development; Marketing and Agroindustry; and Animal Health and Plant Protection.

These fields of action reflect the needs and priorities established by the Member States and delimit the areas in which IICA concentrates its efforts and technical capacity. They are the focus of IICA's human and financial resource allocations and shape its relationship with other international organizations.

The Member States of IICA are: Antigua and Barbuda, Argentina, Barbados, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, the Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, the United States of America, Uruguay and Venezuela.

The Permanent Observer Countries of IICA are: Arab Republic of Egypt, Austria, Belgium, Federal Republic of Germany, France, Israel, Italy, Japan, Netherlands, Portugal, Republic of Korea and Spain.

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