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S E C O N D D R A F T



**THE GENERATION AND TRANSFER OF TECHNOLOGY
TO SUPPORT COTTON PRODUCTION IN THE CARIBBEAN**

VOLUME III of 111

**MACROECONOMIC AND AGRICULTURAL SECTOR DATA
OF PARTICIPATING COUNTRIES**

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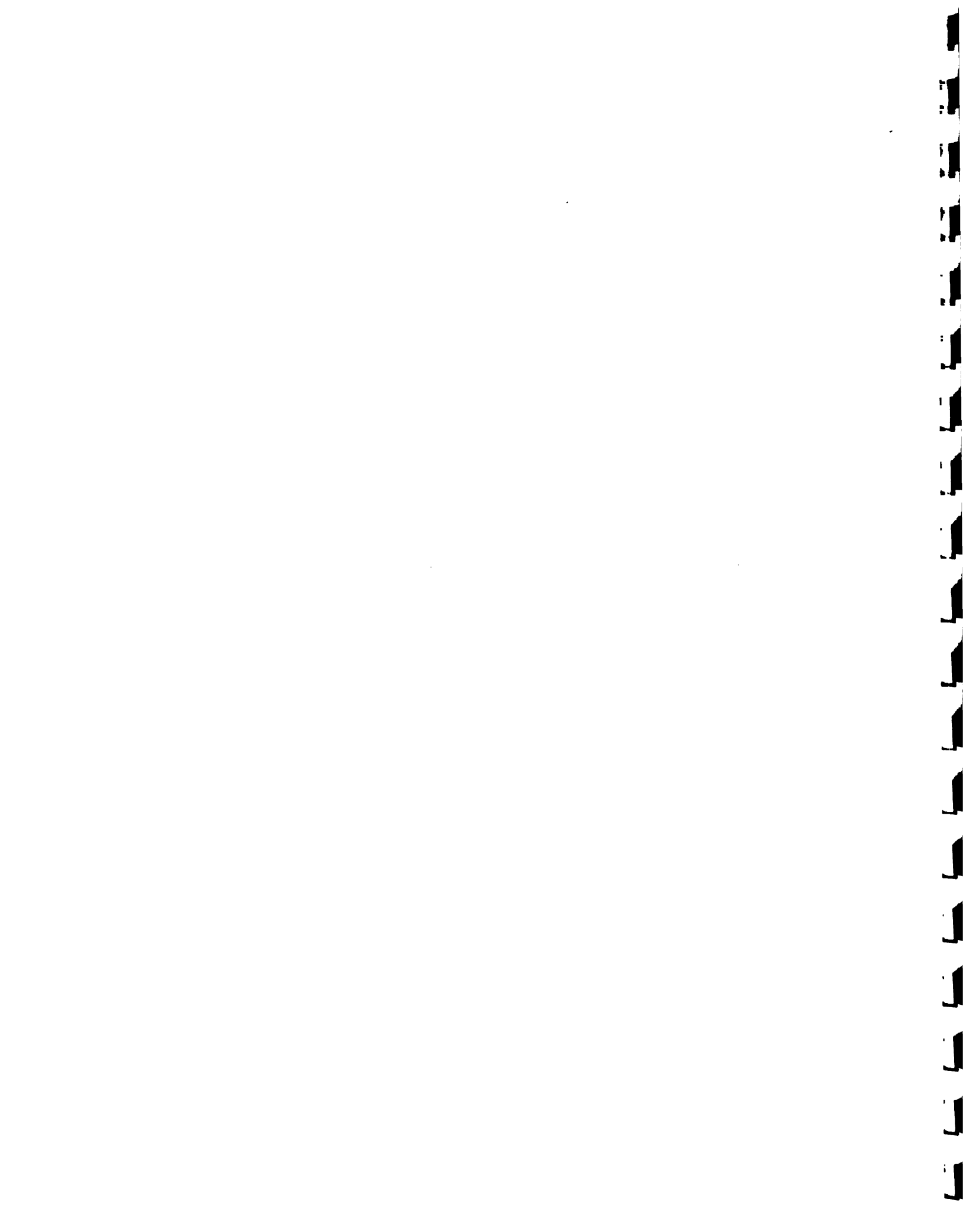
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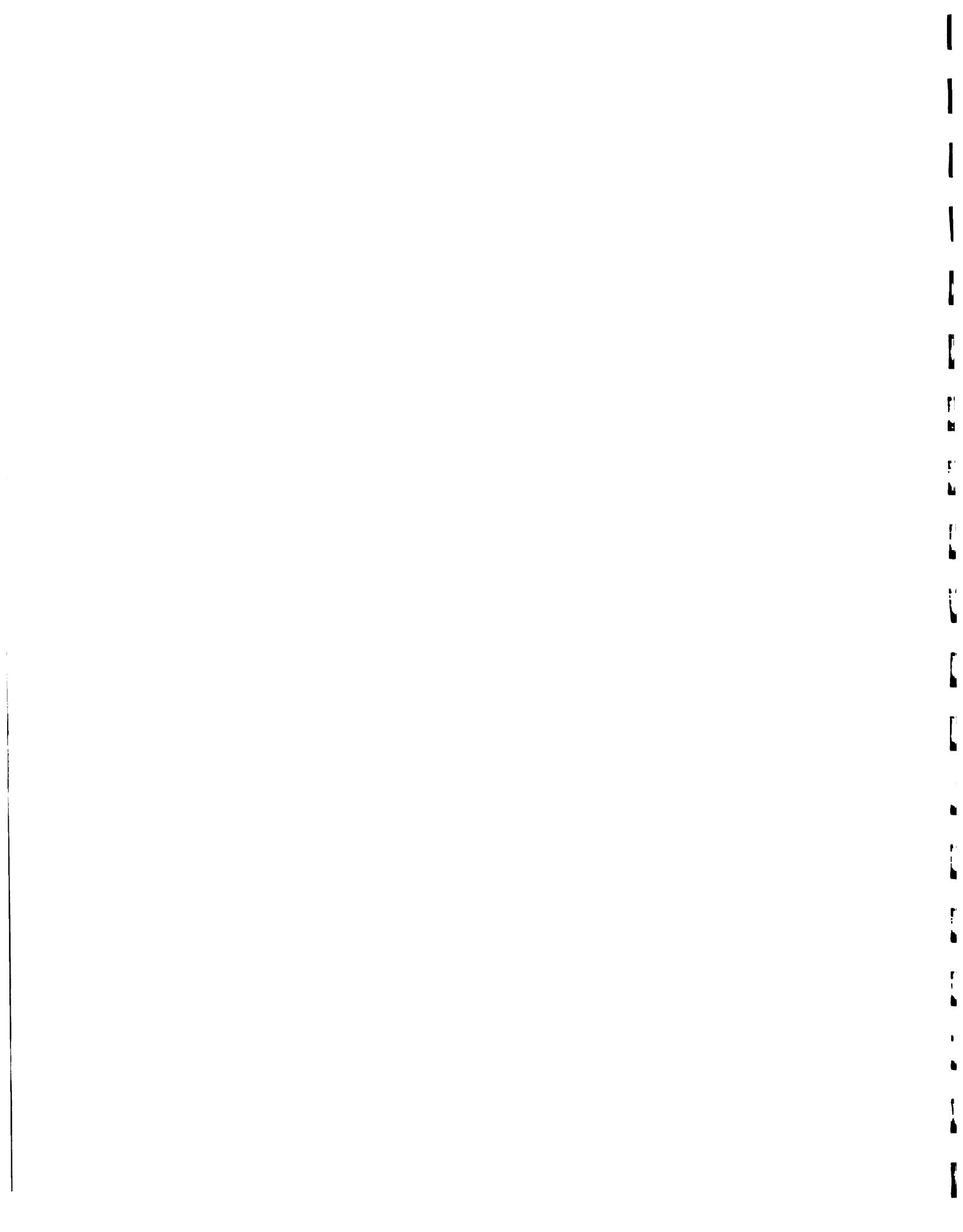
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ANTIGUA AND BARBUDA

CHAPTER 1

1. GENERAL ECONOMIC REVIEW

1.1 Introduction

The twin-island Federation of Antigua and Barbuda is an independent state and forms part of the Leeward Islands group of the Northern Lesser Antilles. The total land area is 442 square kilometers with the country having a population of 83,000 people.

1.2 Recent Economic Performance

The economy of Antigua and Barbuda advanced rapidly in the 1980's on the strength of a buoyant tourist sector and related construction. Real Gross Domestic Product (GDP) rate of growth reached an estimated peak of 8.8 percent in 1987, compared with an average annual growth rate of 6.9% between 1980 and 1986. The rate of growth of the economy slowed after 1987, however, and by 1990 real Gross Domestic Product grew by only 4.4% on account of decline in the tourism and related sectors. Based on an estimated population of 83,000 inhabitants, per capita income of Antigua and Barbuda was estimated at US\$5,112 in 1990.

Growth of real value added in hotels and restaurants slowed to 2% in 1989, the lowest rate recorded in seven years. Tourist arrivals were disrupted by the passage of Hurricane Hugo, and was also affected by flight interruptions caused by the strike at a major airline which served the island. The decline of the tourist industry continued into 1990 when the sector grew at an estimated rate of 1.9% in real terms.

The impact of the fall in tourism was not limited to the hotel and restaurant sector, but affected other service sectors which in past years have benefitted from strong growth in tourism. The retail trade sector which showed increased activity in 1988, with the opening of a duty free complex in the capital town, St. John's, grew by 3.5% in 1990, the lowest rate in the past six years. However, activity in the transport and communication sector increased by about 25.3% compared to 4.0% in 1989.

While the manufacturing sector recorded an increased growth rate of 3.1% in 1990, its contribution to GDP fell to 5.0% from 5.1% in 1989. In the water and electricity generation sector on the other hand, there was a marked decrease in growth from 4.3% in 1989 to -10.2% in 1990.

In the construction sector, growth in activity decelerated during the 1990 period to -18.9% from 25.2% increase recorded in 1989. As a result of the rapid decline of this sector, its



contribution to GDP fell to 10.1% in 1990 from 13.0% recorded in 1989.

1.3 Sectoral Performance

1.3.1 Agriculture

Agriculture has recovered somewhat from the drastically low yields of 1983-85 period when Antigua was plagued with drought. In real terms the sector grew by an average 8.0% per annum between 1986 and 1988, but output levels were still below those in the late 1970's to early 1980's. Growth in the sector slowed to 4.5% in 1989, due to the adverse effects of Hurricane Hugo. Recovery of the sector, following the hurricane, has been slow, as farmers have attempted to rehabilitate their farms with very little assistance from government. The primary success of 1990 was the good performance of the onion crop which was sufficient to satisfy the domestic demand for nine months.

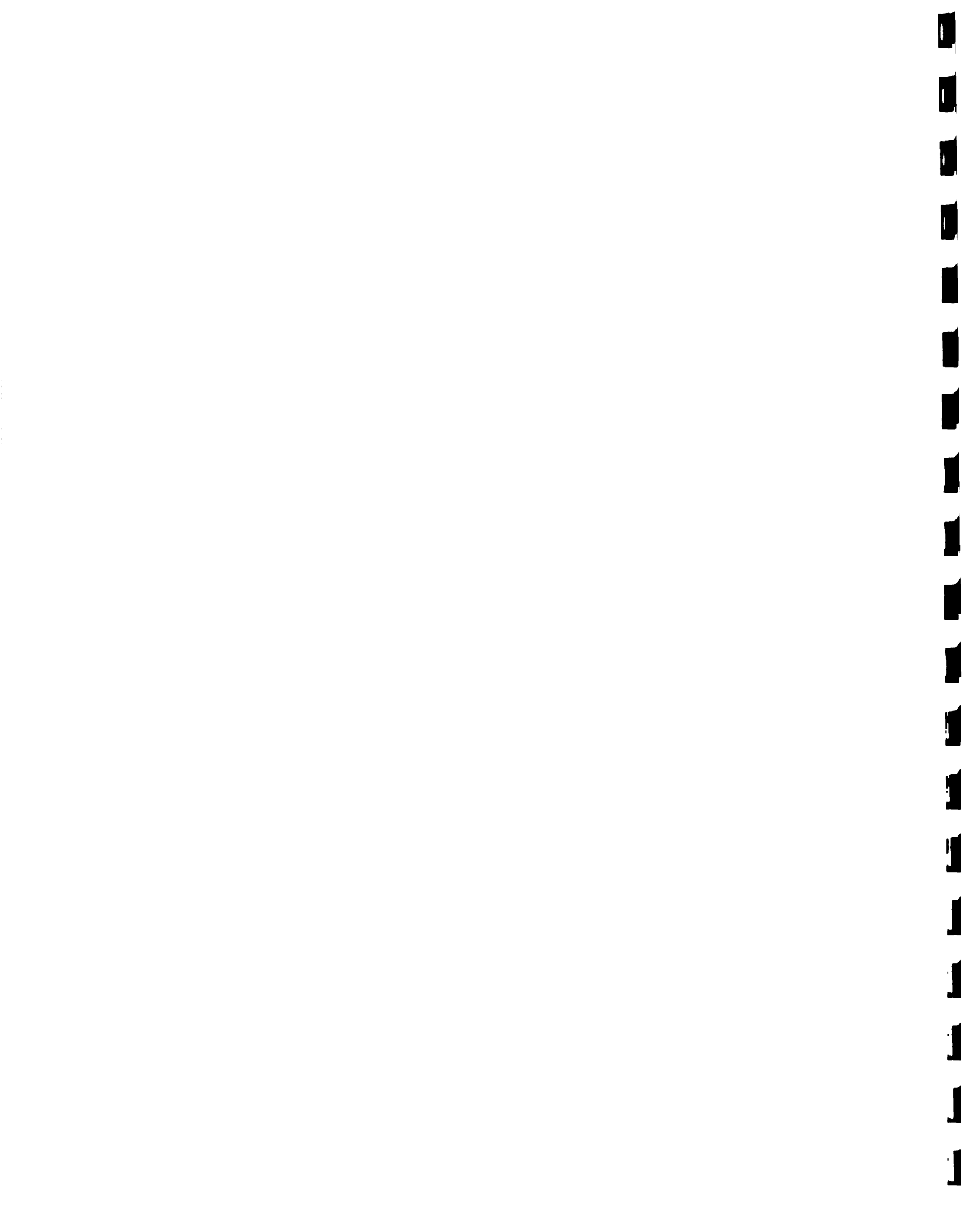
Despite government's efforts to encourage diversification of the agricultural sector through increased production of vegetables for local consumption and export, real agricultural output in 1990 was 75.6% of the level achieved in 1977. The share of agriculture in total GDP fell steadily from 11.0% in 1977 to 5.3% in 1983 and to 3.7% in 1990.

ANTIGUA AND BARBUDA
TABLE 1.1
INDEX OF AGRICULTURE GDP BY SUBSECTOR AT
FACTOR COST IN CONSTANT PRICES

YEAR	TOTAL AGRICULTURAL	CROPS	LIVESTOCK	FORESTRY	FISHING
1977	100.0	100.0	100.0	100.0	100.0
1978	100.6	157.7	59.7	100.0	116.7
1979	79.9	84.6	71.6	100.0	84.2
1980	79.9	84.6	82.1	100.0	75.6
1981	71.2	96.2	83.6	100.0	51.3
1982	67.2	107.7	92.5	100.0	30.8
1983	66.7	92.3	95.5	100.0	32.1
1984	53.6	92.3	57.0	96.7	36.2
1985	54.5	96.2	64.3	113.3	30.0
1986	57.9	100.0	67.8	120.0	33.1
1987	64.9	120.4	71.8	126.7	38.1
1988	68.6	120.4	76.1	133.3	42.3
1989	71.9	123.9	79.9	133.3	45.4
1990	75.6	135.0	81.8	136.7	48.1

1.3.2 Tourism

Tourism is the most dynamic sector, as well as the mainstay of the Antiguan economy. Directly and indirectly it provides economic growth, employment and much needed foreign exchange. Its direct contribution to GDP in 1990 as measured by the activities of hotels and restaurants is 15.9%, compared to 12.8% in 1983. Approximately 17% of the country's labour force is currently employed by the



tourist sector. Furthermore, tourism generated almost 6 times more foreign exchange than exports in 1990, and projections show that by 1992 this gap will widen to over eight-fold. Taxes and other direct revenues from tourism facilities are estimated to be about 10% of current revenue.

Tourist arrivals continue to show a strong upward trend. Tourism data show that visitor arrivals comprising stay-over and cruise ship passengers numbered 383,469 in 1989 compared to 375,483 in 1988 (a 2.1% increase) and 163,813 in 1983 (a 134.1% increase). Despite a significant increase in the number of cruise ship calls, growth in the number of cruise ship passengers visiting Antigua in 1989 slowed to 5% following increased of 25% in 1987 and about 30% in 1988. The number of stay-over visitor arrivals in 1989 fell for the first time in five years, by 1393 (0.8%) after increases of 1.0% and 11.1% were recorded in 1987 and 1988 respectively. This led to an 8.6% decline in the number of hotel guests, from 141,517 in 1988 to 129,363 in 1989 and a fall in the share of total arrivals of this higher spending category of visitors from 37.7% to 33.7%.

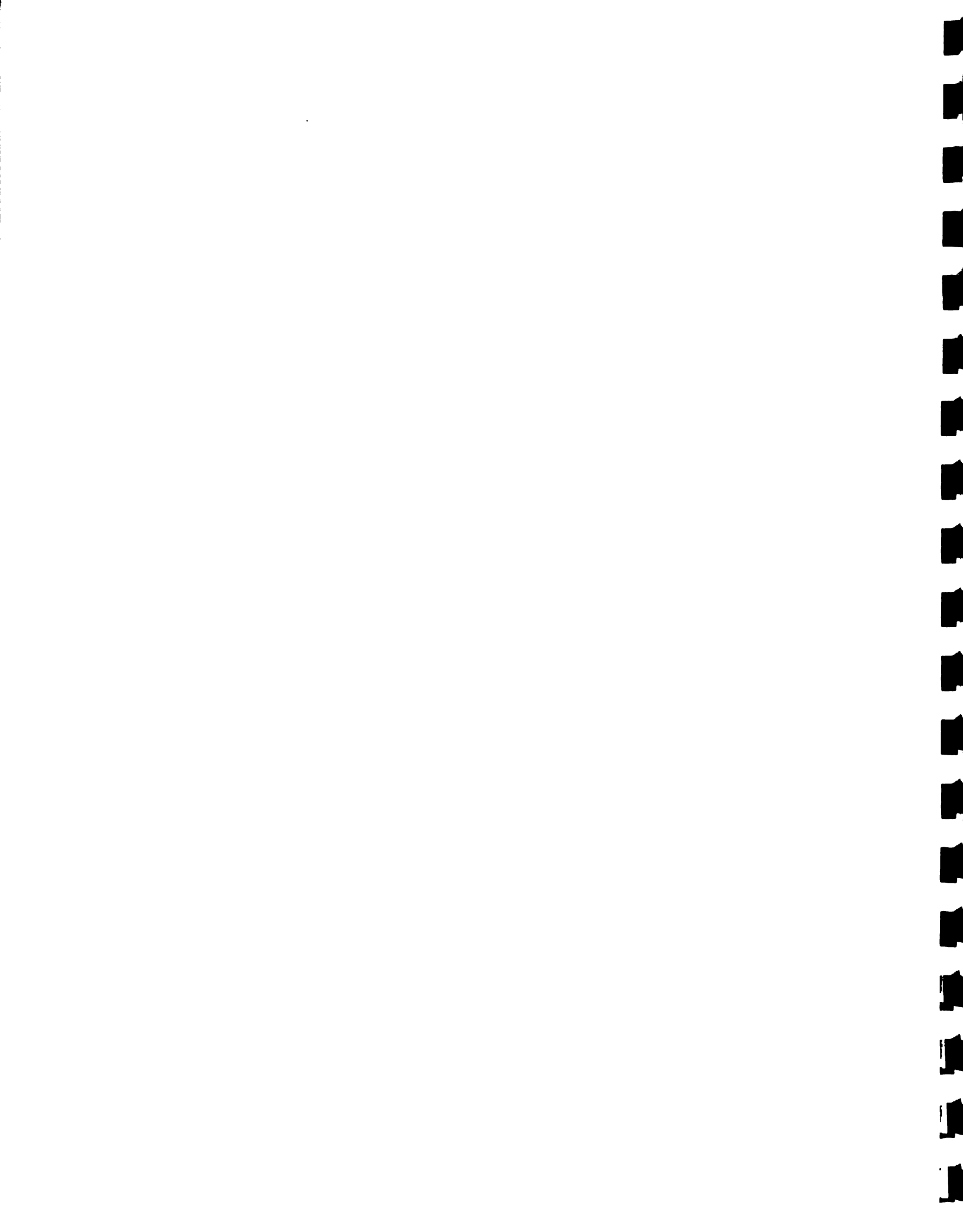
1.3.3 Construction

The expansion of tourism has given impetus to a rapid rise in construction activities. The sector has grown by 310% between 1983 and 1989 and currently (1990) contributes over 10% of GDP. Only tourism and transport and communication sectors have made greater contributions to GDP.

After five consecutive years a substantial growth, completion of some major public sector projects, including improvements to airports, a major hotel projects, a duty free shopping complex and a desalination plant led to a sharp reduction of growth in the sector from 36.6% in 1987 to 14.2% in 1988. Growth activity in the construction sector accelerated during the 1989 period by 24.9%. The acceleration of growth in 1989 resulted from the commencement of two major projects and continued growth in construction of residential buildings. As a result of the rapid growth of the sector, its contribution to GDP rose to 15.5% in 1989 from 11.9% in 1987. The construction industry slowed to 10.0% of GDP in 1990. The most obvious indicator was the decline in the number of building permits, from 1166 valued at US\$93.6 million in 1989, to 1109.

1.3.4 Transport and Utilities

Closely tied to growth in tourism, the transport sector in 1990 contributed about 14.4% to GDP, in real terms, making it the second largest contributor after tourism. The major share in value added to transport is contributed by the domestic transport subsector, which provided 43.9% of the sectors output in 1990,



compared to 42.2% by international transport, and 13.9% by sea transport.

Utility services which include electricity, telephone and water are provided by the Antigua Public Utilities Authority (APUA), a statutory body under the supervision of the Ministry of Public Utilities and Communications. Electricity services have deteriorated over the years as demand for electricity has outstripped supply. Water supply and quality have been variant, despite the rehabilitation of the water system in 1986 and the construction of a 2 million gallons per day capacity desalination plant to augment supply.

In the water and electricity generation sector there has been a marked deceleration in growth from 18.9% in 1988, to 4.3% in 1989, and finally to -10.2% in 1990.

1.3.5 Manufacturing

Manufacturing activity continued to be sluggish in 1990, still suffering the effects of closures of several operations in the industrial estates in 1988 and 1989. Increasing wage costs and labour shortages were cited as the principal reasons for the closures. These two factors appear to be seriously affecting export competitiveness.

Recognising these factors, the government is focusing its investment promotion activities on capital intensive industries that have access to the United States (US) market, under the Caribbean Basin Initiative. There has been some positive response from foreign investors. In addition, the government hopes that the potential that exists for joint ventures between private investors in the European Community under Lome IV and local investors will be exploited. An Export Processing Zone (EPZ) has been set up as part of the overall effort at investment promotion.

1.4 Public Sector Operations

In 1988, there was a reversal in public sector finances from the 1985-87 period. The surplus on current account of US\$5.9 million in 1987 became a deficit of close to US\$4.7 million in 1988, mainly as a result of a relaxation of strict current expenditure controls, and a 25% increase in public sector employees.

Available data for 1989 indicate that during the year there was some improvement in the accounts of the Central Government. The deficit on the current account fell from 1.4% of GDP in 1988 to 1.0% of GDP in 1989. This improvement occurred despite the tax concessions granted following Hurricane Hugo. Tax revenue increased by 11.9% in 1989 compared to 12.3% in 1988. The ratio of current revenue to GDP fell from 21.4% in 1988 to 19.0% of GDP in



1989. On the expenditure side, substantial improvements were recorded in 1989. Recurrent expenditure moved from 22.8% of GDP in 1988 to 20.0% of GDP in 1988. This achievement resulted from a combination of two factors. The rate of growth in the outlay on personal emoluments slowed significantly, while the other major current expenditure, interest payments, fell substantially.

The receipts on the capital account in 1989 were augmented to a considerable degree from the sale by Central Government of a lease on a hotel. This increase in capital revenue in addition to a 61.9% rise in foreign grants has resulted in an improvement in overall deficit position from 3.5% of GDP in 1988 to 2.0% GDP in 1989.

Preliminary data for 1990 show that the fiscal performance continued to be weak, albeit with some improvements. The current account deficit was further reduced to US\$1.7 million (or about 0.4% of GDP) and overall fiscal deficit was US\$4.2 million (or about 2.7% of GDP). The current account continued to be affected by growing levels of current expenditure. On the revenue side, current revenue rose from US\$80.9 million in 1989 to US\$82.8 million in 1990. Revenue generation was affected by slowdown in the economy. In particular, the growth in revenue from import contracted, as overall imports slowed.

Capital expenditure declined for the fifth consecutive year from US\$25.7 million in 1986 to US\$6.9 million in 1990.

1.5 Balance of Payments

The expansion of aggregate demand, part of which was supported by credit from the commercial banks, coupled with a fall in tourism earnings led to a widening of the current account deficit of the balance of payments in 1989. During the year, the deficit increased to 21.5% of GDP from 21.4% in 1988. During the same period the deficit on merchandise trade rose by US\$35.9 million to US\$316.2 million or 83.0% of GDP, reflecting the continued increase in imports of consumer and capital goods particularly by the private sector. The import to GDP ratio decreased from 93.9 in 1988 to 91.3 in 1989, while the export GDP ratio decreased also from 9.2 in 1988 to 8.3 in 1989.

In the services account, net travel receipts rose by about 6.2% in 1989 over the 1988 figure, reflecting mainly an increase in the average daily expenditure of visitors. During the period however, payments of claims by insurance companies in the aftermath of Hurricane Hugo led to a turn around in the balance on non-factor services. Meanwhile, interest payments continued to increase, primarily reflecting the government's external debt obligations. In these developments, the surplus on the services account fell from 57.0% of GDP in 1988 to 54.2% of GDP in 1989.

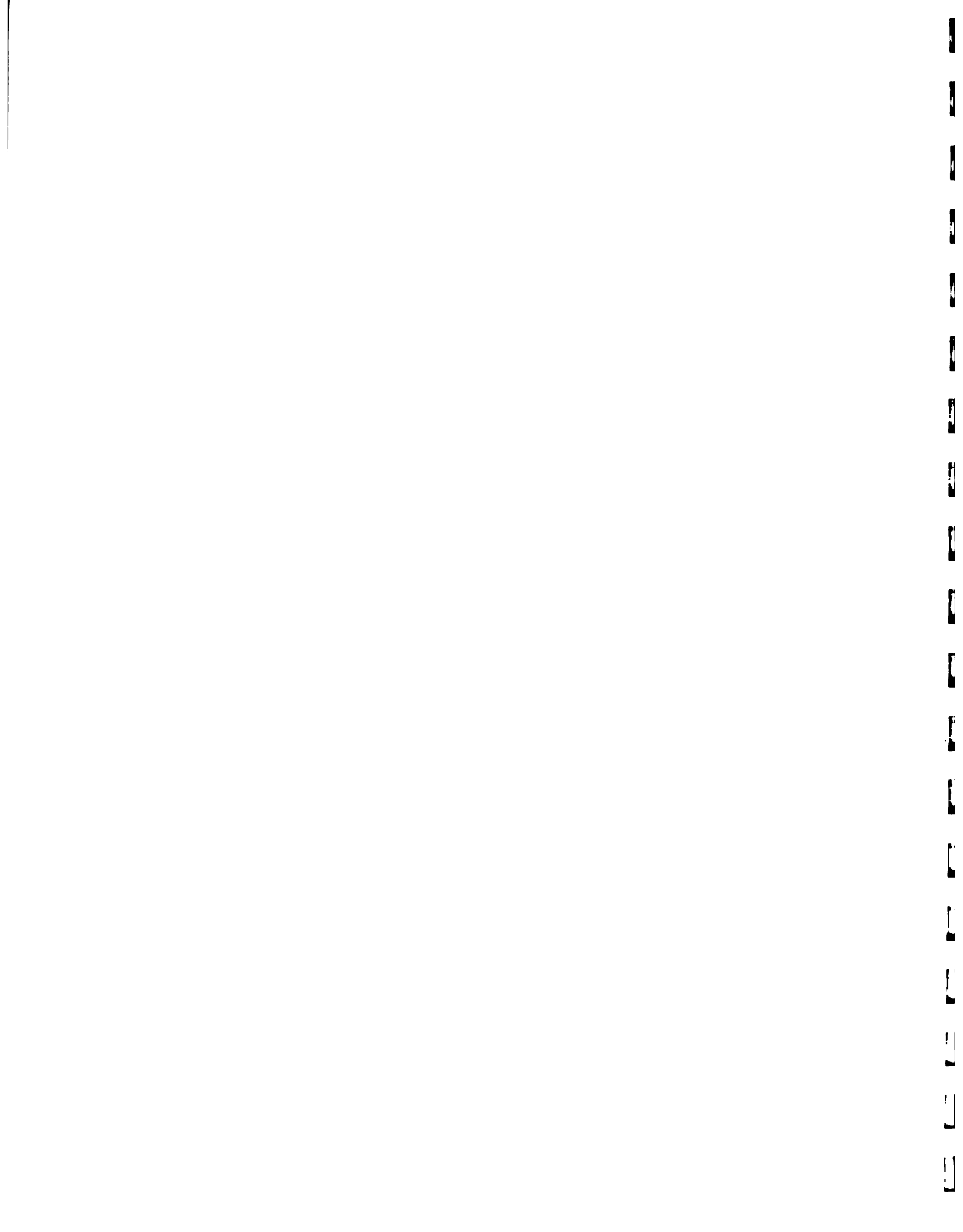


TABLE 1.2
BALANCE OF PAYMENTS
(US\$M)

	1985	1986	1987	1988	1989
CURRENT ACCOUNT	-23.1	-133.8	-70.0	-70.0	-81.8
Trade Balance	-163.9	-288.2	-245.8	-280.3	-316.2
Exports	28.3	28.0	29.0	30.3	31.6
Imports	-192.2	-316.3	-274.8	-310.6	-347.8
Services Balance (Net)	126.6	137.6	157.4	188.4	206.3
Travel	134.4	152.2	173.5	207.8	220.7
Non-factor Services	-0.1	-6.3	-6.3	-7.2	1.3
Interest Payments	-2.1	-2.2	-7.1	-9.4	-12.9
Other Factor Services	-5.6	-6.1	-2.7	-2.8	-2.8
Private Transfers (Net)	12.5	13.5	17.0	20.0	25.0
Official Transfers (net)	1.7	3.3	1.4	1.9	3.1
CAPITAL ACCOUNT	20.2	137.2	67.9	72.6	82.9
Official Drawings (Net)	-4.7	109.4	44.3	16.2	1.5
Commercial Banks	9.4	8.0	-7.6	-3.6	7.6
Private Direct Investment (including errors & omissions)	15.5	19.8	31.2	60.0	72.8
OVERALL BALANCE	-2.9	3.4	-2.1	2.6	1.1
Financing:	2.9	-3.4	2.1	-2.6	-1.1
Change in Government Foreign Assets	-0.1	-0.1	-0.2	-0.2	-0.2
Change in Reserves	3.0	-3.3	2.3	-2.4	-0.9

The inflows in capital account rose by 14.2% in 1989 over 1988, largely reflecting increased private direct investment in the hotel industry and commercial banks drawing on foreign assets. These developments were accompanied by a substantial fall in public sector net borrowing to US\$1.5 million from US\$16.2 million 1988. The capital account deficit and, consequently the level of official reserves remained intact.

1.6 Public Sector Debt

The level of public external debt and the build-up of arrears point to a general weakness in the financial position of the public sector. Between 1985 and 1989 outstanding debt rose from US\$62.2 million to US\$236.9 million, equivalent to 62% of GDP. In addition, total arrears of the consolidated public sector were estimated to be US\$46.8 million. Almost 87% of this amount was owed by the statutory corporations, principally the Antigua Public Utilities Authority and the Deep Bay Development Corporation.

In this scenario there is a need for prudent fiscal management. The government has had some success in rescheduling some of its larger loans. This rescheduling arrangements have eased the immediate pressure on some of the statutory corporations but each corporation needs to rationalize its operations and



introduce a programme to reduce the arrears. To improve the country's international credit-worthiness would necessitate the following policies:

- a. continued efforts at debt rescheduling or "debt forgiveness";
- b. the design of a programme to eliminate the arrears; and
- c. improvement in fiscal performance to enhance central government's capacity to repay the debt.

1.7 Money Supply and Credit

The Eastern Caribbean Central Bank (ECCB) conducts monetary policy for Antigua and the other members of the Organization of Eastern Caribbean States (OECS). Since 1983, the EC\$ has been pegged to the US\$ at a level of EC\$2.70 = US\$1.00.

Developments in the commercial bank system in 1989 were marked by continued rapid credit expansion accompanied by a slow-down in the rate of growth in the deposit liabilities. This led to a further decline in the liquidity in the commercial banking system. The loans to deposits ratio from 93% in 1988 to 94.8% in 1989 while the cash reserve rose ratio fell from 7.2% to 5.5% over the same period. The reduced liquidity was also reflected in a fall in the liquid assets ratio from 13.4% to 9.6%. Total liquid assets, which had decreased slightly by 0.04% in 1988, fell substantially by 23.1% in 1989, as balances with the Central Bank and with overseas banks declined by 20.3% (US\$2.4 million) and 26.5% (US\$7.3 million) respectively. Consistent with these liquidity developments, the net foreign assets of the banking system declined at the end of 1989 compared to the 1988 level. The foreign assets held by the commercial banks declined by 21.2% without a corresponding fall in foreign liabilities, while imputed reserves with the Central Bank remained stable.

At the end of 1989, total deposits held by the commercial banks stood at US\$220.9 million, an increase of 12.4% (US\$24.4 million) over 1988. The expansion in deposits resulted from the increased liabilities to the private sector (including non-financial public enterprises) which rose by 13% (US\$22.7 million). Conversely, a shortfall in government revenue contributed to a decrease of US\$10.6 million (1.7%) in deposits held by Central Government.

The growth in private sector deposits slowed somewhat in 1989 following the increase of 15.7% in 1988. This was primarily due to deposits held by households which increased at the slower rate of 17.3% in 1989 compared to 24% in 1988, to account for 65% of total deposits. Meanwhile, deposits of private businesses increased by 35% (US\$9.6 million) in 1989 bringing their total to US\$36.1



million; this was an acceleration of the 3.7% growth rate recorded in 1988. Deposits held by non-bank financial intermediaries continued to decline, and by a sharper rate of 35.9% (US\$2.0 million) in 1989 following a decline of 21.4% (US\$1.6 million) in 1988. Balances held by the non-financial public enterprises increased but at a slower rate of 6.6% compared to 35.1% in 1988.

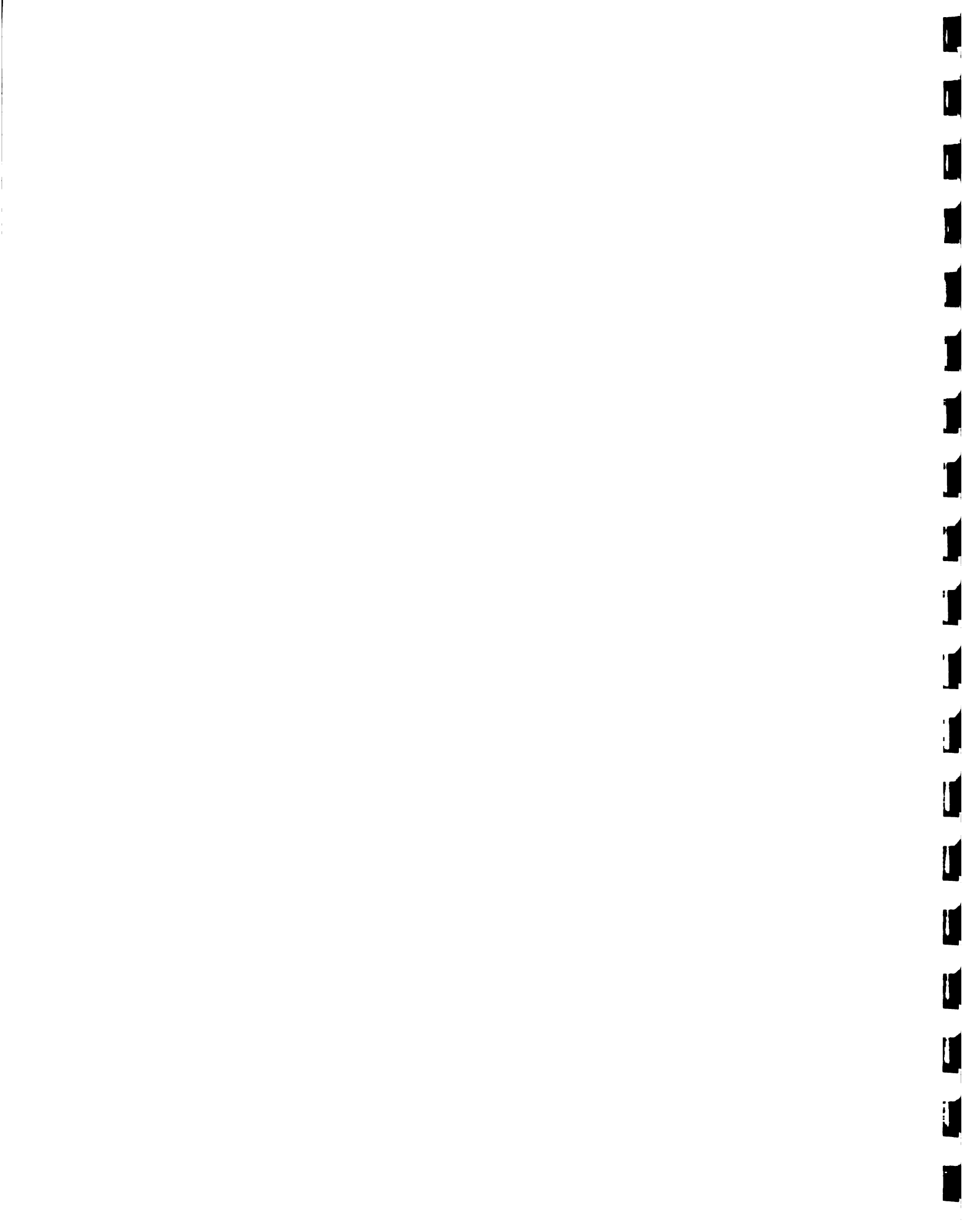
The growth rates recorded for total deposits in 1989 was lower than in 1988 despite significant increased in interest rates on the short terms deposits, and an increase of 0.5% on savings deposits to 5.5% at the end of 1989. Savings accounts attracted most of the rise in private sector deposits, increasing by 19.6% (US\$13.3 million); time deposits rose by 7.4%, while demand deposits increased by 6.4%. In these developments, the share of savings deposits in the liabilities to the private sector rose from 38.8% in 1988 to 41.4% for the same period in 1989, while the proportion of time deposits declined from 39.9% to 38%.

As mentioned earlier, lending by commercial banks during 1989 outpaced the rate of growth in total deposits as borrowing by the public and private sectors continued to increase, though at reduced rates. The borrowing of Central Government increased by a modest 4.8% in 1989 compared to 18.7% in 1988. While government's indebtedness in the form of Treasury Bills held by the commercial bank and the Central Bank fell by US\$0.6 million. Government's deposits with the commercial banks fell by US\$0.4 million. The non-financial public enterprises also absorbed additional credit

during 1989, recording a growth rate of 7.2% compared to 2.5% in 1988.

TABLE 1.3
SELECTED MONETARY INDICATORS
(US\$ Million)

	YEARS		
	1987	1988	1989
NET FOREIGN ASSETS	3.0	9.1	1.6
Central Bank (Imputed Resources)	25.6	28.0	28.1
Commercial Banks	-22.6	-18.9	26.5
DOMESTIC CREDIT	171.1	201.7	227.8
Private Sector	131.2	155.2	179.0
Households	71.5	88.1	91.6
Business	59.7	67.1	87.4
Non Government Public Enterprises	4.5	4.5	4.8
Government (net)	35.4	42.0	44.0
LIABILITIES TO THE PRIVATE SECTOR OF WHICH:	150.8	174.5	197.3
Demand Deposits	25.3	28.7	30.6
Savings Deposits	52.8	67.7	81.0
Time Deposits	62.0	69.7	74.9
Foreign Currency Deposits	10.7	8.4	10.8



Commercial banks' claim on the private sector increased by 15.3% (US\$23.8 million) during 1989 compared with 18.2% in 1988. Total credit extended to manufacturing concerns contracted from a peak of US\$9.3 million in 1985 to US\$7.00 million in 1990. Agricultural credit declined from US\$5.5 million in 1988 to US\$1.7 million in 1989 (a fall of 69.1%) but increased by 76.5% to US\$3.0 million by 1990.

In 1990 lending for construction and land development, and for distributive trades exhibited slower growth rates of 1.3% and 14.9% respectively, in comparison to substantial corresponding increases of 12.7% and 17.5% recorded in 1989. Following a modest 1.5% increase in 1988, credit absorbed by the tourism sector rose sharply by 64.7% to US\$22.4 million in 1989, but this rate of increase slowed to record only US\$26.2 million in 1990. Personal loans grew by 22.1% (US\$14.4 million) in 1989, but by only 4.0% (US\$3.2 million) in 1990.

The highest prime lending rate charged rose by two percentage points to 14% during 1990, reflecting the tighter liquidity position of the banks. However, the maximum lending rate on consumer loans remained at 23.3% in effective terms.

1.8 Employment and Wages

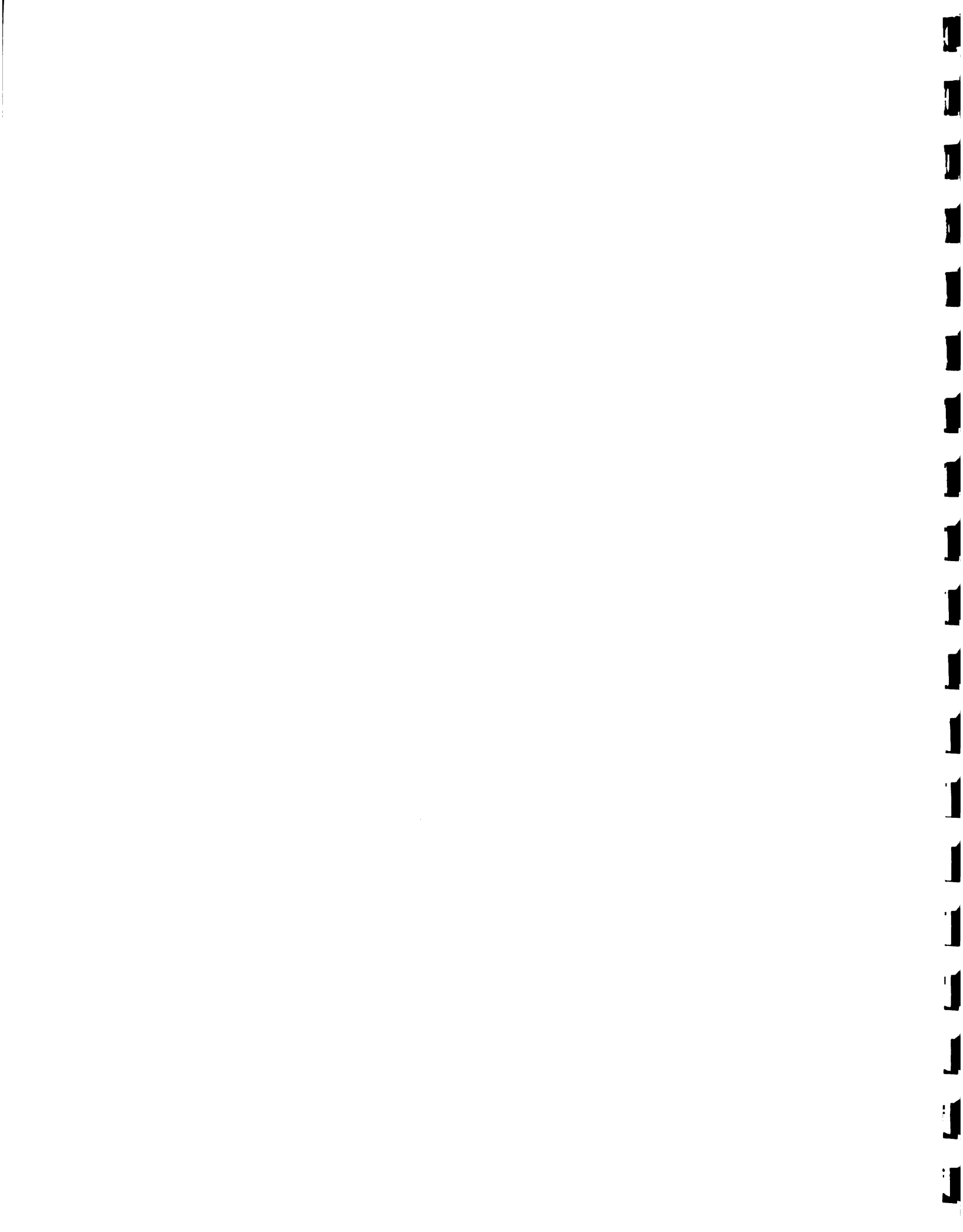
As recently as 1985, Antigua was experiencing unemployment levels of over 20%. The expansion in tourism, construction, and service related industries created sufficient employment opportunities that the government now places unemployment estimates at under 10%.

Since 1985, wages have increased substantially in most sectors of the economy. In the dynamic growth areas of tourism, construction and the public sector salaries have risen rapidly, approximately doubling over the past five years. However, in other sectors, such as agriculture and manufacturing, wages have stagnated, increasing only slightly if at all.

1.9 Summary of Constraints

The government of Antigua and Barbuda is relying heavily on the tourist sector to fuel growth, provide foreign exchange earnings, and generate employment. Achievement of an average annual growth rate of 5% as defined as a goal, will require that simultaneous expansion occur in other sectors, particularly agriculture and manufacturing, so as to offset proposed reductions in heavy capital investment by the public sector. Unless effective strategies are implemented, the following factors will continue to constrain economic growth:

- A large foreign debt;
- Labour shortages and declining productivity;



- Small domestic market;
- An inadequate water supply; and
- Resources migration out of agriculture and industry.

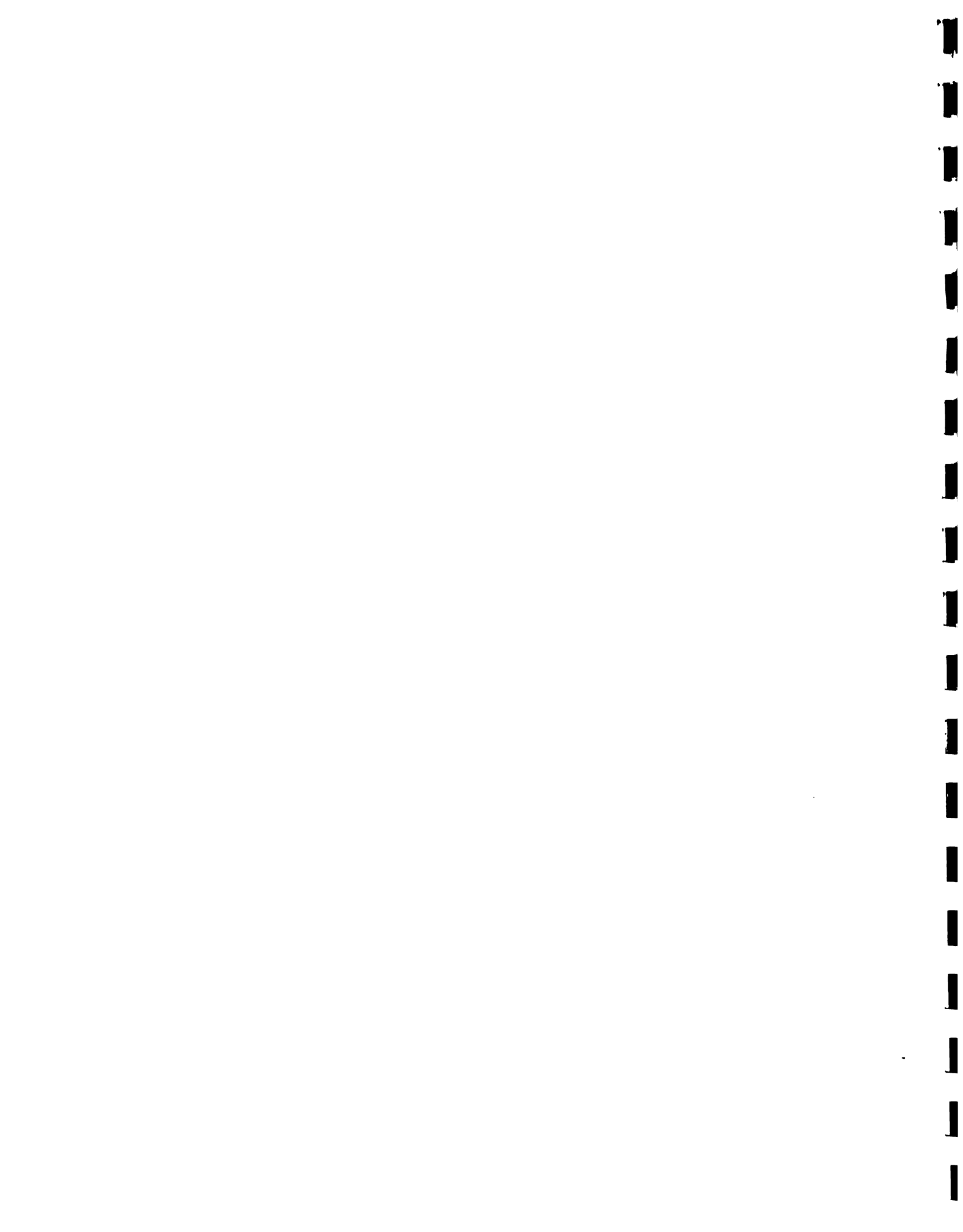
1.10 National Development Strategy

The Government of Antigua has adopted a strategic package that continues to acknowledge the importance of tourism. However, to maximize returns from tourism, the new development strategy seeks to strengthen the links between tourism and other domestic sectors, in order to satisfy demand from local production rather than from imported products.

1.11 Agricultural Development Strategy

The ability of the government to achieve its national development goals is largely contingent on its success in creating linkages between relevant sectors and subsector in the economy. Agriculture, as a sector with potentially strong ties to tourism, agribusiness, and export promotion, will necessarily play a pivotal role in the development process in the coming years.

The Ministry of Agriculture (MOA) has stated a strong desire to arrest the decline in the contribution of agriculture to national development and has defined policy goals for restoration of agricultural production.



CHAPTER II

2. OVERVIEW OF THE AGRICULTURAL SECTOR OF ANTIGUA

2.1 Environment

Antigua and Barbuda occupies a land area of 442 square kilometers, with the island of Antigua having 281 km² and Barbuda having 161 km². The country has a mean annual temperature of 27°C, with extremes ranging from a high of 34°C in August to a low of 15°C in January. Despite these noted variations, temperatures generally stay between 29°C and 24°C during the summer and winter seasons respectively. Annual rainfall is approximately 1100mm, but it can vary between 1825mm and 625mm. The wet season from August to November receives nearly half the yearly rainfall, and is counterbalanced by a dry season which runs from February through April.

The topography of Antigua is divisible into three main geological zones. A volcanic region in the South West is characterized by summits and ridges that descend to level valleys, which are covered by alluvium and fringed with mangrove swamps. The central plain is mostly flat and subjected to flooding and waterlogging during heavy rains occurring within the wet season. To the north and east lies the third zone, which comprised of undulating terrain that holds little surface water.

The three zones are distinguished by their soil types, with clay loams predominating in the Southwestern region, thick clay soils in the central, and light soils in the North. Antigua has some 30,000 acres of agricultural land of which 5,000 can be cultivated without restrictions and some 15,000 acres can be cultivated with moderate restrictions.

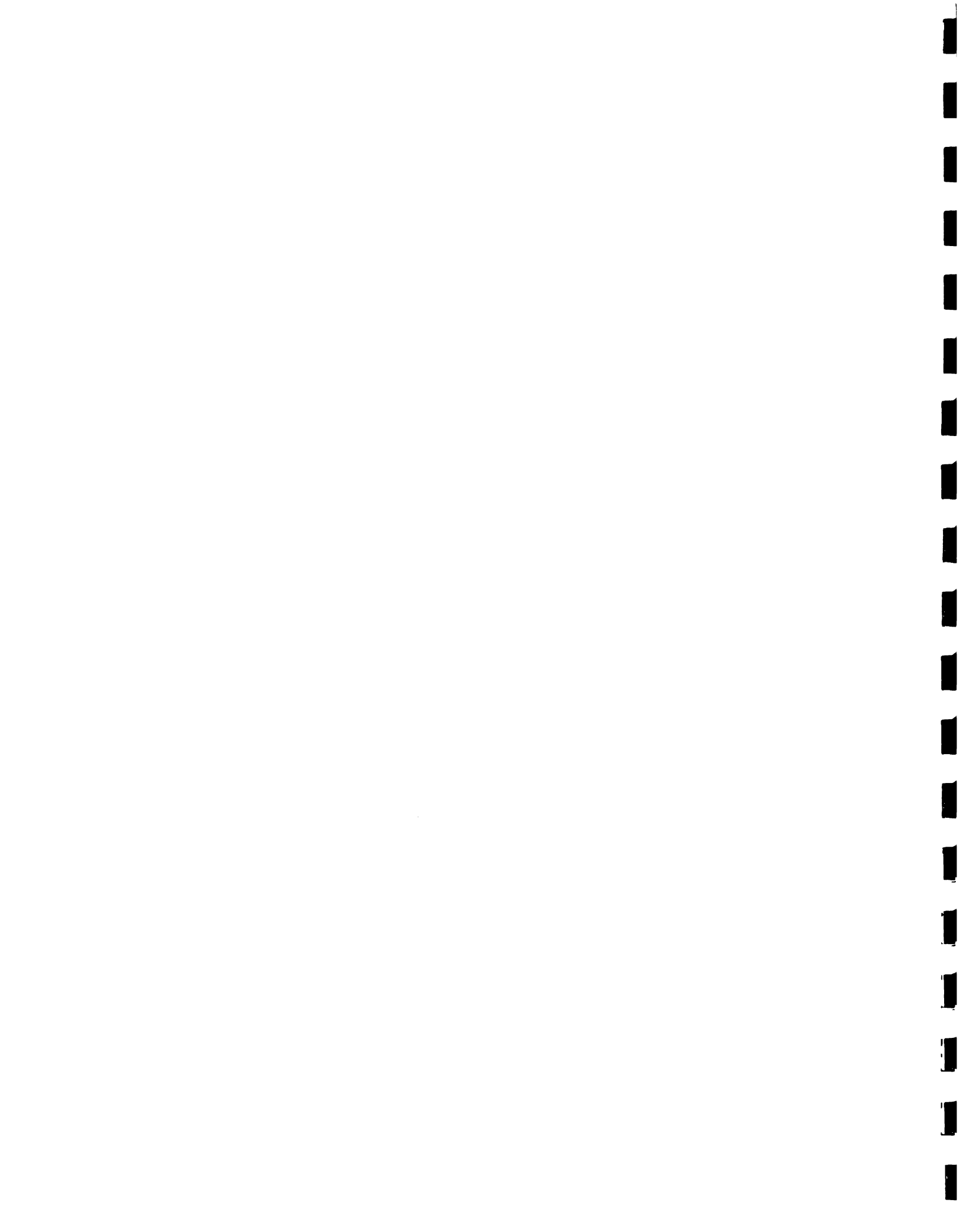
2.2 Roads and Infrastructure

The infrastructure includes some 400 km of asphalt roads, along with 540 km of gravel and earth secondary roads. A railway covers 78 km of narrow gauge track and was formerly used by the Antigua Sugar Factory to carry cane, sugar, and molasses from field to wharf. The Port of St. Johns includes a deep water harbour, built to accommodate special loading and unloading of oil. Seven kilometers to the north east of St. Johns is V.C. Bird Airport, which is capable of handling international traffic.

2.3 Structural Characteristics of the Agricultural Sector

2.3.1 Number and Size of holdings

The 1984 Antigua and Barbuda Agricultural Census established that there are 4639 farmers on the twin islands, more than 69% of whom are "part-time". Along with the 4639 private farmers, 19



government operated (public) farms are currently active, bringing the total number of farms on Antigua to 4658.

Total land area operated by private farms can be conveniently grouped into three, with one third of the total acreage occupied by farms under 2 acres, another third occupied by farms in the 2.1-15.0 acre range, and the final third operated at levels in excess of 15 acres. The majority of government farms are in excess of 80 acres, and nearly all are over 20 acres.

TABLE 2.1
TOTAL ACREAGE OPERATED BY PRIVATE FARMERS AND
GOVERNMENT, BY FARM SIZE (ACRES)

FARM SIZE GROUPS (acres)	PRIVATE	PUBLIC	% TOTAL
0.1 - 0.5	256.0	0.0	4.0
0.6 - 1.0	498.9	0.0	8.0
1.1 - 2.0	785.6	0.0	12.6
2.1 - 5.0	1074.0	0.0	17.2
5.1 - 10.0	461.0	5.0	7.5
10.1 - 15.0	116.5	23.0	2.2
15.1 - 20.0	112.0	25.0	2.2
20.1 - 25.0	100.0	36.0	2.2
25.1 - 50.0	438.3	166.0	9.7
50.1 - 100.0	676.5	470.0	18.4
100.0	300.0	700.0	16.0
TOTAL	4818.8	1425.0	100.0

To place these figures in proper context, it is important to note that while farmers "officially" operate 6244 acres (2527 hectares) an additional 19000 acres (7689 hectares) are "unofficially" used by landless, and unorganized, mainly livestock farmers. Therefore, one may characterize agricultural holdings as comparatively small and of secondary importance for income generation.

2.3.2 Land Tenure

Fifty one percent of all privately held farms are operated on a rental basis, while 30% are owned individually or by Corporations, and 11% are family owned. The distribution of land to farmers is heavily skewed: 90.8% of the private farms cover only 32.3% of farm land, while at the other end of the range 0.6% of the farmers occupy more than 30% of farm land. Because of the government expressed policy to increase the number of family farms, it is important to note that larger farms, those in excess of 8 acres, are not family operated.



TABLE 2.2
LAND TENURE

Ownership	Total Farm Acreage by Ownership		
	Private Farms	Public Farms	All Farms
Owned	1462.1	1425.0	2887.1
Family Owned	533.1	-	533.1
Rented	2468.5	-	2468.5
Service Exchange	18.0	-	18.0
Manage	25.5	-	25.5
Share Cropped	11.6	-	11.6
Used for Free	280.8	-	280.8

Source: Antigua and Barbuda Agricultural Census 1984 Vol.1

2.3.3 Land Use

Currently some 64% of farm land is under cultivation, though one quarter of this faces moderate limitations and three quarters confront strong limitations. Private farms utilized a high percentage of land, approximately 42%, for temporary crops, while public and private farms together used 36.0% of all land for pasture. As was noted above though, these figures on land use do not reflect the true pattern, as the large number of landless and unorganized livestock farmers would imply a much greater pasture component.

TABLE 2.3
LAND USE

Ownership	Total Farm Acreage by Ownership		
	Private Farms	Public Farms	All Farms
Temporary Crop	2019.7	206.0	2225.7
Improved Pasture	463.4	0.0	463.4
Other Pastures	552.7	922.5	1775.2
Permanent Crop	752.8	263.0	1015.8
Lying Fallow	627.4	31.3	658.7
Unsuitable	83.6	2.3	85.9

Source: Antigua and Barbuda Agricultural Census 1984 Vol.1

Average farm size in the nation is 2.7 acres (1.1 hectares) when considering only farmers with land. But when accounting for landless farmers, the average drops to only 1 acre (0.5 hectare) underscoring the significant numbers of landless, mainly livestock, farmers throughout the nation.

In Antigua, the percentage of farmers obtaining more than 25% of their income from farming increases up to a farm size of 2.2 acres. It declines for the 2.1-4.4 acres farm size group, and increases for farms in excess of 8 acres.



2.3.4 Farming and Distribution Systems

Farmers in Antigua are divided in their production ends between "Home Use Only", "Home Use Mainly", and "Mainly for Market". As might be expected there is a strong positive relationship between farm size and the market orientation of farmers. Of the total acreage operated by farmers, 4.9% produce for "Home Use Only", while 17.0% produce for "Home Use Mainly", and the remaining 78.1% produce "Mainly for Market". Of course, this trend would be even more distinct if the figures had included landless farmers as well.

Over 62% of the farmers felt that their most important market arrangement was direct sale to consumers. Hotels and supermarkets represented less than 4% of the responses, supporting the contention that low prices for suppliers, and variable supply and quality for potential consumers have combined to preclude linkages between these two sectors. Some 23% of farmers claim that hucksters, or middlemen, play a significant role in marketing, especially in those areas where markets are far distances from the farmer or farmers are unaware of, or unable to locate markets. In the agricultural census, 9% of farmers rank the marketing board as the third largest recipient of production, indicating its relative importance in the marketing system.

2.4 Farmer Profile

2.4.1 Age

Average age of farmers in the nation is 46 years. Their age distribution is fairly constant, with little difference in the numbers of farmers between the ages of 25 and 64. The number of young farmers is less than the number of retiring farmers, but the difference is small. According to the Agricultural Census, there seems to be very little correlation between the ages of farmers and (a) farm size operated, (b) number of parcels of land, (c) size of cattle herd, (d) size of sheep or goat flock, or (e) number of pigs held.

TABLE 2.4
AGE OF FARMERS

AGE GROUP (YEAR)	NO.	PERCENTAGE	CUMULATIVE
15-24	597	12.9	12.9
25-34	814	17.6	30.5
35-44	759	16.4	46.9
45-54	805	17.4	64.3
55-64	778	16.8	81.1
65-	869	18.9	100.0
TOTAL	4622	100%	100.0



2.4.2 Gender

Men account for 62% or 2878 of all farmers, while women total 1744 farmers. The average size of the female operated farm is 1 acre as compared with 2.8 acres for male farmers. This reflects the fact that a larger percentage of women is involved in crop production which takes less land than livestock, and also that a larger percentage of women produces at a subsistence level than male operated farms.

TABLE 2.5
NUMBER OF FARMERS BY GENDER

SEX	NO. FARMERS	PERCENTAGE
MALE	2878	62.3
FEMALE	1744	37.7
TOTAL	4622	100%

SOURCE: AGRICULTURAL CENSUS 1984

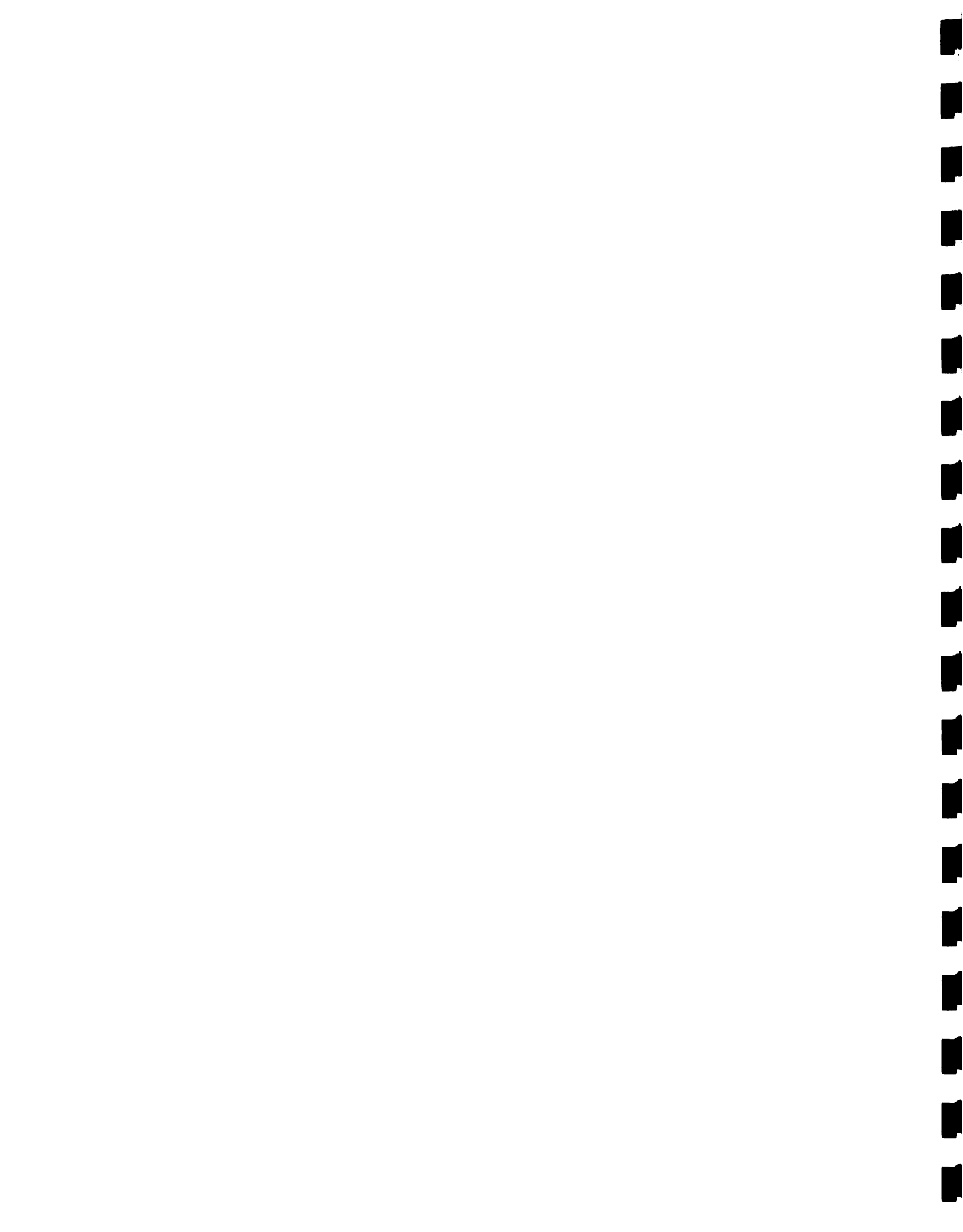
2.4.3 Farmer Income

There are strong positive relationships between the percentage of income from farming on one hand and (1) the size of the farm, and (2) the use of improved technology on the other hand. However, there were no definitive relationships between the number of hours spent on non-farm employment by part-time farmers and (1) the size of the farm, (2) the number of animals held by farmers, or (3) the use of improved cropping technology. This strengthens the claim that under the present system, off-farm work does not impact on-farm income, and implies that farmers are apt to seek off-farm employment unless relative on-farm profitability increases.

When part-time farmers were asked to state at most three sources of non-farm income, the top three answers were government (26.8%), trades (14.1%), and private business (11.8%). Domestic services and tourism also figured prominently as sources off-farm income in the responses.

2.5 Credit

The proportion of loans made by all institutions to the agricultural sector has declined gradually since 1986, and in 1990 account for less than 2% of all loans and advances. Commercial banks seldom lend to agriculture, leaving the Antigua and Barbuda Development Bank (ABDB) as the sector's leading and in many cases only source of credit. Loans made by ABDB to the sector fell from 46% in 1981 to less than 10% in 1990.



ABDB's policy has been to charge an interest rate on loans so as to realize a spread between revenue and costs of 4-6%. Varying rates are charged for loans. For housing, the rate is 13% for a period of up to 15 years, while for agriculture, the rates are 12% for crops (3 to 5 years), 10.5% for fishing (10 years), and 12% for livestock (3 to 5 years). For similar purposes, commercial banks charge from 14-16%.

2.6 Institutional Structure

2.6.1 Public Sector Institutions

There are five main public sector institutions which are directly involved in implementation of programmes, policies, projects and general management of the agricultural sector. Two of these are directly under ministerial portfolios and the rest are statutory bodies. A brief presentation of these five institutions follows.

2.6.1.1 Ministry of Agriculture, Lands, Fisheries and Housing

The Ministry of Agriculture, Lands, Fisheries and Housing is the leading institution in the agricultural sector. The official functions of the Ministry as described in the Budget Estimates are:

- (a) Initiate and review agricultural policy affecting all programmes and projects of the Ministry and its related departments;
- (b) effect general management of all agricultural projects; and
- (c) provide centralized services such as administrative personnel, and accounting functions of budgetary control.

The Ministry also has responsibility for a number of statutory corporations, departments/divisions and their respective areas of control. These responsibilities can be desegregated into three levels. Besides responsibility for the entire Ministry, the Minister of Agriculture is directly responsible for the Antigua Sugar Industry Corporation, the Agriculture Development Corporation and the Central Marketing Corporation. At the second level, the Permanent Secretary is responsible for the Department of Agriculture (consisting of all the technical divisions), Development Control Authority, Central Housing & Planning, Surveys Department, Lands Division, Fisheries, Forestry, Price Control & Consumer Affairs and Bureau of Standards. The third level of responsibility is under the Director of Agriculture, whose portfolio includes the Department of Agriculture (DOA). The DOA consists of the following technical divisions within the Ministry: Veterinary, Plant Protection, Agricultural Engineering, Horticulture, Extension, and Research and Cotton Station.



2.6.1.2 Ministry of Public Utilities

The Public Utilities Act (1973) established the Antigua Public Utilities Authority (APUA) with responsibility for telephone, electricity and water supply.

The Water Division is responsible for supply of water for domestic uses as well as for agricultural production and other economic uses. Of the total water supplied by the APUA, the agricultural sector consumes only 5%. Water may be underutilized in agriculture because of its high cost.

2.6.1.3 Antigua Sugar Industry Corporation

The Antigua Sugar Industry Corporation (ASIC) is the principal institution responsible for the sugar sub-sector in agriculture. It is directly under the responsibility of the Minister of Agriculture who appoints members to its Board. With the demise of sugar, ASIC has utilized some of the lands once under sugarcane for cultivation of non-traditional agricultural products - mainly vegetables. It was the original intention of ASIC to use its vegetable farms as demonstration plots; however, this has not been successful. Most of the land once cultivated under sugarcane and controlled by ASIC has been abandoned and taken over by squatters. Because of the wide gap between costs and revenue, ASIC is heavily funded by the Government and this has resulted in a drain on public sector finances. A decision has been taken by government to wind down the operations of ASIC.

2.6.1.4 Agriculture Development Corporation (ADC)

Like ASIC, the Agriculture Development Corporation (ADC) is a statutory body under the direct responsibility of the Minister. ADC's primary role is to intensify government's diversification effort in the cultivation of non-traditional crops. ADC has not been very successful in this and like ASIC, it has relied heavily on financial support from the government for its survival.

2.6.1.5 Central Marketing Corporation

Whereas the CMC at times purchased all produce offered for sale by the farmer it has since introduced a more realistic policy of purchasing only those amounts for which it has a market. As an end result the volumes for fresh produce purchased by CMC are relatively small. Farmers often complain that the CMC usually contends that "they have all they need".

The principal functions carried out by CMC staff include:

- administrative functions;
- imports of rice and sugar;



- exports of fresh produce under a joint venture with CATCO;
- operation of small supermarket;
- sales of farm inputs, and
- marketing of domestic fresh produce

Given CMC's high overhead costs and relatively small volumes of produce handled, it finds itself in a deficit situation most years.

Although the CMC was originally set up to market farmers produce and to supply them with farm inputs on an opportune basis, it has not been successful in fulfilling these purposes.

2.6.2 Private Sector Institutions

The main private sector institutions involved in agriculture are (i) a number of farmers organizations, and (ii) the non-governmental organizations which support rural development.

2.6.2.1 Small Farmers Association

The Small Farmers Association (SFA) is an organization of approximately 125 part-time farmers of which no more than 50 can be considered active. Most of the activities and services provided by SFA are carried out by a core group of 5 to 6 members. This organization is made up of both livestock and crop farmers who meet periodically to discuss common problems. There is a felt need among the leadership to improve services and emphasis is now being placed on establishing direct marketing links with the hotel association.

Services presently provided by SFA include land preparation, retail of livestock supplies and supplements, coordination and organization of the cleaning of ponds, construction of dams for irrigation purposes and organization of training and educational events for farmers.

2.6.2.2 Antigua Livestock Improvement Cooperative Society

In 1985 the Ministry of Agriculture, Lands and Fisheries and the Winrock International Institute for Agricultural Development, with financial assistance from USAID, initiated a three year project titled "Antigua Livestock Improvement Project". During its life 30 livestock farmers received: training, improved breeds of livestock, livestock holding facilities, access to equipment for land preparation and technical assistance. It was decided that when the project terminated all materials and equipment would be turned over to the livestock farmers through a co-operative. In 1986, therefore, 10 livestock farmers formed the Antigua Livestock



Improvement Cooperative Society (ALICS). This group absorbed many of the members of the now defunct Antigua Livestock Farmers Cooperative. Upon termination of the Winrock project in 1987, all the remaining resources were turned over to ALICS.

Present membership of ALICS is 24 and the prospects for further growth are not good.

Services provided by the ALICS include:

- mechanized brush cutting, land preparation, pot hole digging and livestock hauling.
- educational and training materials on diverse aspects of animal production are made available to members;
- breeding bulls are rotated to members although non-members also benefit from this service;
- improved breeds of goats are distributed to members who will make payment in kind after two years.

2.6.2.3 Cooperative Farmers Association

The Cooperative Farmers Association (CFA) was registered in 1982 under the Cooperative Law. Total membership is 36 of whom half are full-time farmers. Most of the part-time farmers are professionals, mainly teachers.

Although small in number of members, the CFA has potentially good leadership with high levels of managerial ability and some of Antigua's most skilled small farmers.

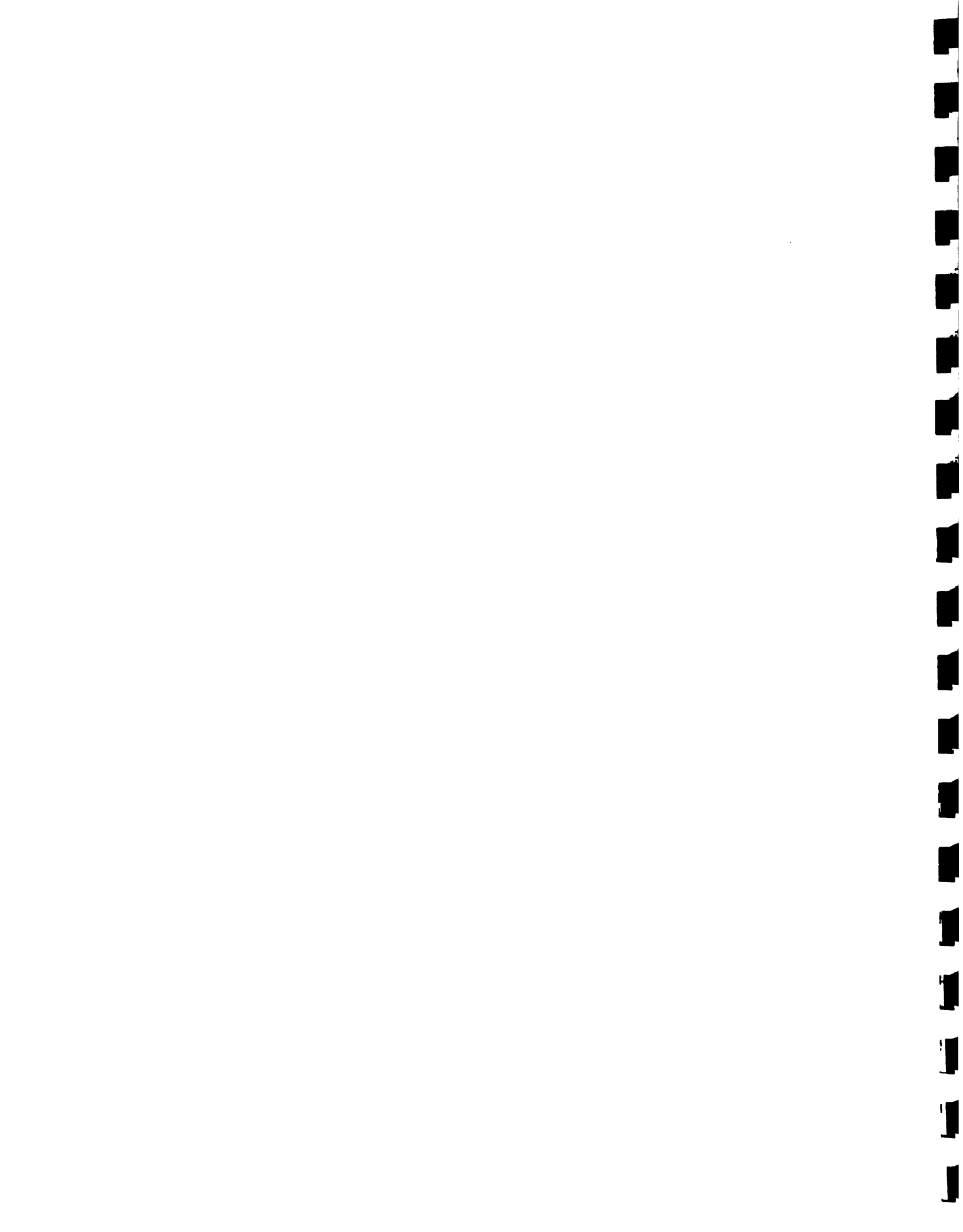
The membership originally came together to overcome a common problem related to insufficient water supplies. More recently it has refocused its attention towards integrated rural development and the production of crops with potential for import substitution.

Services provided by CFA in the past have include the following:

- promotional assistance to farmers to obtain financial assistance to develop water resources;
- negotiation with Government to obtain lands for members;
- negotiation with ASIC for land preparation services,
- training, information and technical assistance to members.

2.6.2.4 Non-governmental Support Organizations

There are several other national, regional and international institutions actively involved in efforts to foster agricultural



development in Antigua and Barbuda. These include:

1. Organization for Agricultural Development

The Organization for Agricultural Development (OAD) is the continuation of "Meals for Millions" which was founded in 1979.

OAD has been assisting farmers in agro-forestry, beekeeping and community gardening.

2. Caribbean Agricultural Research and Development Institute (CARDI)

3. Caribbean Agricultural Trading company (CATCO)

4. Canadian International Development Agency (CIDA)

5. Food and Agriculture Organization (FAO)

6. Inter-American Institute for Cooperation on Agriculture (IICA)

7. Organization of American States (OAS)

8. United States Agency for International Development (USAID)

2.7 Marketing and Agroprocessing

2.7.1 Marketing

(a) The System

Given the small size of Antigua and the centralization of commercial activities in St. Johns, the marketing of fresh produce is carried out directly from farmer to consumer. Most fresh agricultural produce is marketed by the farmer himself, or a member of his family, directly to one of the following: St. Johns public market, hotels, restaurants, supermarkets, wholesaler/importers, public sector institutions, or the Central Marketing Corporation.

While statistics are not available as to the volume of produce moving through the different channels, the 1984 agricultural census reports that over 50% of farmers used direct sales to consumers as one of their most important marketing arrangements. Thirty percent of census respondents claimed that their most important marketing arrangement was sales to hucksters, while the remaining 19% were spread out between CMC, hotels, and supermarkets.

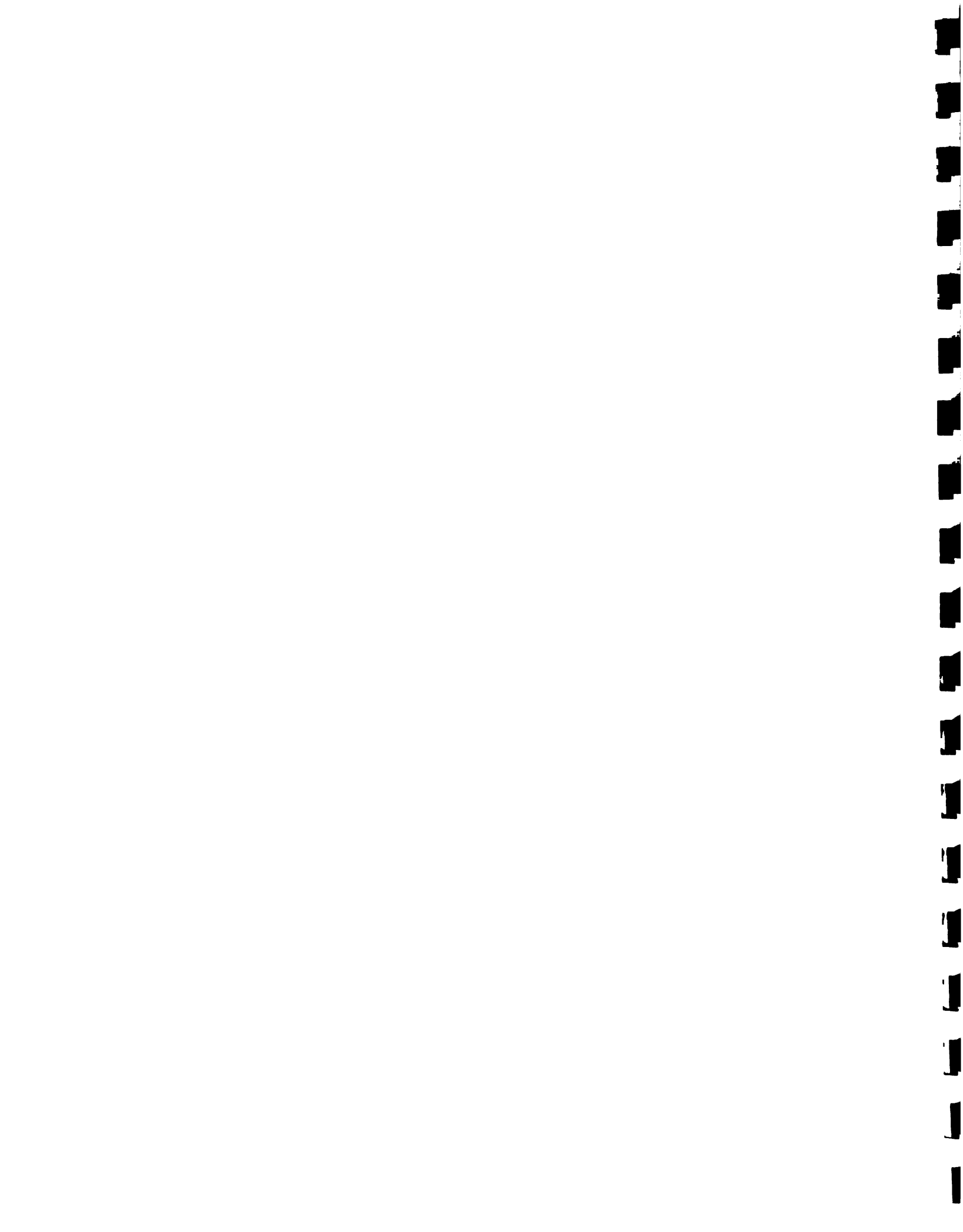


TABLE 2.6
FREQUENCY OF MARKETING ARRANGEMENTS FOR FARM PRODUCE

Destination	% of Farmers by Market Arrangement
Consumer	51.1%
Supermarket	2.3%
Hotels	5.1%
Huckster	30.5%
Marketing Board	10.9%
Total	100.0%

Source: Antigua and Barbuda Agricultural Census 1984 Vol.1 (1986)

From the information gathered, it seems as if farmers act in a rather haphazard way with respect to marketing. In effect, once the product is harvested, farmers go round offering it to different prospective buyers (hotels first) until, if not sold they turn to the CMC as the buyer of last resort. This modus-operandi indicates that there is room for improving the system without attempting any radical changes.

In the case of CMC, where statistics do exist, 105 metric tonnes of locally grown produce was purchased in 1987, valued at EC\$271,611. These 105 tonnes were distributed between more than 40 different commodities, reflecting the small size of CMC's average purchases. An additional 74,388 lbs. were purchased by CMC in 1987 from Dominican hucksters. These were valued at EC\$69,438.

In respect to supermarkets, there are approximately 12 large ones, 25 small or medium size ones and a large number of small shops. The volumes of fresh produce sold in each type is in direct relation to its physical size. The larger the supermarket the wider the diversity of crops and the larger the volumes handled.

As to the accommodation facilities for visitors to Antigua, there are approximately 40 hotels, 15 guest houses and 30 cottages, which together total over 3100 rooms. Tourist arrivals have increased substantially during the 1980's, and with their numbers topping 397,000 in 1989, they represent a large and growing market for food stuffs.

The only public market in Antigua is the one near the wharf in St. Johns. A few hucksters who retail fresh produce are situated at strategic locations scattered throughout St. Johns.

With respect to price formation the market for fresh produce is completely free and Government neither sets minimum prices for the farmer nor maximum prices for the consumer. Prices vary greatly from month to month in accordance with volumes



and source of supply. In general, prices for fresh produce in Antigua are considerably above those found in the other OECS Islands.

Main sources of fresh produce include domestic production, imports from Dominica and extra-regional imports, predominantly from Miami.

(b) Imports of Fresh Produce

Table 2.7 presents volume and value of imports of selected fresh produce into Antigua and Barbuda between 1985 and 1988 which represents the potential for import substitution for Antigua. By volume, this represents 16 times the annual purchases of CMC. A successful effort of import substitution could have a significant impact on the real economy.

(c) Exports of Fresh Produce

The export figures presented in Table 2.8 are not a sufficiently long series to draw any conclusions from. Nevertheless, they are pointing to certain areas that have to be monitored. First it is obvious that the significant increase in export earnings is due to the export of melons coming from one specific project. Second it points to the fragility of the export drive as represented by green beans and cucumbers.

(d) Identification of Constraints

The lack of an organized marketing system in Antigua can be attributed to four fundamental causes which are:

- 1) Unavailability of production information, necessary for decision making and the effective development of a marketing programme. This, in turn, is due to the lack of proper information collection mechanisms, scarce resources and the lack of an adequate information management system.

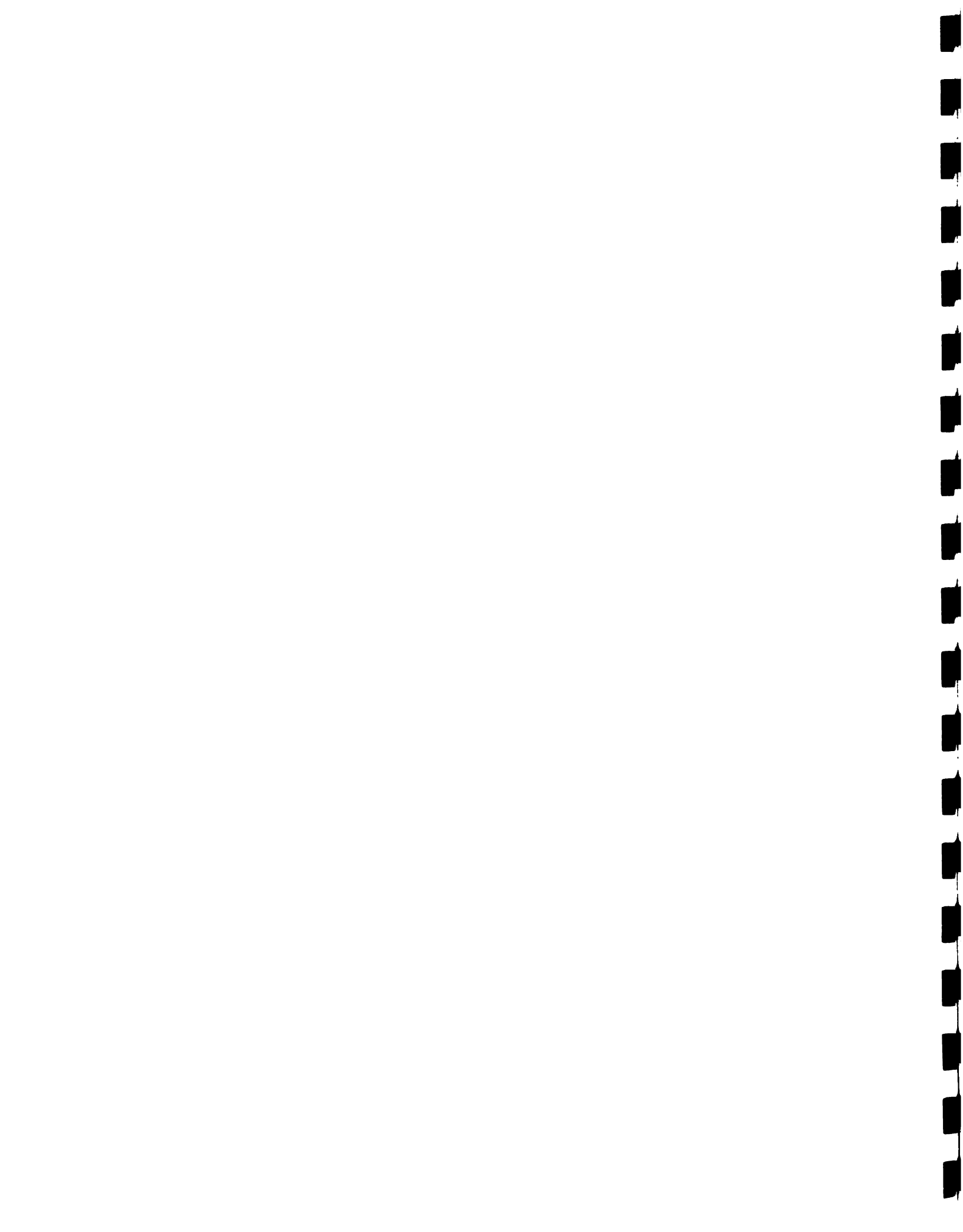


TABLE 2.7
SELECTED CROP IMPORTS, 1980-1988**

Crops	1980		1981		1984		1985		1986		1987		1988	
	Quantity Mt	CIF Value ECS'000	Quantity Mt	CIF Value ECS'000	Quantity Mt	CIF Value ECS'000	Quantity Mt	CIF Value ECS'000	Quantity Mt	CIF Value ECS	Quantity Mt	CIF Value ECS	Quantity Mt	CIF Value ECS
Vegetables & Root Crops	1362.0		1442.0		1984.0		1085.1	1475.8	2168.1	3066.7	1951.9	2917.3	137.9	235.8
Broccoli							n.a.	n.a.	34.8	98.7	31.6	95.9	137.9	235.8
Cabbage	80.0		29.0		158.0		48.7	77.0	84.6	165.3	148.9	249.8	343.2	534.8
Carrot	69.0		45.0		81.0		46.2	81.2	64.0	165.9	93.2	191.9	161.4	363.2
Cauliflower							n.a.	n.a.	28.5	68.1	20.5	86.7	26.9	92.3
Celery							34.5	49.8	45.7	78.6	47.1	66.1	37.4	76.3
Christophine							8.8	10.8	28.2	14.7	9.6	8.6	4.9	6.1
Cucumber							5.5	5.5	3.2	4.0	2.8	5.4	2.2	6.4
Dashienn	5.0		8.0		25.0		10.1	11.4	23.5	21.3	15.4	14.9	9.6	11.1
Egplant							2.8	4.8	4.3	7.2	4.1	5.9	30.3	56.1
Garlic	9.0		14.0		19.0		0.2	1.7	7.2	41.3	13.5	57.6	20.7	74.8
Lettuce							56.5	131.4	116.3	231.5	125.4	197.3	99.7	293.0
Onion	238.0		253.0		291.0		242.7	320.0	348.9	482.3	380.7	524.8	386.7	742.6
Plantain							115.5	51.0	242.3	88.7	224.0	67.2	74.2	80.1
Potato	774.0		879.0		922.0		422.3	454.5	920.1	903.3	617.2	657.0	1038.1	649.4
Pumpkin & Squash	3.0		3.0		31.0		6.0	9.0	36.0	40.3	14.4	28.7	30.0	40.0
Sweet Pepper	7.0		3.0		14.0		6.7	28.6	16.4	54.1	26.2	45.5	49.5	200.9
Sweet Potato	6.0		2.0		29.0		n.a.	n.a.	2.6	5.5	n.a.	n.a.	0.6	2.8
Tannia	5.0		9.0		29.0		24.1	27.5	55.8	47.6	37.7	31.7	17.1	30.7
Tomato	71.0		85.0		128.0		56.2	208.2	92.7	533.1	135.8	573.1	45.6	1779.4
Yam	3.0		12.0		8.0		1.9	3.5	13.1	15.1	3.6	9.2	4.2	6.2
Fruit*	260.0		241.0		450.0		251.3	271.5	655.8	500.5	478.3	373.4	880.9	791.7
Avocado							20.8	50.6	51.6	74.9	41.3	52.0	19.4	47.3
Banana							152.1	68.9	381.7	121.0	333.7	144.9	744.8	504.0
Grapefruit							15.9	17.6	36.0	27.7	23.5	19.2	19.0	70.0
Lime							6.7	15.2	17.6	18.3	7.6	9.5	13.0	19.8
Mango							16.8	18.8	23.2	13.3	0.1	0.1	1.3	3.3
Melon							18.0	55.8	89.0	195.2	45.2	119.9	41.1	39.7
Orange							18.9	30.8	52.2	40.4	25.7	25.2	36.6	91.7
Pineapple							2.1	13.9	4.5	9.7	1.1	2.7	5.7	15.7

* Excluding non-traditional fruits for 1980, 1981 and 1984.

** 1982 and 1983 missing.

n.a. Information not available

Sources: (1) See Folio #1 [Production & Marketing Intelligence Service (PROMIS)]
(2) Food and Agriculture Organisation of the U.N., Trade of fresh produce in the Eastern Caribbean, 1988.



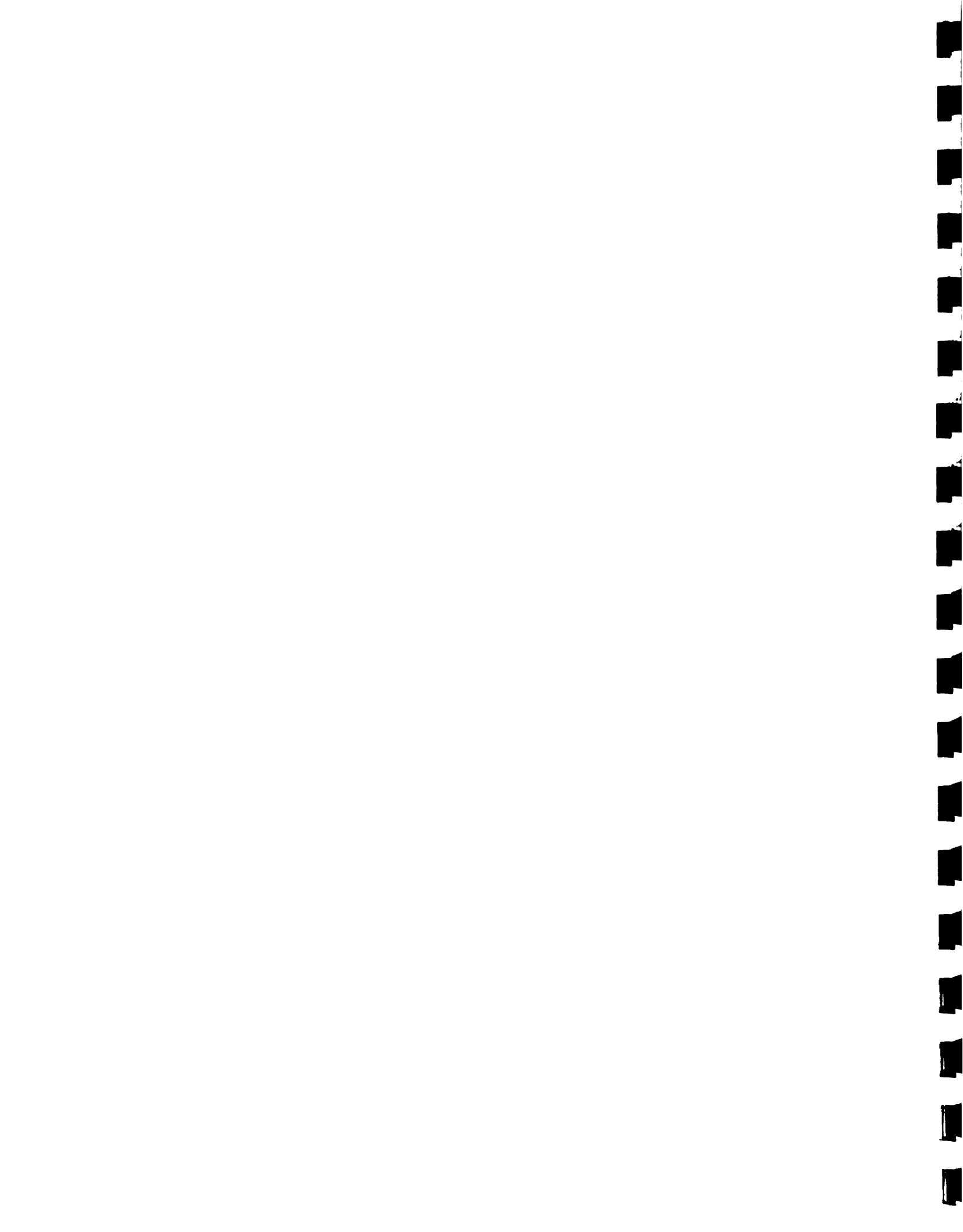
TABLE 2.8
EXPORT OF AGRICULTURAL PRODUCE, 1980-1987

Commodity	1980		1981		1984		1985		1986		1987	
	Quantity Mt	Value ECS'000	Quantity Mt	Value ECS'000	Quantity Mt	Value ECS'000	Quantity Mt	Value ECS'000	Quantity Mt	Value ECS'000	Quantity Mt	Value ECS'000
Fruits												
Apple	0.3	-	0.9	0.5	3.5	-	0.3	-	374.6	-	800.5	-
Banana	0.3	-	-	-	-	-	-	-	-	-	-	-
Mango	9.0	-	-	-	-	-	-	-	-	-	-	-
Melon	14.1	-	2.1	4.1	-	-	0.9	6.4	1.8	6.4	0.6	3.0
Oranges	3.1	-	2.2	0.3	-	-	0.8	-	-	-	-	-
Pineapple	-	-	-	-	-	-	-	-	-	-	-	-
Soursop	-	-	0.6	0.1	0.1	0.1	0.1	-	-	-	-	-
Stonefruit	-	-	6.2	-	2.3	-	-	-	-	-	-	-
Tamarind	-	-	-	-	-	-	-	-	-	-	-	-
Others	5.9	-	-	-	-	-	-	-	14.6	162.1	0.0	0.1
Vegetables												
Bean (green)	0.4	-	0.4	-	-	-	-	-	-	-	-	-
Bean (string)	1.9	-	1.8	-	-	-	-	-	-	-	-	-
Cabbage	0.1	-	1.8	0.0	1.0	0.0	0.0	0.0	0.0	0.2	-	41.2
Carrot	-	-	-	20.1	-	22.3	0.0	120.9	136.6	120.9	69.3	11.6
Cucumber	-	-	-	0.0	-	0.0	0.0	-	-	-	12.3	-
Eggplant	-	-	26.1	30.1	12.8	15.6	15.6	30.1	5.0	9.8	3.4	6.0
Okra	40.2	-	-	-	-	-	-	-	-	-	-	-
Onion	4.0	-	-	-	-	-	-	-	-	-	-	-
Pepper-hot	-	-	0.5	18.4	-	5.7	18.4	0.7	0.2	0.7	2.7	8.4
Pepper-sweet	-	-	2.7	-	-	-	-	-	12.6	18.0	5.6	19.0
Pumpkin & Squash*	-	-	3.0	3.1	-	1.0	3.1	0.1	0.1	0.2	14.8	13.7
Tomato	6.0	-	-	-	2.9	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-	-	-
Root Crops												
Irish Potato**	2.0	-	-	-	-	-	-	-	-	-	-	-
Arrowroot	0.2	-	-	-	-	-	-	-	-	-	-	-
Potato-sweet	2.4	-	1.7	2.0	-	0.9	2.0	-	-	-	9.5	9.4
Other Roots & Tubers	0.7	-	-	-	-	-	-	-	-	-	-	-
Other												
Cotton	-	-	0.1	0.7	0.2	0.1	0.1	0.7	0.2	0.4	1.1	2.9
Total	88.3	-	50.1	79.4	22.6	47.7	79.4	79.4	548.4	764.5	919.9	2267.4

* For 1985-1987 pumpkin only.

** Estimated quantity.

Sources: (1) IICA Document, Antigua & Barbuda, Agricultural Sector Assessment, for project identification.
[PROMIS (Production and Marketing Intelligence Service)]
(2) Food and Agriculture Organisation of the U.N., Trade of fresh produce in the Eastern Caribbean, 1988.



- 2) Insufficient volumes of quality produce on a sustainable basis.
- 3) Deficient public sector facilitating services.
- 4) Consumers have become accustomed to high quality imported produce from the USA and are moving towards convenience in food preparation.

2.7.2 Agro-processing

The agro-processing subsector is in the infant stage in Antigua. There are limited facilities and, in fact, the largest operation for the processing of fresh produce is the MALF's Food Chemist Laboratory which was established for experimental purposes. On a micro scale, there are several cottage or kitchen type operations where very small quantities of jams and jellies, hot sauces and fruit drinks are produced and retailed in shops.

One milk processing plant was constructed in 1989. At least one meat processing plant exists.

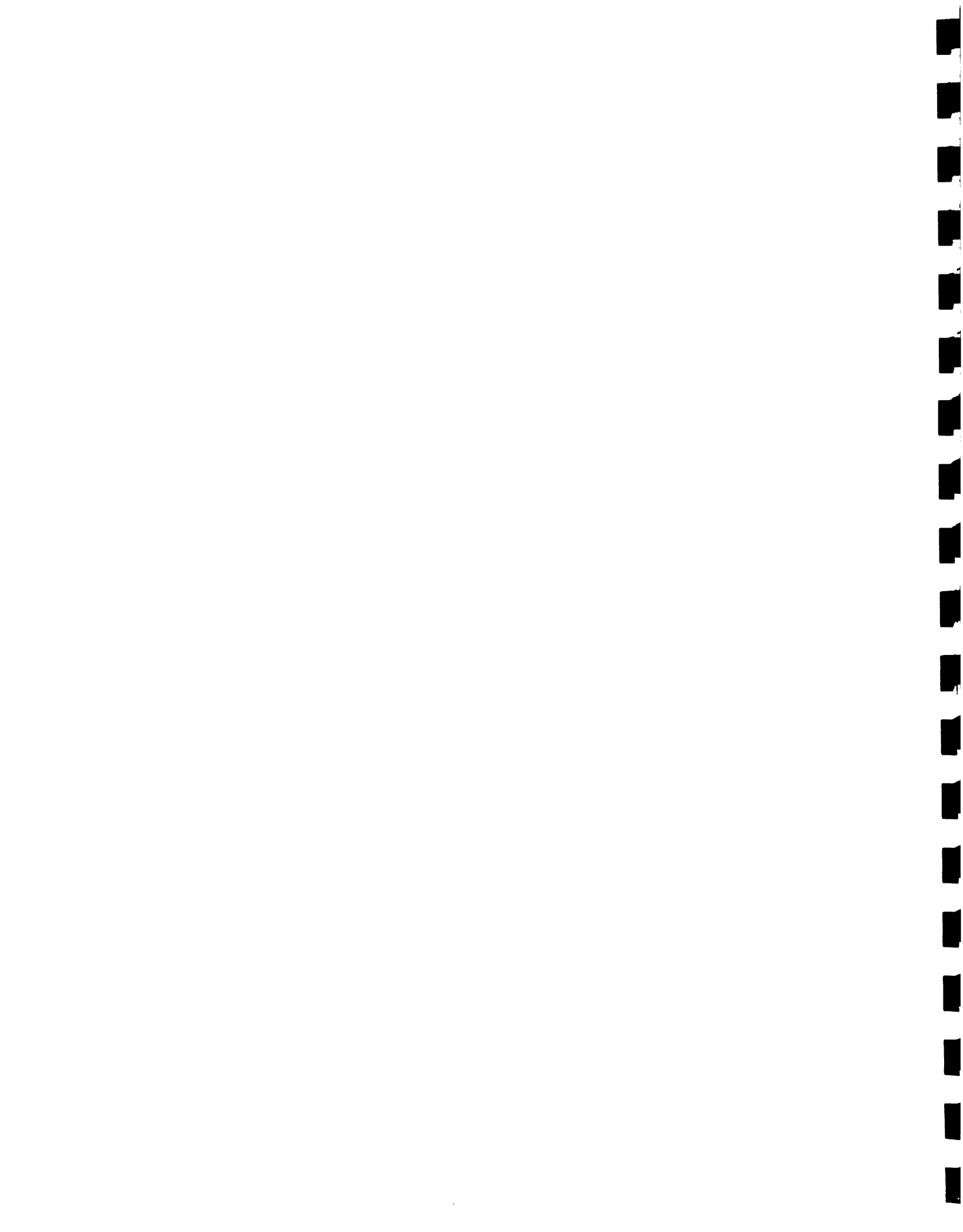
The primary functions of the Food Chemistry Laboratory are:

- analytical work with soil, water, seeds, drugs, processed foods and biological elements;
- research and development in such areas as processing; drying and pickling of fresh produce;
- food processing for experimental and commercial purposes; and
- advisory activities.

The Food Chemistry Laboratory has researched and produced several products which have been well received on the local market, including pineapple jam, hot sauce and the tomato and guava products. There is little problem in marketing, as these products cannot be produced in large enough quantities to meet the local demand.

The principal constraints identified with respect to the production of these commodities include:

- high costs of raw materials;
- scarcities and/or gluts of raw material;
- too small a scale of pilot plant for commercial operation;
- high costs of jars;



- high costs of shipping small volumes of inputs, thus necessitating purchase of two year inventory of jars.

2.8 Analysis of Sector Performance

2.8.1 Introduction

Although agriculture has played a leading role in the historical development of Antigua and Barbuda, the sector's share of national income has declined significantly over the last three decades. Data presented in Table 2.9 below show that the sector's contribution to GDP fell from an average 10.7% in the 1977-78, to 4.4% in 1987-88 and to 4.0% in 1989-90. Declines in the contribution of both the livestock and fishing subsectors were responsible for the reduction in the sector's contribution to GDP.

Shortage of agricultural labour, destruction of crops by livestock, inadequacy of institutional infrastructure, poor extension services, market deficiencies, inadequate research and development, poor delivery of cultivation services, and bad weather have been identified as factors responsible for the decline in the sectors contribution to GDP.

TABLE 2.9
AGRICULTURE GDP BY SECTOR OF ORIGIN
(EC \$ MILLION)

YEARS	TOTAL GDP	TOTAL AGRICULTURE	AGR/TOTAL GDP (%)	% COMPOSITION OF AGRICULTURE GDP			
				CROPS	LIVESTOCK	FORESTRY	FISHERIES
1977	158.8	17.4	11.0	14.6	38.5	1.7	45.2
1978	177.2	18.2	10.3	25.3	23.7	1.6	50.0
1979	217.4	17.9	8.2	16.2	29.1	1.7	53.0
1980	257.2	18.3	7.1	18.0	32.8	2.2	47.0
1981	289.4	19.6	6.8	23.0	38.8	2.0	36.2
1982	317.1	19.7	6.2	27.9	42.6	2.5	27.0
1983	356.1	21.8	6.1	23.4	39.4	2.3	34.9
1984	403.5	19.3	4.8	25.4	26.9	2.6	45.1
1985	468.3	23.2	5.0	31.0	27.2	3.0	38.8
1986	552.1	24.6	4.5	29.7	26.4	2.8	41.1
1987	647.5	29.3	4.5	31.4	24.6	2.7	41.3
1988	771.1	32.1	4.2	29.9	24.3	2.5	43.3
1989	874.2	34.1	3.9	29.6	24.0	2.6	43.8
1990	919.4	37.3	4.1	32.4	25.5	2.4	39.7

(a) Crops

Food Crop Subsector

The major food crops commercially grown in Antigua and Barbuda are sweet potato, cassava, yam and eddoe, collectively called "ground provisions". Bean, corn and some relatively small amounts of peanut are also produced. Locally grown bean and corn are consumed mostly in the green stage and as such are included herein in the group of vegetables.



The 1984-1985 agricultural survey suggests that current interest of market-oriented growers centers on sweet potato and yam. Also some potential for expanding the production of peanut in the country has been recognized and is being exploited by a joint MOA and CARDI effort.

These selected food crops are grown practically all over the country, particularly in the wetter areas. Their production is more efficient in those soils which are deeper, looser and better drained. The low levels of average relative humidity helps to control the incidence of some major diseases.

According to the 1985 Agricultural Survey, in the period 1984-1985 little over 300 acres of sweet potato, nearly 50 of yam and less than 10 of peanut were planted in the country. Yet only 90% of the sweet potato, less than 60% of the yam and about 90% of the peanut areas were reported to have been actually harvested. Several reasons have been advanced to explain the short-fall. They include lack of labour to harvest all the crop, insect and disease damage (especially anthracnose in yam), shortage of irrigation water, abandonment of the crop by the grower, damage caused by stray animals, and praedial larceny. The relative importance of those constraints tends to vary with farm size, type of crop, and category of farmer.

Statistical data available on production of food crops (Annex A - Table A2.1) indicate that during the 1978-1988 period local production has been very unsteady. Expressed in thousand pounds, it varied within the range of 222 (1985) to 1076 (1984) for sweet potato; 60 (1985) to 601 (1983) for yam; 27 (1985) to 222 (1983) for eddoes; and less than 1 (1983) to slightly over 16 (1984) for peanuts.

The major constraints to food crop production in Antigua and Barbuda has been identified as follows:

- (i) Shortage of high quality material.
- (ii) Scarcity of water and improper irrigation system management.
- (iii) Heavy production losses due to insects, diseases and weeds.
- (iv) High production costs.
- (v) Inappropriate production practices.
- (vi) Poor postharvest handling of produce.
- (vii) Lack of cold storage and/or drying facilities.



- (viii) Insufficient and inefficient technical support of the MOA extension services to growers.
- (ix) Insufficient institutional capacity and capability to generate improved technology and to adapt introduced technology to local condition.
- (x) Lack of capacity to tap available external funds to support technological development of food crop production.

(b) Vegetables

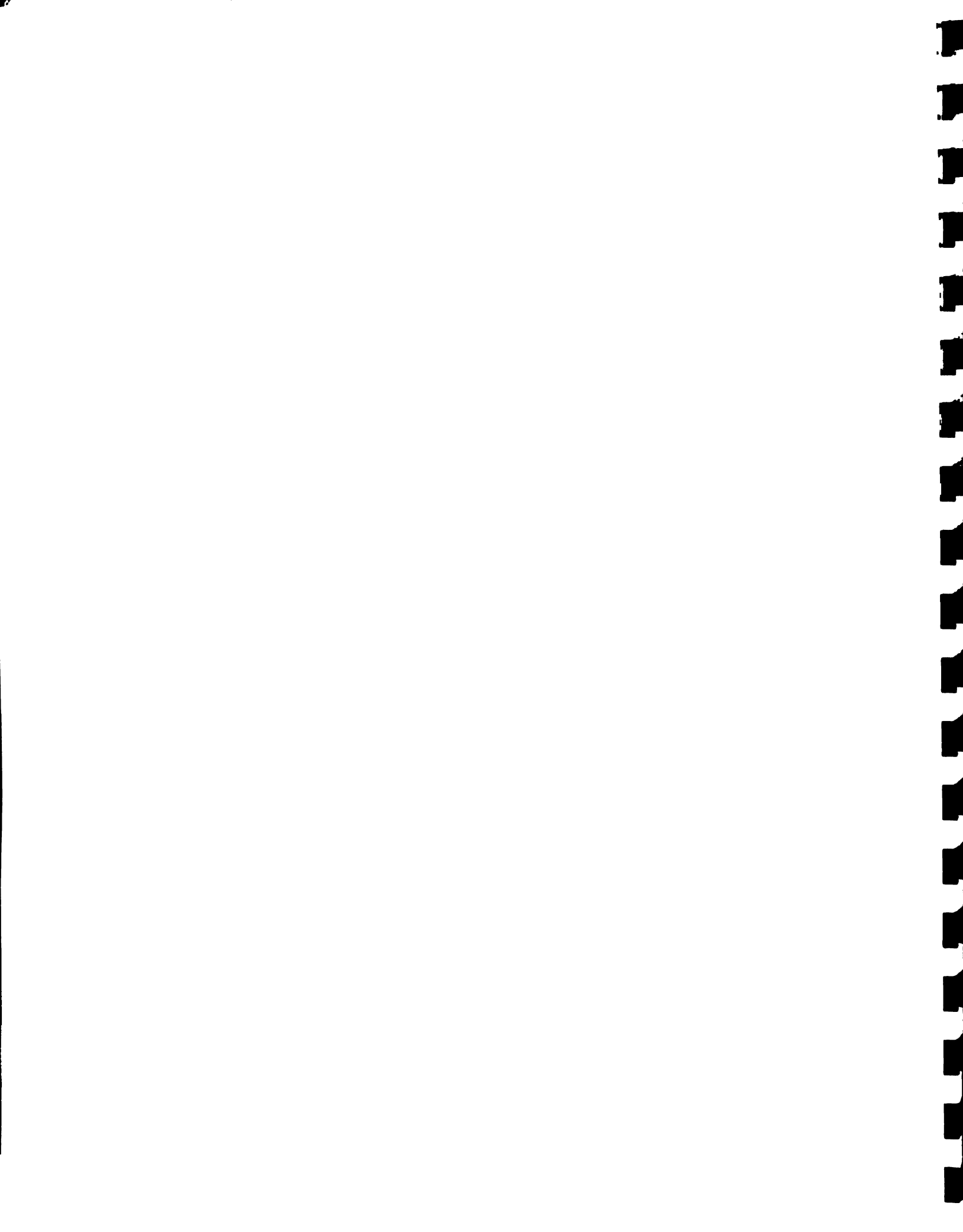
Among the vegetable crops cultivated in Antigua, those with significant economic potential, in order of priority, include:

CROPS	ECONOMIC POTENTIAL
Onion	Import substitution
Tomato	Import substitution
Carrot	Import substitution
Melon	Exports
Pumpkin	Import substit/Exports
Cabbage	Import substitution
Broccoli	Tourism industry
Cauliflower	Tourism industry
Cucumbers	Exports
Sweet peppers	Import substit/Exports

Vegetable crops are grown throughout Antigua. However, the major growing areas are in the north-central and south-central districts.

In Antigua, rainfall is the only limiting climatic factor to vegetable production. It is highly variable and unevenly distributed .

Given the precarious rainfall situation island wide, provision of supplemental irrigation for vegetable crop production is essential. Irrigation water supply must be more than adequate to compensate for the relatively high evapotranspiration rate (0.407 cm per day, on the average) caused by high day temperatures (75°F - 85°F) and moderate but constant winds. Irrigation is mainly through overhead sprinklers, but a few farmers operate drip irrigation systems. Inadequate maintenance of irrigation water sources often results in insufficient water supply to carry crops to maturity during the dry season.



Vegetable production during the period under review 1978-1988 have fluctuated (Annex A - table A2.1).

According to the 1984 Agricultural Census Report, pests and diseases are the most important problem confronting Antiguan farmers. Pest and diseases observed to be affecting vegetable crops in Antigua include:

Pests:

- Diamond back moth which is very severe on cabbage.
- Root knot nematode which affects carrot.
- Leaf miners which seriously affects tomato and the cucurbits.
- Rust mite which affects tomato.

Diseases:

- Black rot which seriously affects cabbage.
- Soft rot which affects carrot.
- Bacterial wilt which affects tomato.
- Fruit rot which affects tomato during the wet season.
- Downy mildew which affects cucurbits as well as onion.

Other factors limiting the production of vegetables in Antigua and Barbuda include the following:

- Inadequate supply of vegetable seeds
- Lack of validated technology
- Inadequate farm planning
- Scarcity and high cost of recommended fertilizers and chemicals
- Limited cold storage facilities at CMC
- Unreliability of farm machinery service
- Farm credit inaccessibility.



(c) Fruit Tree Crops

The most common fruit species found in the island are mangoes (Mangifera indica), pineapple (Anana comosus), sweet oranges (Citrus sinensis), grapefruit (C. paradisi), lime (C. aurantifolia), pummelos (C. grandis), avocados (Persea americana), papaya (Carica papaya), and different annonas (Annona spp.).

Although an explicit prioritization of fruits does not exist, the Ministry of Agriculture has been placing emphasis on pineapple, mangoes and citrus species. More recently, and as part of a sub-regional diversification plan for the OECS, the Ministry of Agriculture identified pineapple, mangoes and papaya as the priority fruit crops for Antigua.

Most studies conducted in the country agree that water availability is by far the most limiting factor to grow any particular crop, especially on the eastern side of the island. Proper zoning, water catchment in dams and reservoirs and the selection of crops requiring the least amount of water are presented as possible alternatives to deal with this problem.

Reliable statistics on total production, acreage and yield of fruits in Antigua and Barbuda are very scant. Nevertheless, some estimated figures do exist. Table 2.10 presents the estimated production of some selected fruit commodities for the period 1977-1988 as reported by the Statistical Department of the Ministry of Finance. According to the report, the production of fruits during the period 1977 to 1982 increased from 3.6 million pounds to 5.3 million pounds. However, in 1983 production fell to less than 1.4 million pounds.

By 1988 fruit production has again approached the level of 1977. For fruit species such as coconut, grapefruit and banana production levels did not recuperate. However, tremendous increases in production levels for limes and mangoes were recorded.



TABLE 2.10
ESTIMATED FRUIT PRODUCTION OF SELECTED FRUIT COMMODITIES 1977-1988
(000 lbs)

Species	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Mangoes	717.5	380.0	775.0	402.0	902.7	477.9	248.9	401.6	812.2	1001.4	1102.0	1322.0
Avocados	17.1	17.1	-	12.1	45.6	35.6	15.0	82.5	29.8	20.5	23.0	28.0
Pranges	108.0	101.1	63.1	54.1	88.1	151.6	20.6	208.8	70.4	95.4	104.0	125.0
Grapefruit	92.2	47.0	63.2	14.8	47.2	50.8	44.2	97.4	17.8	20.9	12.3	148.0
Limes	52.6	62.4	37.9	30.5	46.2	33.0	16.9	51.8	396.0	416.2	458.0	550.0
Guava	-	-	-	-	-	-	-	-	-	-	-	-
Papaya	-	-	-	-	-	-	-	-	-	-	-	-
Cherries	-	-	-	-	-	-	-	-	-	-	-	-
Soursop	-	-	-	-	-	-	-	-	-	-	-	-
Pawpaw	0.3	0.2	0.1	0.3	0.4	0.4	-	1.0	2.0	2.0	3.0	4.0
Pineapple	289.9	243.6	233.6	210.0	289.6	406.1	398.3	448.0	204.9	210.3	232.0	278.0
Bananas	945.8	1009.8	1090.3	1046.1	1131.5	1395.2	104.2	68.5	154.4	140.2	154.0	185.0
Coconuts	1370.0	1454.8	1477.2	1537.5	1602.5	2772.0	516.8	717.0	462.5	514.0	565.0	678.0
Total	3593.5	2316.0	3740.4	3307.4	4153.8	5322.6	1364.9	2075.6	2148.0	2419.1	2650.3	3318.0

SOURCE: Statistical Department, Ministry of Agriculture

Some of the main factors that were identified as limiting the production of fruit tree crops in Antigua and Barbuda are as follows:

- Deficient germplasm bank
- Poor condition of existing nursery facilities resulting in poor quality planting materials produced.
- Shortage and high cost of water
- High cost and scarcity of other inputs
- Poor orchard management practices
- Tech/packs are introduced and recommended without validation
- Deficient technical assistance to farmers
- Poor harvesting and postharvest handling procedures
- High assembly cost due to scattered production
- Small domestic market demand
- Competition from imported products
- Inaccessibility of credit



(d) Livestock

In an effort to support self-sufficiency, an import substitution strategy has been defined for the livestock subsector. The goal is to increase production of beef, milk, sheep and goat, eggs and pork production.

Several policies and programmes have been put in place in order to protect and assist farmers. Among others, are the availability of land to farmers under a 10 year lease, reduction on the importation of meat and milk products, establishment communal pasture for landless farmers, and the strengthening the animal health division to offer better assistance to livestock farmers.

In general, Antigua and Barbuda presents very good ecological conditions for livestock production, mainly for small and large ruminants. Good species of native grasses are abundant in both islands and in addition, protein is supplied by legumes year round because of high pH of the Antigua soil which is conducive for the growing of such forage. The gradual slopes of the land also allows cattle and small species to graze in most of the island. The main problem for livestock is the shortage of water during the dry period. However the topographic conditions should also allow for building ponds and reservoirs to collect running and rainfall water.

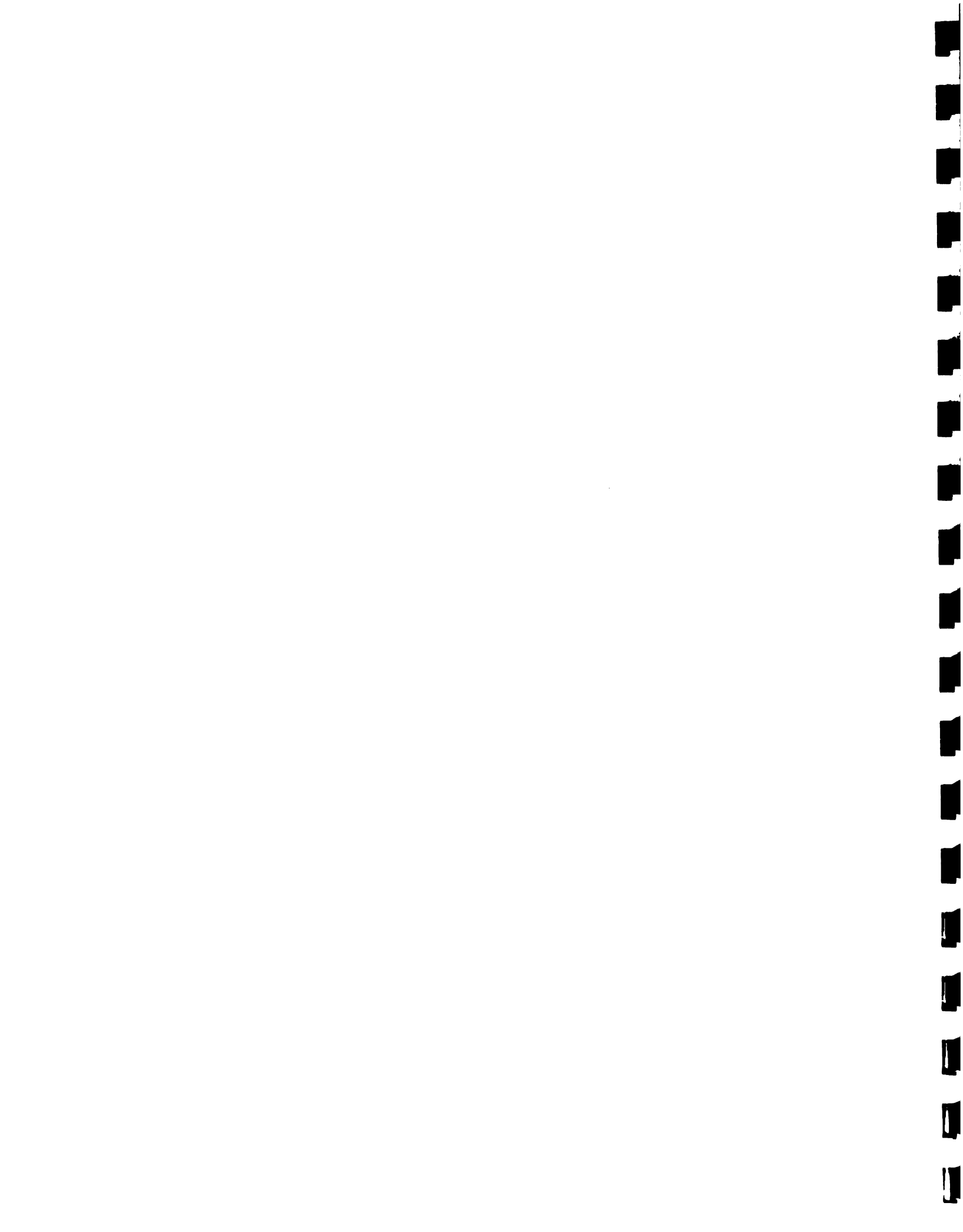
Small and large ruminants are the most important livestock reared and managed under very similar production systems in Antigua.

Ruminant production are mainly in the hands of landless farmers and 65% of the total animals are reared under unfenced, open grazing system. The rest are in private and government farms under controlled fenced grazing system.

The main source of feed for animals are native grasses and legumes. The main grass species are Antigua hay Dichanthium aristatum and bothriochloa pertusa, and the introduced grass species are Guinea Grass, Panicum maximum and Elephant Grass Pennisetum purpureum. An abundant number of the legumes grow natively. The most common one is Leucaena, Leucaena leucocophala. However, teramnus, desmodium clitoris, calpogonum species also grow mixed with native grasses.

No feed products or by-products are produced in the country. Main suppliers of these are Puerto Rico and St. Vincent.

In relation to breeds, most of the cattle is a mixed, or cross of Red Poll, Holstein and Island Breeds (Jamaica Red, Jamaica Hope and Senepol Breed). Pure breeds of Jamaica Red are also



kept mainly for beef production purposes. Sheep also are a mixture of different breeds like Barbados's Black Belly, Black Head Persian and Woolly imported breeds. Creole and crosses with Alpine and Anglo Nubian are the main breeds of goats found in the National flock.

Overall local livestock production supplies close to 32% of the total demand for animal products. Beef production supplies 56% of demand, local sheep and goat production 42% and swine local production 36% of total demand. Local milk production only supplies 34% of total demand. Eggs are 100% imported and 95% of chicken meat is also imported.

The main factors limiting livestock production in Antigua and Barbuda are as follows:

- a. land tenure system discourages long term investments needed for livestock. Fencing, water catchments and pasture improvements are investments that require long term scheduling for profitable returns.
- b. High number of deaths and weight losses during dry season.
- c. High costs of production inputs including feed-stuffs.
- d. Deterioration of grazing areas due to a lack of management of grazing animals.
- e. Low production and productivity of beef and dairy herds due to inadequate technology.
- f. Losses of animals due to larceny and attacks by wild dogs.
- g. Inadequate slaughter facilities and poor slaughter procedures which result in poor quality cuts, bad meat presentation and avoidable losses.
- h. Low farm gate prices to farmers.
- i. There is no research on pastures and pasture management.
- j. Lack of research on livestock production systems.
- k. Inadequate livestock extension services.



ANTIGUA AND BARBUDA
TABLE A1.1
GDP AT CURRENT MARKET PRICES, 1983-1990
(US\$ MILLION)

Item	1983	1984	1985	1986	1987	1988	1989	1990
Agriculture	8.1	7.1	8.6	9.1	10.9	11.9	11.9	13.8
Mining and Quarrying	0.9	1.1	1.7	3.7	5.3	6.2	7.8	6.5
Manufacturing	6.5	7.1	7.5	8.0	8.5	8.9	9.1	11.2
Construction	7.6	10.3	13.2	18.7	27.1	36.6	46.1	37.4
Electricity and Water	3.8	4.6	6.4	7.4	8.3	11.6	12.2	12.1
Transport and Communication	23.5	26.3	30.1	32.7	36.7	41.0	42.7	62.3
Distribution	14.3	16.0	17.9	19.5	22.3	25.1	28.9	23.1
Hotels and Restaurants	16.9	21.7	27.2	30.0	355.9	43.0	49.3	55.4
Banks and Insurance	8.8	10.6	11.6	12.4	13.9	15.4	16.0	22.3
Real Estate and Housing	15.4	17.0	18.0	19.1	21.0	23.0	24.0	26.2
Government Services	22.0	23.5	25.1	28.9	32.8	43.9	45.9	61.3
Other Services	10.4	12.3	14.5	16.3	17.3	18.3	18.6	21.8
Less imputed banking services	6.3	8.1	9.7	11.1	12.1	13.3	13.7	21.6
GDP at Factor Cost	132.0	149.4	172.1	194.6	227.5	270.6	298.7	331.8
Plus Net Indirect Taxes	21.4	24.1	28.1	41.3	46.6	59.9	82.2	92.5
GDP at Current Prices	153.3	173.5	200.3	235.9	274.1	330.5	380.9	424.3

SOURCES: Statistics Division, Ministry of Finance; OECS

ANTIGUA AND BARBUDA
TABLE A1.2
GDP AT CONSTANT 1977 PRICES, 1983-1990
(US\$ MILLION)

Item	1983	1984	1985	1986	1987	1988	1989	1990
Agriculture	4.3	3.4	3.5	3.7	4.2	4.4	4.6	4.9
Mining and Quarrying	0.4	0.6	0.9	2.1	2.8	3.1	3.9	3.1
Manufacturing	5.3	5.5	5.6	5.9	6.1	6.2	6.4	6.6
Construction	4.0	4.8	6.2	8.4	11.5	13.1	16.4	13.3
Electricity and Water	3.0	3.0	3.3	3.7	3.9	4.7	4.9	4.4
Transport and Communication	18.1	19.4	20.6	21.7	22.9	24.7	25.7	32.2
Distribution	8.1	8.6	9.1	9.6	10.2	10.9	11.4	11.8
Hotels and Restaurants	11.4	14.4	15.8	16.9	18.2	20.1	20.5	20.9
Banks and Insurance	5.4	5.7	6.0	6.2	6.4	6.8	7.0	8.8
Real Estate and Housing	8.6	8.7	9.1	9.4	9.9	10.3	10.8	11.3
Government Services	9.7	10.0	10.3	10.8	11.3	11.5	11.8	12.6
Other Services	6.0	6.4	6.9	7.0	7.1	7.3	7.4	8.0
Less imputed banking services	3.3	3.5	3.6	3.9	4.1	4.3	4.5	6.1
GDP at Factor Cost	81.0	87.0	93.7	101.6	110.5	118.9	126.2	131.8
Growth Rate (%)	6.9	7.4	7.7	8.4	8.8	7.6	6.1	4.4

SOURCES: Statistics Division, Ministry of Finance; OECS



ANTIGUA AND BARBUDA
TABLE A1.3
SELECTED TOURISM STATISTICS, 1983-1989

	1983	1984	1985	1986	1987	1988	1989
TOURIST ARRIVALS	176813	214407	260599	293200	326685	396585	397048
Air	106213	134607	146799	156800	159207	176893	175500
Cruiseship	55600	70000	104600	127000	153452	199810	207969
Yacht	13000	9800	9200	9400	14026	19882	13579
AIR ARRIVALS BY ORIGIN							
US	na	na	73065	79246	84202	80695	74576
Canada	na	na	14808	13623	13008	13080	14309
UK	na	na	15951	19387	18262	23493	23904
Continental Europe	na	na	12007	11090	15557	24047	22347
Caribbean	na	na	21661	23829	24278	26863	31244
Other	na	na	9307	9625	3900	8715	9120
CAPACITY*							
Units	94	96	95	104	114	116	na
Rooms	1959	2050	2950	2397	2604	3112	na
Average Occupancy	55.4	67.9	71.5	66.6	68.4	60.6	na
Expenditure (US\$M)	78.0	109.7	132.5	156.2	186.7	213.5	na

SOURCE: Statistical Division, Ministry of Finance; Department of Tourism; Development Planning Office; and Caribbean Tourism Office

* Total number of hotels, guest houses and apartments

ANTIGUA AND BARBUDA
TABLE A1.4
CENTRAL GOVERNMENT FINANCES
(US\$'000)

	1984	1985	1986	1987	1988	1989
TOTAL REVENUE AND GRANTS	36312	42831	58849	67151	74780	87303
Total Revenue	32609	42164	56590	64559	72113	82986
Current Revenue	32529	41966	56331	63999	70693	80690
Tax revenue	30082	36626	49820	57230	64278	71919
Non-Tax Revenue	2447	5340	6511	6769	6415	8771
Capital Revenue	80	199	259	559	1421	2296
Grants	3704	667	2259	2593	2667	4317
Current Grants						
Capital Grants	3704	667	2259	2593	2667	4317
TOTAL EXPENDITURE AND NET LENDING	40700	43007	74274	71060	86316	95068
Current Expenditure	33848	38081	48533	58097	75353	84920
Capital Expenditure	6852	4926	25741	12963	10963	10148
and Net Lending						
Current Account Surplus/ (Deficit)	(1319)	3885	7798	5902	(4660)	(4230)
OVERALL SURPLUS/(DEFICIT)	(4388)	(176)	(15425)	(3909)	(11536)	(7765)



ANTIGUA AND BARBUDA
TABLE A1.5
CENTRAL GOVERNMENT REVENUE AND GRANTS
(US\$'000)

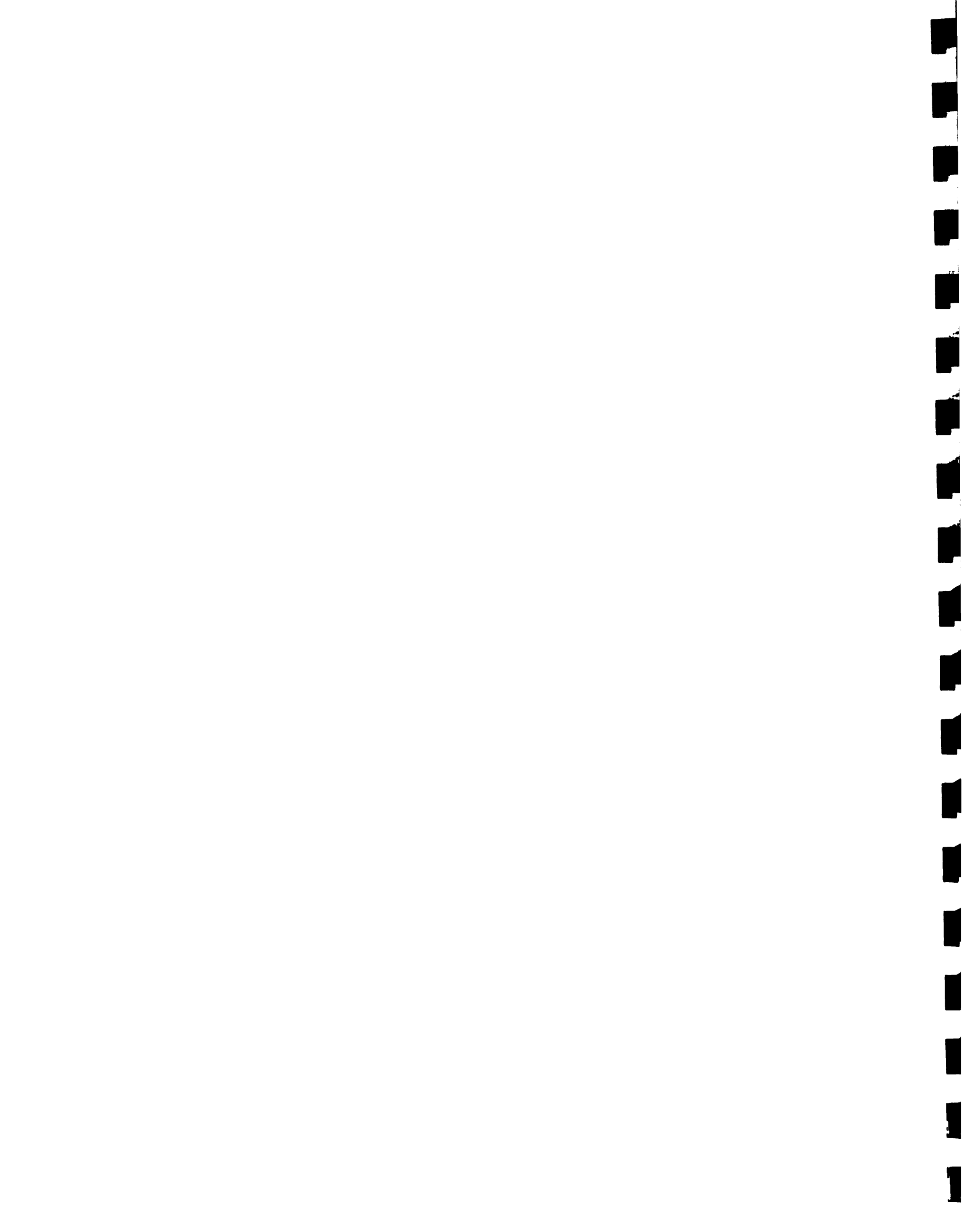
Transaction Category	1984	1985	1986	1987	1988	1989
CURRENT REVENUE	32529	41966	56331	63999	70693	80690
TAX REVENUE	30082	36626	49820	57230	64278	71919
Taxes on income, profits capital gains	5000	7209	6522	7621	7842	9176
Corporate or enterprise taxes	4805	7149	6449	6983	7374	8926
Individual income tax	195	60	74	638	468	250
Unallocable taxes						
Tax on Property	19	613	719	967	1072	1321
Real estate taxes						
Recurrent taxes on net wealth	19	613	719	967	1072	1321
Estate inheritance and gift taxes						
Financial & capital transaction taxes						
Domestic taxes on goods and services	14343	16999	25755	30284	35332	39729
Consumption duty	8805	9641	14405	17212	19554	21296
Retail sales taxes						
Excises						
Other domestic taxes on goods and services	5538	7357	11350	13071	15779	18432
Taxes on international trade & transactions	9496	10355	14188	14968	17270	18544
Import duties	8143	9693	11608	12932	14987	15926
Export duties	8	8	16	25	19	26
Foreign exchange levy	1345	654	2565	2011	2265	2593
Other tax revenue	1224	1450	2635	3410	2760	3149
Stamp duty	1202	1364	2056	2157	2464	2407
Other tax revenue	23	86	579	1253	296	741
NON-TAX REVENUE	2447	5340	6511	6769	6415	8771
Operating surpluses of departmental enterprises						
Property income	296	3122	3414	3412	3226	4210
Property income from public enterprises	493	543	240	249	35	155
Other property income	788	2579	3174	3163	3191	4365
Administrative charges, fees and non-industrial sales	989	1132	2708	2827	2637	3928
Fines and forfeits	74	134	128	95	242	370
Contribution to government employee pension fund						
Other nontax revenue	1089	951	261	435	310	262
CAPITAL REVENUE	80	199	259	559	1421	2296
Sales of fixed capital assets						
Sale of stocks						
Sale of land and intangible non-financial assets						
Sale of land	80	199	259	559	1421	2296
sale of intangible non-financial assets	80	199	259	559	1421	2296
GRANTS	3704	667	2259	2593	2667	4317
Current grants						
Current grants from abroad						
Current grants from other levels of national government						
Capital grants	3704	667	2259	2593	2667	4317
Capital grants from abroad						
Capital grants from other levels of national government						
REVENUE AND GRANTS	36312	42831	58849	67151	74780	87303



ANTIGUA AND BARBUDA
TABLE A1.6
CENTRAL GOVERNMENT EXPENDITURE AND NET LENDING BY ECONOMIC CHARACTERISTIC
(US\$'000)

Transaction Category	1984	1985	1986	1987	1988	1989
CURRENT EXPENDITURE	33848	38081	48533	58097	75353	84920
Expenditure on goods and services	26696	32135	39036	46742	62998	76750
Interest payments	4778	3444	6368	8306	9216	1970
Interest payments to local recipients						
Interest payments to foreign recipients						
Subsidies	110	108	143	243	454	561
Subsidies to public enterprises	110	108	143	243	454	561
Subsidies to private enterprises						
Current Transfers	2264	2393	2986	2807	2685	5640
Transfers to other levels of Nat. Govt.	148	177	221	258	199	304
Transfers abroad	486	527	600	492	315	2228
Transfers to households	1566	1580	2067	1913	2054	2919
Transfers to non-profit institutions	64	109	98	144	116	189
CAPITAL EXPENDITURE	6852	4926	25741	12963	10963	10148
Fixed Capital Formation						
Purchase of land and intang. non-financial assets						
Capital Transfers						
NET LENDING						
Domestic Net Lending						
Net Lending Abroad						
EXPENDITURE AND NET LENDING	40700	43007	74274	71060	86316	95068
General Public Services	10206	13164	14208	17282	24076	29814
General administration	7405	9772	10385	12577	18546	21778
Public order and safety	2801	3392	3822	4705	5530	8036
Defence	549	653	794	985	1113	1516
Education	4266	4391	5844	6340	8619	12638
Health	4758	6255	7027	7959	9554	13749
Social Security and Welfare	2077	1963	2474	2640	2777	4489
Social security	1994	1886	2360	2476	2573	3883
Social assistance and welfare	83	77	114	164	205	606
Housing and Community Amenities	327	300	460	414	572	753
Housing			116			
Community development	160	191	227	229	355	532
Sanitary services	167	110	117	185	217	221
Other Community and Social Services	208	313	329	371	497	610
Economic Services	6678	7598	11031	13799	18927	19381
General Administration	1637	1774	1759	2072	2437	3214
Agriculture, forestry and fishing	1252	1647	1717	2032	2428	3538
Mining, manufacturing and construction	2392	2074	1953	2846	4301	5381
Electricity, gas and water			855	1061	848	1543
Roads	1041	1817	2468	3127	4944	4302
Transportation and communication	89	97	2091	2461	3746	1080
Tourism	268	187	189	202	224	323
Other economic services						
Other Purposes	4778	3444	6368	8306	9216	1970
Interest and commissions	4778	3444	6368	8306	9216	1970
Other						
TOTAL CURRENT EXPENDITURE	33848	38080	48533	58097	75353	84920

Note: Net Lending is included in Capital Expenditure



ANTIGUA AND BARBUDA
TABLE A1.7
SUMMARY OF EXTERNAL PUBLIC DEBT OPERATIONS, 1987 - 1990
(US\$ MILLION)

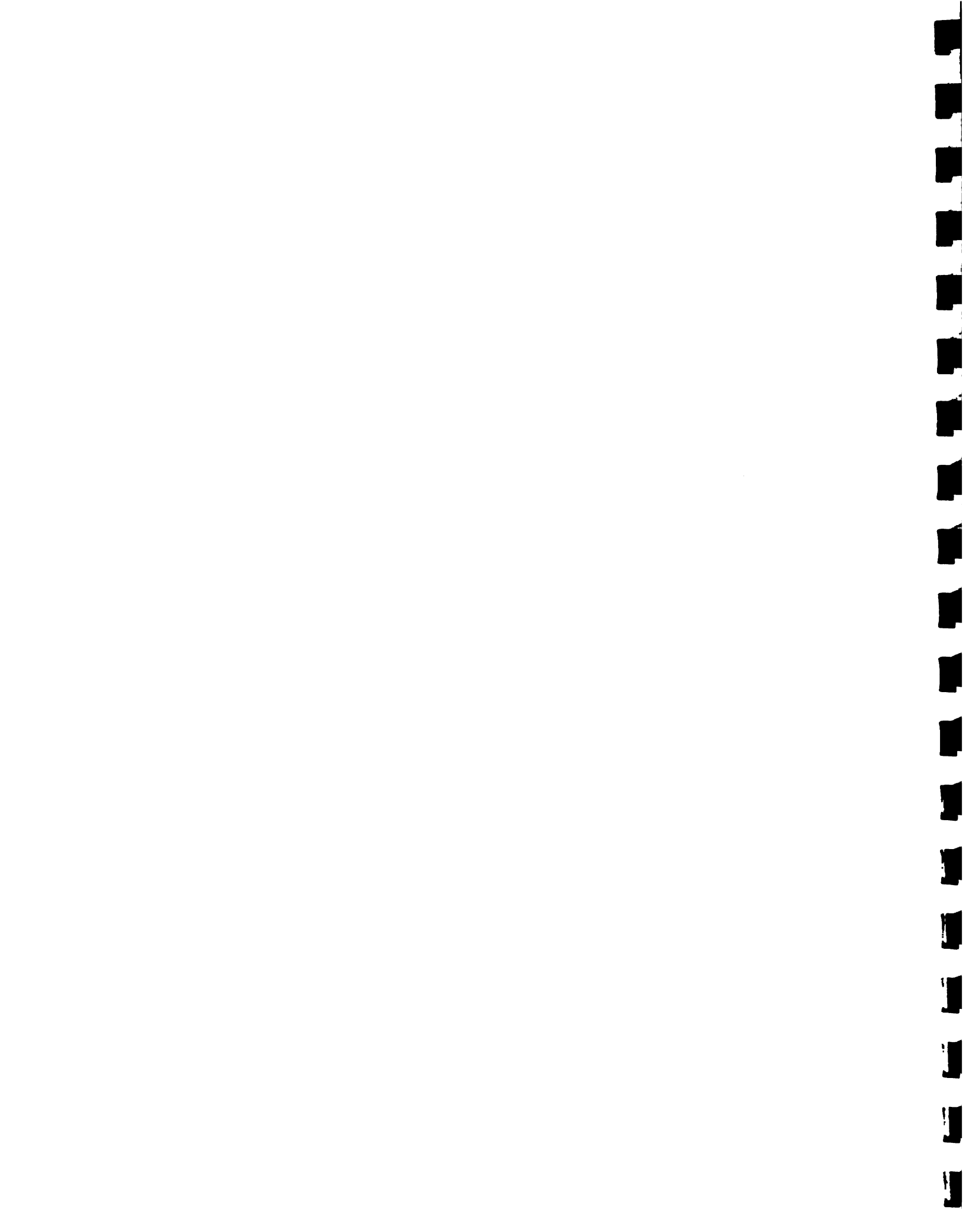
Item	1987	1988	1989	1990
Disbursed Debt Outstanding	230.5	234.3	236.9	238.4
Debt Service Payments	15.7	13.5	1.0	0.4
Amortisation	9.0	5.8	0.7	0.3
Interest Payments	6.7	7.7	0.3	0.1

SOURCE: Ministry of Finance and CDB Estimates

ANTIGUA AND BARBUDA
TABLE A1.8
ANALYSIS OF COMMERCIAL BANKS LOANS AND ADVANCES, 1984-1990
(US\$M)

Items	DECEMBER 31						
	1984	1985	1986	1987	1988	1989	1990
Agriculture	0.6	2.0	3.4	4.4	5.5	1.7	3.0
Manufacturing	7.1	9.3	6.1	8.1	7.2	7.4	7.0
Distributive Trades	5.4	7.9	12.6	15.0	22.9	26.9	30.9
Tourism	7.3	10.0	12.3	13.4	13.6	22.4	26.2
Entertainment and Catering	0.6	1.4	1.2	2.6	3.0	3.3	3.8
Transportation	3.0	4.2	4.4	6.9	4.5	2.6	3.2
Public Utilities	0.2	1.3	1.2	1.6	3.4	1.9	1.9
Construction and Land Development	9.4	11.1	14.1	18.7	27.6	31.1	31.5
Professional and other Services	1.0	1.3	1.1	2.4	5.1	7.6	10.9
Personal	35.7	41.4	55.4	52.9	65.3	79.7	82.9
Government and Statutory Bodies	12.5	12.3	18.3	20.0	23.0	22.1	20.0
Other	9.1	9.1	0.2	0.5	2.5	2.7	1.9

SOURCE: ECCB



ANTIGUA AND BARBUDA
Table A1.9
Commercial Bank Assets and Liabilities, 1986-1990
(US\$M)

Items	DECEMBER 31				
	1986	1987	1988	1989	1990
TOTAL ASSETS	206.1	237.0	270.4	289.9	304.8
Cash	3.0	1.7	2.5	2.9	6.1
Deposits with ECCB	19.9	11.7	9.7	5.1	8.0
Statutory Reserves and Deposits	8.8	8.4	12.2	13.0	11.2
Deposits with other Banks	5.9	7.2	5.1	5.5	6.8
Loans and Advances	130.2	155.9	183.6	209.3	223.1
Treasury Bills	3.6	3.9	3.5	4.0	3.6
Government Securities	2.2	2.4	4.6	5.5	5.5
Foreign Assets	16.2	23.2	30.5	22.6	25.1
Other Assets	16.3	22.5	18.8	21.9	21.0
TOTAL LIABILITIES	206.1	237.0	270.4	289.8	304.8
ECS Deposits	139.8	160.9	186.6	208.9	220.3
Demand	25.7	29.3	34.2	34.7	40.8
Savings	48.2	58.6	73.6	85.9	102.4
Time	65.9	72.9	78.9	88.3	77.1
Foreign Current Deposits	8.3	11.7	9.9	12.0	10.3
Balances due ECCB	0.8	1.5	2.4	1.1	0.2
Balances due other Banks	11.6	7.6	15.1	13.9	12.3
Foreign Liabilities	19.6	25.7	22.0	20.1	22.3
Other Liabilities	26.0	29.6	34.6	33.9	39.3

SOURCE: Quarterly Commercial Banking Statistics, ECCB

ANTIGUA AND BARBUDA
TABLE A1.10
PRICES INDICIES, 1982 - 1986

Item	1982	1983	1984	1985	1986
All Items	436.6	452.3	469.4	459.8	469
Food and Beverages	499.5	525.8	557.3	546.9	563.9
Alcoholic Beverages and Tobacco	387.9	387.2	417	331.2	396.1
Housing	250.5	258.1	262.5	251.5	257.8
Utilities	495.7	495.7	495.7	495.7	495.7
Cooking and Accessories	539.5	529.1	534.9	505.8	460.6
Transportation	497.9	497.9	497.9	514.4	531.4
Household Operations and Miscellaneous	452	499.7	515.2	503.9	514.5

SOURCE: Statistics Division, Ministry of Finance and CDB Staff



ANTIGUA AND BARBUDA
TABLE A2.1
PRODUCTION ESTIMATES OF MAIN AGRICULTURAL COMMODITIES, 1975-1989

	UNITS	1978	1979	1980	1981	1982	1983	1984A	1985	1986P	1987
TRADITIONAL CROPS											
Sugar Cane	000 tons						5	3			
ROOT CROPS											
	000 lbs										
Beet	"						60	14	135	130	142
Cassava	"						96	117	121	62	68
Eddoes	"						222	49	27	80	88
Peanuts	"							16			
Sweet Potatoes	"	1014	345	398	706	502	777	1076	222	366	402
Yams	"						601	215	60	102	112
VEGETABLES											
	000 lbs										
Beans	"						119	81	218	65	76
Cabbage	"						365	118	258	185	204
Carrots	"	832	291	273	393	261	405	557	304	297	326
Cucumber	"	387	361	321	344	326	308	316	607	725	297
Eggplant	"						172	219	343	411	456
Ginger	"	171	54	123	169	72	3	91	90		179
Hot Pepper	"						22	32	1	6	4
Maize	"						150	397	83	95	105
Okra	"						132	21	266	105	116
Onion	"	283	234	134	148	86	102	84	50	61	68
Pumpkin	"						255	480	371	390	428
Squash	"	91	137	253	290	239	187	40	329	141	154
Sweet Peppers	"						124	193	60	59	65
Tomatoes	"	933	353	211	290	379	627	434	331	281	309
FRUIT											
Avocado	000's						15	83	30	21	23
Bananas	000 lbs	1010	1090	1046	1132	1395	104	685	154	140	154
Coconut	"	1455	1477	1538	1602	2772	517	171	463	514	568
Grapefruit	"						44	97	18	21	123
Limes	"						17	52	396	416	458
Mangoes	"	380	795	402	903	478	249	402	812	1001	1102
Mellon	000 lbs						106	26	270	325	1235
Oranges	000's						21	209	70	95	104
Paw Paw	000 lbs							1	2	2	3
Pineapples	"	244	235	210	290	406	398	448	205	211	232
OTHER											
Cotton Lint	000 lbs						5	5	72	60	66
DAIRY & MEAT											
Eggs	Metric tons	132	136	140	140	145	150	155	160	163	
Milk	Metric tons	11000	12000	13000	13000	6000	6000	6000	6000	6000	
Cattle	Head 1000	9	19	15	15	16	16	16	17	18	
Chicken	"	64	66	66	68	70	70	70	70	13	
Goats	"	13	14	10	12	12	12	9	13	4	
Pigs	"	6	3	6	6	7	7	4	5	13	
Sheep	"	13	14	10	12	12	12	9	11	500	
Beef & Veal	Metric tons			509	453	408	453	478	479		
Mutton	"										
Pork	"					60	60	181	227		
Poultry Meat	"	5000	5000	5000	5000	5000	5000				
FISHERIES											
Fish (nominal catches)	Metric tons	1950	1453	1438	1106	904	1058				

(Note: For Dairy & Meat, notations (A) and (P) do not apply)

P: Provisional

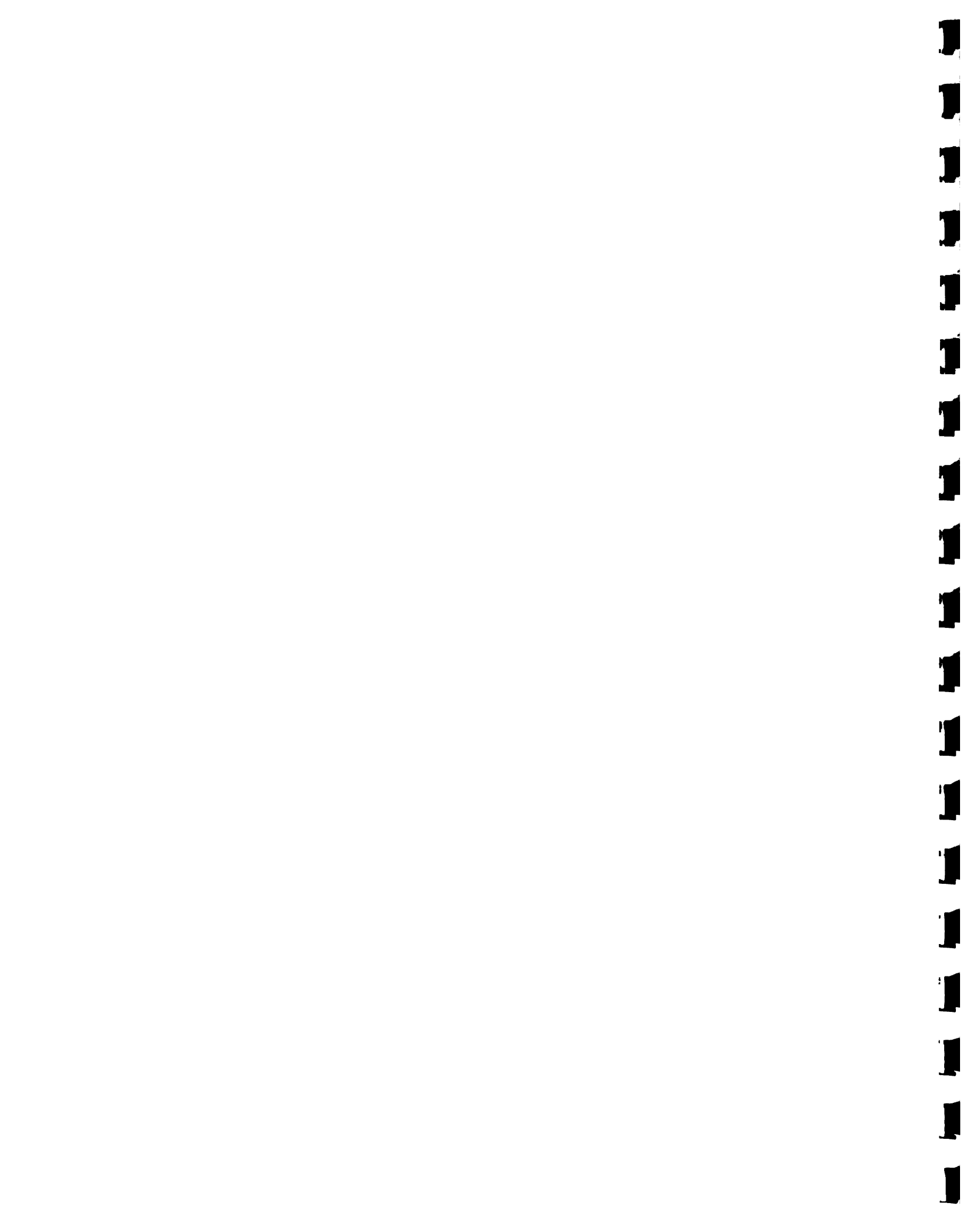
A: Survey and Census figures from Agricultural Census 1984



ANTIGUA AND BARBUDA
TABLE A2.2
RETAIL PRICES OF SELECTED COMMODITIES, (ECS) 1981-1986

COMMODITY	QUANTITY	1981	1982	1983	1984	1985	1986
FRUITS							
Bananas	1	0.33	0.27	0.33	0.33	0.33	0.33
Oranges	1	0.78	0.78	1.03	1.38	1.33	1.42
Mangoes	1	0.50	na	na	na	na	0.50
VEGETABLES							
Cabbage	453.6g	2.00	1.92	2.22	2.42	2.50	3.00
Carrots	453.6g	2.06	2.55	2.27	2.43	2.13	1.91
Potatoes	453.6g	0.80	0.81	0.71	0.86	0.68	0.71
Tomatoes	453.6g	2.75	2.75	2.25	3.53	3.42	4.75
MEAT, POULTRY & FISH							
Beef (fresh, local)	453.6g	2.00	2.50	2.50	2.50	2.50	2.50
Chicken (legs)	2.3g	15.12	13.67	12.52	12.82	12.49	11.54
Chicken (Back & neck)	2.3g	5.18	5.87	5.59	5.48	5.99	6.18
Cheese	453.6g	5.12	5.65	4.10	4.04	4.13	4.75
Eggs (medium)	1 doz	4.89	4.78	3.77	4.50	5.83	5.55
Milk (evaporated)	170.01	0.65	0.74	0.72	0.67	0.68	0.63
Fish (fresh, local)	453.6g	1.50	2.00	2.25	2.25	2.42	2.50
OTHER							
Bread	680.4g	1.85	2.00	2.33	2.25	2.25	2.25
Macaroni	453.6g	2.56	2.34	2.63	1.79	1.70	1.67
Orange Juice	.3L	1.60	1.58	2.53	2.74	2.90	3.20
Prepared meals	1	6.53	9.17	9.33	10.00	10.50	11.67
Rice	907.2g	2.95	3.04	1.96	2.14	2.06	2.08
Sugar	153.6g	1.54	0.96	0.86	0.98	0.93	1.09

SOURCE: Antigua Statistics Yearbook (1985); and CDB estimates



BARBADOS

CHAPTER III

3. GENERAL ECONOMIC REVIEW

3.1 Introduction

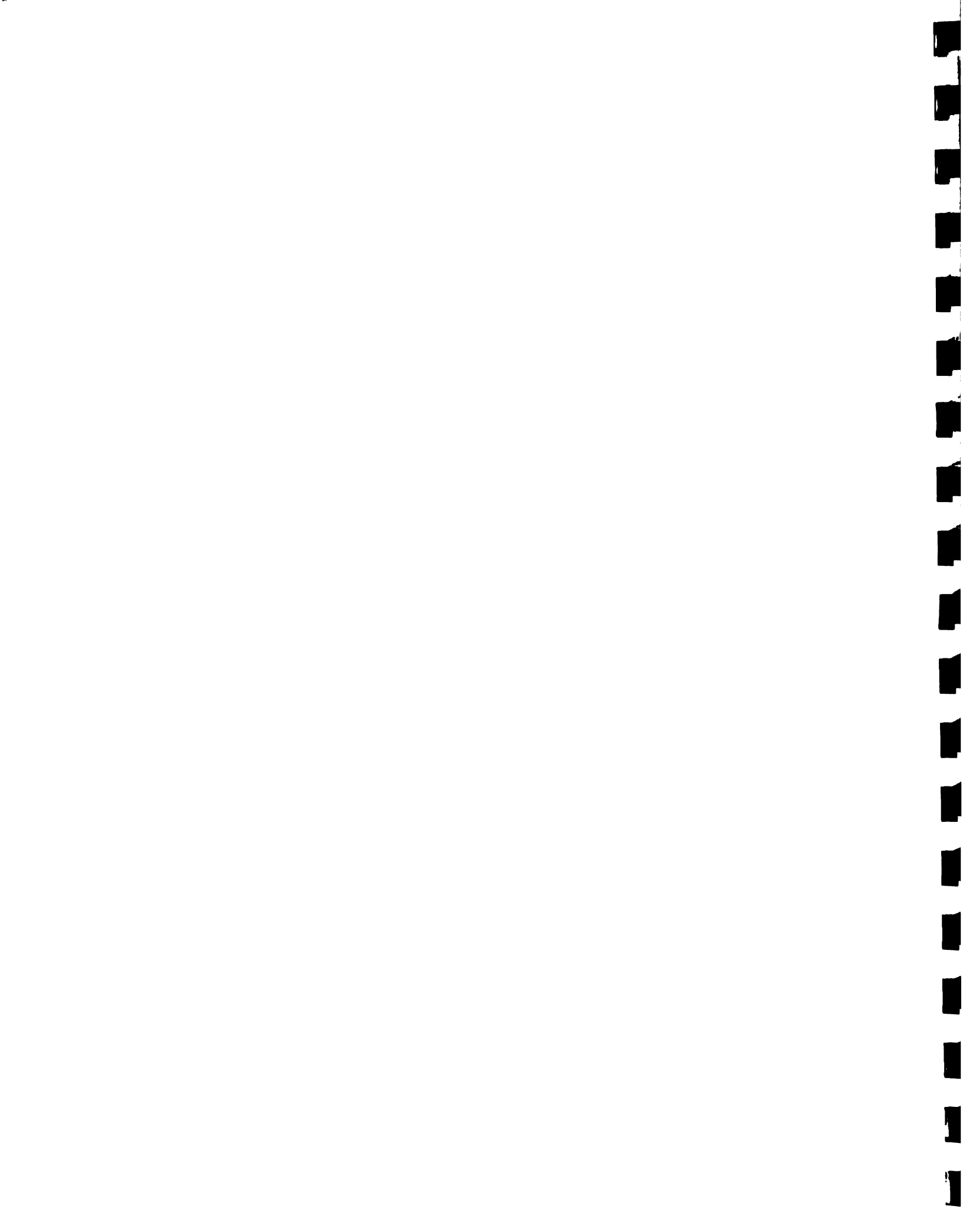
Barbados is the most easterly as well as the most densely populated island in the Caribbean, with a quarter of a million residents (more than 1,500 persons per square mile). The country, with limited physical resources, has made substantial progress since independence in 1966 in improving the living standards of its people and diversifying its economic base. Per capita income was estimated at US\$6,715 in 1990 compared with approximately US\$1300 in 1974 and overall growth in real output averaged some 1.6% annually between 1980 and 1990.

Barbados' economic growth over the past quarter century has been characterised by periods of rapid expansion (1965-70, 1977-80) in overall output, with the services sector making the principal contribution to both growth and employment. The secondary sector, despite moderate real growth, barely managed to maintain its contribution of some 20-23 percent at GDP, while the agricultural sector (primarily sugar) actually declined in both absolute and relative terms, from one-quarter of GDP in the early 1960's to 5.2 percent in 1990.

The result over the long term has been overall growth in real output averaging some 3.3 percent annually since 1960, and, with little growth in population, a per capita growth rate averaging about 2.6 percent a year. With a relatively equitable distribution of income, generally well-developed economic and social infrastructure, and stable economic direction, Barbados has become in many respects a model of a modern, service-based, middle-income developing country.

Despite this generally enviable record, some disquieting signs have begun to appear in recent years which could endanger the continued growth of the economy over the medium term. Real investment has fallen dramatically since 1981, public savings have been eroding steadily, and unemployment has risen to alarming levels. Although tourism registered a strong recovery in 1986-88 from its depressed levels of 1981-85, Barbados is losing its share of the Caribbean tourism market to lower cost competitors such as the Dominican Republic and Jamaica, while its fledgling export manufacturing sector has been decimated by the pullout of a few large operations.

Gross investment has fallen from more than 24 percent of GDP in 1976-80 to 16 percent in 1984-88 (with three-quarters of that fall in private investment), despite domestic savings levels

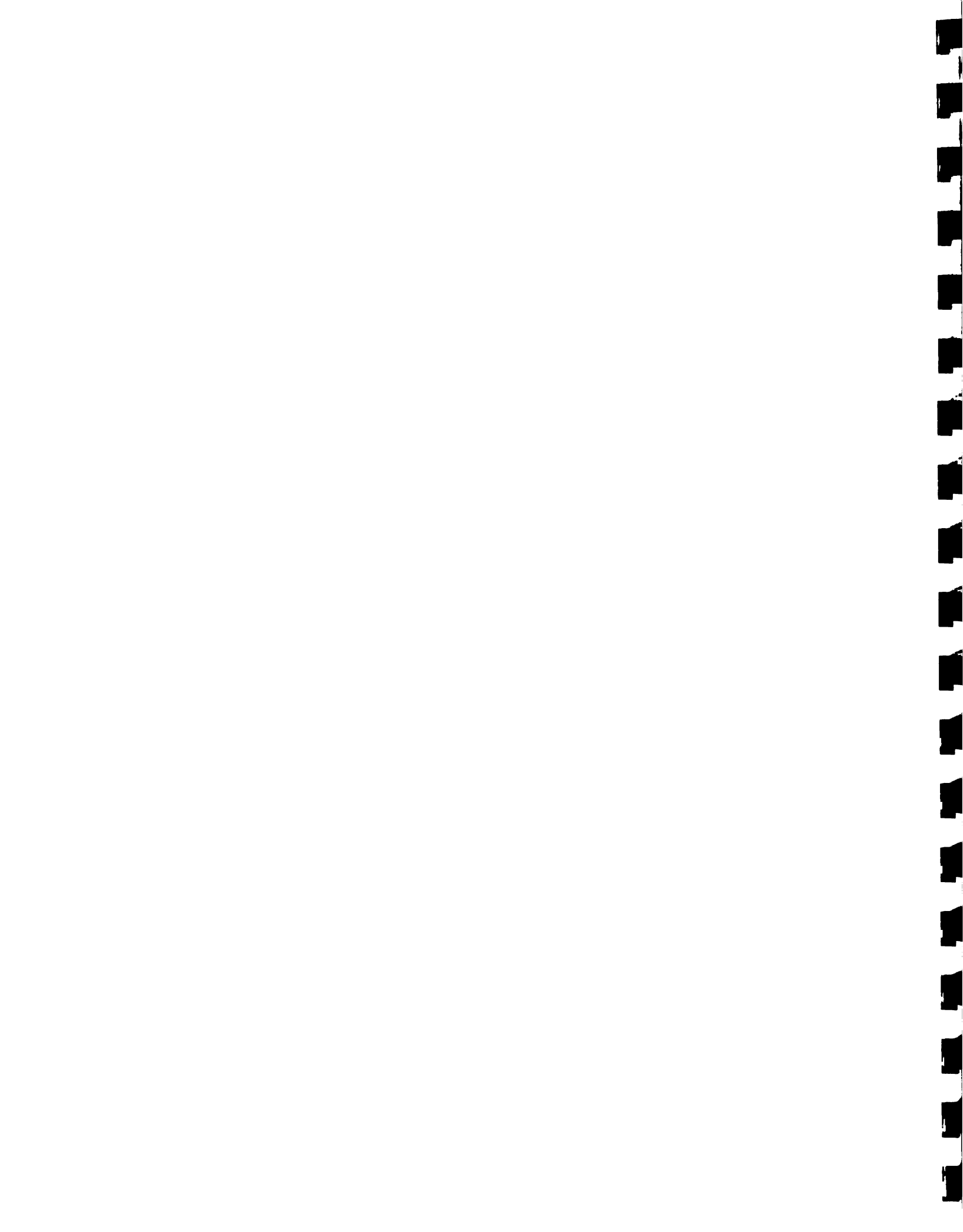


considerably in excess of those registered during the 1970's. This suggests that inadequate savings do not appear to have been the principal constraint to increased levels of investment and growth. With high levels of liquidity in the domestic financial system, the constraint on new investment appears to have more to do with the shortage of profitable investment opportunities, than with the availability of financing.

The lack of attractive investment opportunities (which is also reflected in the foreign private disinvestment of recent years) may be in large part a result of the shifts in relative prices which have occurred over the present decade. Available evidence indicated that although real wages, which rose rapidly in the late 1970's and were comparatively high for the Caribbean even in the 1980's, have since grown approximately in line with labor productivity since 1980. At the same time, however, the real effective exchange rate appreciated substantially, in response to both the rising United States dollar (to which the Barbados dollar is fixed at 2:1) and the devaluations of Barbados' major Caribbean trading partners. The combination of relatively high domestic labor costs and cheaper foreign exchange made importing more attractive (and less risky) than local production for the small domestic market, and reduced the country's competitiveness for exports of goods and services.

Even those offshore information-processing and higher -skilled manufacturing operations in which Barbados enjoyed a comparative advantage due to its language, high literacy rate and social and economic stability have begun to relocate in other islands as the operating cost differentials have widened. To date, the authorities have been unwilling to adopt an active exchange rate policy due to the high import dependence of the economy (42 + percent of GDP in 1990). In its place, within the framework of a recently negotiated package with the IMF, the authorities have imposed on the society at large a major reduction in real income levels and removed concessions on raw materials imported in order to regain international competitiveness. However, with unemployment apparently rising above the 17 - 18 percent range (and much higher among the female labour force), the political, social and economic cost of this IMF programme appear to be mounting rapidly.

Another area of concern involves the shift over time in the tax burden from direct to indirect taxes. During 1976-80, direct and indirect taxes provided the equivalent of 11.4 and 10.2 percent of GDP, respectively. In 1987-88 the comparable figures were 6.8 and 14.4 percent. Apart from the unfavourable impact on income distribution due to the normally regressive nature of indirect taxation, such a shift reduces the counter-cyclical effect of fiscal policy while it increased the Government's dependence on growing levels of domestic consumption expenditure. The experience of the Government since 1986 seems to indicate that the increased



reliance on indirect taxes resulting from their tax relief programmes has resulted in the overall decline in Government revenues from almost 26% of GDP in 1985 to 24% in 1987, with a recovery in 1988 to 1990 period due to an increase in direct taxes, and thus contributed to the decline in Government savings. Increased use of indirect taxes also tends to put pressure on real wage rates and other business operating costs, which in turn further discourage new investment, especially in labor-intensive activities.

3.2 Main Characteristics and Evolution of the Economy

3.2.1 Sectoral Distribution

Since the attainment of self-government in 1961 and independence in 1966, government policies have attempted to foster economic diversification. Comparative growth rates and underlying sectoral performance define two periods of rapid growth followed by relative stagnation since 1960. Rapid growth occurred in 1965-70, when agricultural output subsided as manufacturing grew, while services increased their dominance, thanks to the emergence of tourism as a leading sector; and from 1976-80, a period of export diversification and rapid tourism growth, with manufacturing and tourism completely displacing sugar as the major sources of income and foreign exchange earnings. At present, tourism and manufacturing remain the key economic activities generating some 70 percent of foreign exchange earnings, contributing approximately one-quarter of GDP and providing jobs to more than one-third of the employed labour force (including employment in tourism-related activities).

TABLE 3.1
SELECTED ECONOMIC INDICATORS
(ANNUAL PERCENTAGE)

	Average 1976-80	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Real GDP (at factor cost)	5.0	(1.9)	(4.9)	0.4	3.6	1.0	5.1	2.6	3.5	3.6	(3.5)
Employment 4th Quarter	3.9	0.8	(3.1)	(3.1)	(2.9)	1.6	3.3	2.6	2.0	2.7	2.5
Sectoral Output											
Agriculture	3.9	(17.2)	(2.5)	3.9	9.4	(0.5)	4.5	(11.2)	(6.9)	(10.0)	10.3
Manufacturing	7.5	7.5	(5.4)	2.5	1.8	(9.5)	4.6	(6.6)	(6.7)	5.4	3.0
Tourist Arrivals	10.9	(4.7)	(13.8)	8.1	12.0	(2.0)	3.5	14.7	7.0	8.8	(0.6)
Labour Force (000)	106.8	112.2	112.7	112.6	112.3	113.3	116.9	121.2	123.8	124.5	125.2
Unemployment rate (%)	13.6	10.8	13.8	15.0	17.1	18.7	18.0	17.9	17.5	15.6	17.9



During 1976-80, real growth of GDP exceeded 5 percent per annum due to expanding manufacturing output and increasing tourist arrivals, while agricultural growth averaged close to 4 percent. The rapid growth of tourism and labor-intensive industrialization and, to a lesser degree, expansion of Government employment over this period was reflected in a steady decline in the unemployment rate, which fell from a peak 22 percent in 1975 to 11 percent in 1980. The balance of payments recorded a modest accumulation of international reserves as a result of increasing capital inflows and a sharp reduction of the current account deficit from 8 percent of GDP in 1976 to 1.3 percent in 1980, while the export boom made the economy even more open to external trade, as exports rose from 50 percent of GDP in 1975-77 to 70 percent in 1979-80. The financial position of the Central Government over this period reflected the Government's successful measures to restore fiscal equilibrium following an overall deficit of 8 percent of GDP in 1977.

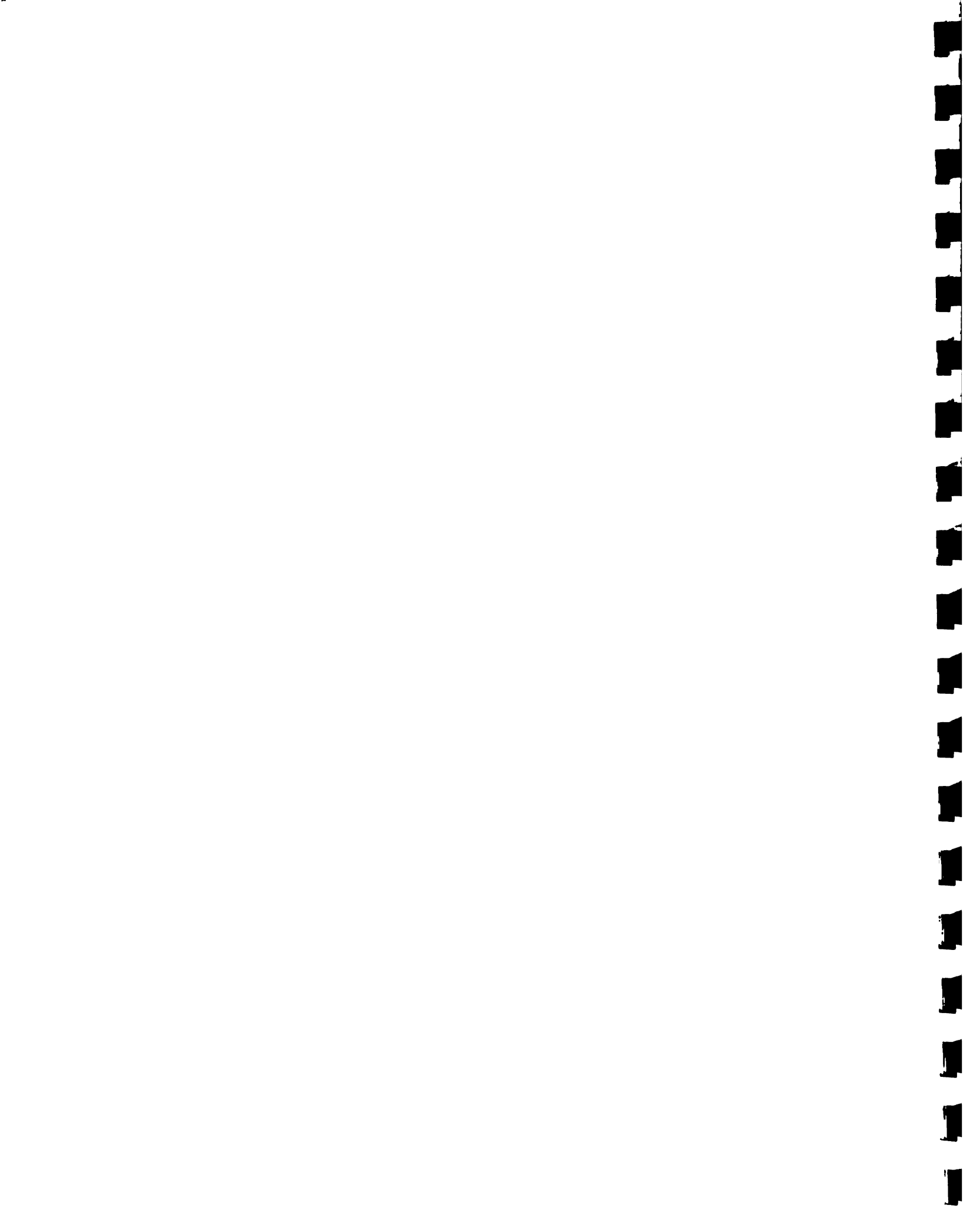
With the international recession in 1981-82, Barbados' economic performance suffered a reversal. Real GDP declined an average of 3.5 percent in both years as a result of a sharp fall in tourism arrivals and the steep decline in world sugar prices, while the disruption of the CARICOM market resulting from the Jamaican devaluation and the Trinidad and Tobago trade restrictions had a severe impact on manufacturing and employment. At the same time, the sharp expansion in public investment in 1981 produced a rapid deterioration of the fiscal situation. The Government implemented a successful two year adjustment program with the support of an IMF stand-by agreement ending in 1984.

Although the decline in real GDP was arrested in 1983, the subsequent recovery has been slow and erratic, with growth (at factor cost) ranging from 0.4 percent in 1983 to 5.1 percent in 1986, when the economy finally surpassed the level achieved in 1980. This performance also has been characterised by a marked decline in gross investment, increasing unemployment and a loss of international competitiveness in manufacturing and tourism. The year 1990 was a disastrous one for Barbados when the country recorded a negative growth rate of 3.5%.

3.2.2 Sectoral Summary

(a) Social Sectors

Barbados' social indicators reflect the country's status among the relatively more advanced developing countries. Literacy is high, officially 99 percent, education through the tertiary level is free and universal, birth and mortality rates are low, longevity has been increasing, the population is stable in size but aging in structure. Morbidity problems increasingly manifest themselves in the chronic diseases of modern society rather than the infectious diseases of more



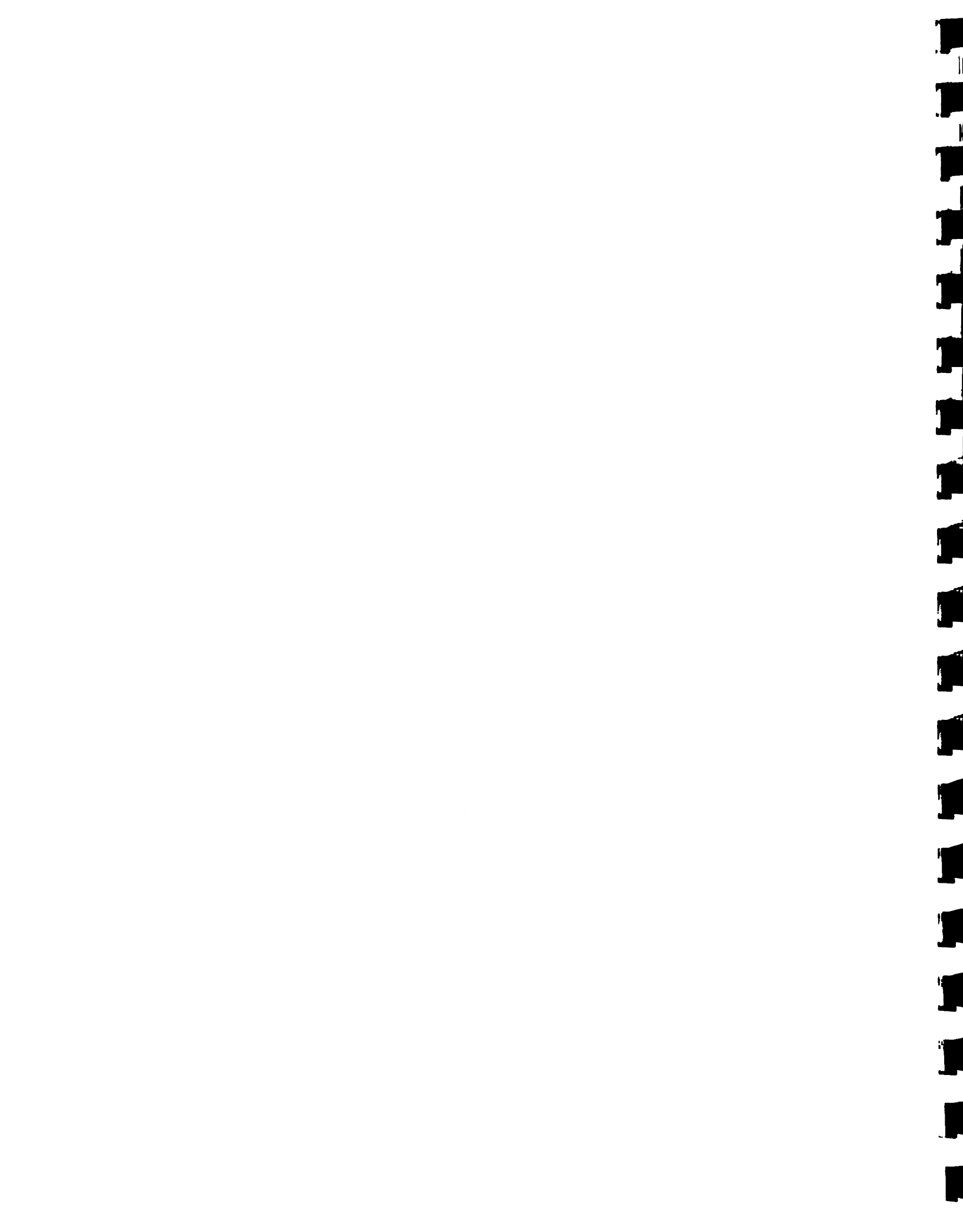
traditional societies. (Mortality rates due to cancer, diabetes, heart disease and traffic accidents are among the highest in the Commonwealth Caribbean). Household access to electric, water and sewerage service is prevalent if not universal, and curative health care is of high quality and available regardless of income level.

At the same time, however, the society has not fulfilled the expectations it has engendered; in recent years it has been unable to provide productive employment opportunities to more than one-sixth of its labor force, especially to its young and female workers. (More than half the unemployed are between 16 and 24 years old, and the unemployment rate among women is twice that of men for each age group). The high rates of female unemployment are of particular concern in Barbados, where close to half of all households are female-headed. The problem has been exacerbated by the recent loss of several major export assembly operations, which are major employers of female workers.

While unemployment remains high, the aging population also puts growing strains on the country's resources and its social infrastructure, with steadily rising dependency ratios anticipated well into the next century. The health sector, which already absorbs nearly a fifth of the Government's current spending, stressed tertiary or hospital-intensive care, but the prevalent nutrition-related diseases require more emphasis on an expanded preventive approach through the primary care system of local polyclinics. At the same time, the growing demands of the aging require the development of more cost-effective, community-centered care alternatives.

The public educational system currently lacks sufficient secondary positions and must selectively admit students to the 22 secondary schools whose expenditure per student and pupil/teacher ratios differ considerably, and generally favor the traditional, elite schools oriented to the academic and pre-professional curricula, rather than the newer comprehensive high school which also cater to the vocational and technical students which the economy requires. The heavy emphasis on pre-professional studies has left the mass of students with inadequate technical and vocational skills, while the disdain for blue collar work among high school graduates spells a continuing labor unemployment among the youth. Despite some weaknesses, the education sector also has the potential to expand its role as services export sector through training of personnel from other developing countries.

Ironically, the very success of Barbados in achieving a high and sustained living standard threatens the ecological foundation of the island. The transformation of sugar plantations into modern agricultural farms and the elevated



levels of water consumption and waste production associated with the modern living style, threaten the fragile barrier coral reef which protects the island. The polluted runoff from the land, soil erosion from unprotected cultivation and open construction, non-biodegradable phosphates from home detergents and sewage effluent from the hotels on the south and west coast all wash into the sea, fertilize the sea algae which cloud the pure waters and smother the living coral. Two decades of progress on the land have destroyed centuries of coral growth. And with the death and disintegration of the reef, fish and sea life are also disappearing. On the south coast, most of the reefs are now dead. On the west coast, boulder reefs are constructed to impede the destruction of the sand beaches which, unprotected, wash away at the rate of one foot per year.

(b) Tourism

Since the late 1950's when the Government began to actively promote tourism and the private sector began to organize itself, tourism has grown rapidly (from 18,000 visitors in 1956 to 370,000 in 1980) to become the country's largest source of employment and foreign exchange earnings. Despite a long period of stagnation in tourist arrivals from 1980 to 1986, by 1990 tourism accounted for over 50 percent of total earnings from exports of goods and non-factor services, close to 10 percent of GDP, and an estimated 15 percent of total employment, including both direct and indirect job creation. The hotel sector alone also provides close to 10 percent of the Government's current revenues, which does not include tax revenue from the many other tourist-related activities.

However, a boom in tourist arrivals in the late 1970's stimulated a 40 percent increase in the country's lodging capacity in the expectation of continued growth. This was followed by several years of decline and stagnation in arrivals through 1986, marginally profitable occupancy rates on average, and gradual deterioration of many properties, especially the smaller ones. At the same time, the average length of stay from Canadian and United States tourists declined, so that despite the record numbers of arrivals in 1987, total tourist nights were some 25 percent below their 1980 level and average occupancy rates for the year only reached 57 percent, among the lowest in the Caribbean. Despite a 24 percent increase in tourist arrivals between 1988 and 1990, average length of stay stagnated at 6.8 days and hotel room occupancy rate remain low (average 62% for the period).

Despite the obvious importance of tourism to the economy, Barbados appears to lack a clear definition of the sector's role in country's development, and a set of explicit and



consistent policies to guide the sector's development. Coordination with the private sector needs improvement; for example, the impact of policies which affect tourism should be weighed and consulted with the private sector before implementation. The principal deterrents to tourism growth and investment appear to be the high and increasing level of operating costs, particularly labour costs and indirect taxes, and the unpredictable manner in which investment incentives are granted. Reduction of real wage costs, improvement of financial and operating management of hotel properties, especially the smaller ones, and strengthening of the marketing programme of the Tourist Board, also focused on the small and medium hotels, appear to be the key requirements for renewed tourism growth.

(c) Manufacturing

Given Barbados' limited natural resources, the small size of its domestic market, and the relative abundance of labour, the prospects for development of manufacturing industry largely depend on its performance in the export of labour-intensive products. For this reason, current problems of industry arising mainly from troubles in its export markets are especially worrisome.

In 1989, industry employed 12,500 workers, which represented 12.5 percent of total employment, and generated 6.9 percent of GDP. Barbadian industry comprises two distinct groups of enterprises; locally-owned firms produce light manufactures for the domestic and CARICOM markets, while foreign-owned firms engage in assembly-type operations, especially in electronic and apparel, mainly for the North American market. In the early 1980's, about two-thirds of manufacturing sales went to the domestic market, one-ninth to CARICOM and the remaining two-ninths to extra-regional markets, mainly the United States. But manufacturing exports began declining sharply from a peak of \$255 million in 1984 to only \$73 million in 1987.

Smallness dictates specialisation. In the 1980's, export industries have concentrated on a few products. This, of course, makes the economy very vulnerable to external shocks and requires that the economy authorities be alert to rapidly adopt the appropriate policy response. Since 1983, export to CARICOM began to suffer from troubles in its main trading partners, Jamaica and Trinidad. Since 1985, four major foreign firms that experienced a decline in their United States market pulled out of the country. As a result, the average annual rate of growth of industry has been negative between 1980 and 1990 (-0.33).



Despite the changing external environment, policy makers have failed to adopt adequate corrective measures. Rising wages and domestic prices, especially from 1980, have brought about a substantial real appreciation of the Barbadian dollar through the 1980's, which damaged the competitiveness of Barbadian industry, especially vis-a-vis substantial devaluation in its Caribbean and central American neighbours, which strongly compete with Barbados for tourism, export outlets and foreign investments.

In order to keep growth prospects favourable, Barbados' economy has to remain open. One noteworthy result of the real appreciation of the Barbados dollar and the loss of foreign markets and investments is that the Barbadian economy has become more closed. The share of the tradeable sectors (agriculture, manufacturing, and tourism) in GDP decreased from 34 percent in 1980 to 30 percent in 1990. Those industrial sectors that experienced some growth recently have responded to the rise of domestic demand, stimulated by the tax concessions of 1986. But the fall of exports has left a large percent of domestic firms in financial trouble, with loan repayments in arrears, and the electronic components assembly subsector has been practically eliminated.

Current prospects for manufacturing growth are gloomy. Industrial employment has been falling. Little investment has taken place, and that is primarily for expansion of existing operations geared to the domestic market. If the country is to achieve industrial growth similar to that of the 1970's, domestic firms must be able to exploit world markets and foreign firms have to be provided with incentives to come to the country. A more active exchange-rate policy would help both purposes.

"Offshore businesses" are service industries which have been setting up operation in the Caribbean to take advantage of the United States and Canadian tax exemptions. In Barbados, such industries include data processing, exempt insurance companies, offshore banks, foreign sales corporations and international business companies. Among all these only data processing is an important source of employment. But Barbados is losing competitiveness in this labour-intensive industry, too.

(d) Agriculture

Agriculture, historically the key sector in the Barbadian economy has declined in importance since the early 1960's, with the decline of the sugar industry and the growth of tourism and manufacturing. The sector has also become a drain on the nation's foreign exchange, as agricultural imports exceed exports by an increasing margin. The farm sector is



characterised by a small number of relatively large "plantations", traditionally devoted to sugar cane, and a large number of small farms, often no more than backyard plots, engaged mainly in cultivation of root crops and vegetables and animal husbandry.

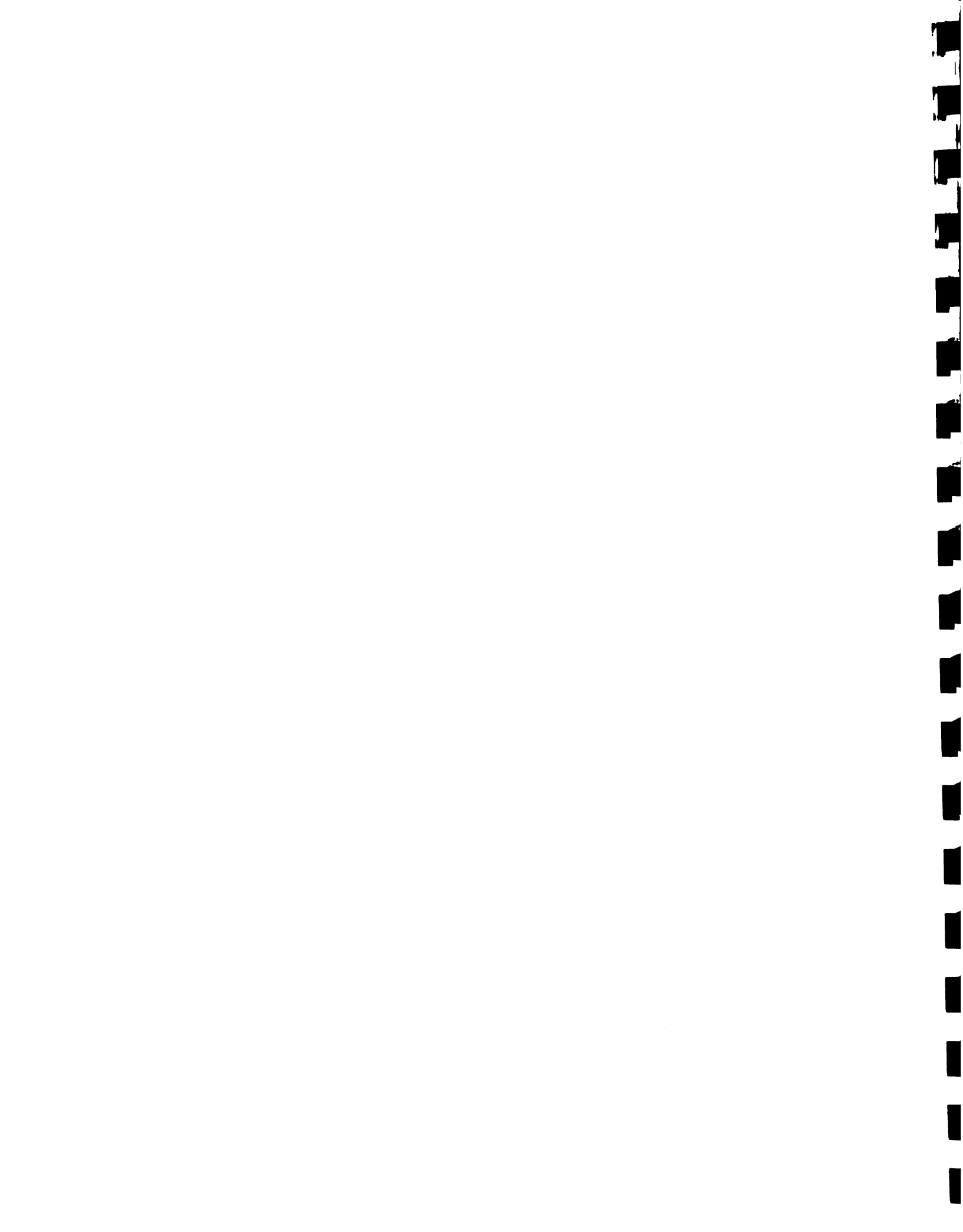
The performance of the sector between 1982 and 1990 has been generally poor, registering an average annual rate of 0.1 percent decline, albeit with wide fluctuations, mainly as a result of a continuous decline in sugar from about two-thirds of sector product in the mid-1970's, to just over 40 percent in 1987 and finally to 34% in 1989. There has been some revival of cotton cultivation. Agricultural exports, however, are still small and dominated by sugar while imports of food remain substantial.

The decline of the sugar industry in the 1970's was due mainly to rising labour costs, low labour productivity and a drastic fall in its quotas in the preferential European markets, while in the first half of the 1980's, the rate of the United States dollar against European currencies reduced export earnings in terms of local currency. After 1985, currency movements reversed themselves, but even under current conditions, sugar exports, at best, was marginally profitable, so that many factories have had to close and a considerable number of plantations were practically bankrupt.

Under these circumstances the government adopted a policy of limiting output to the level that can be sold in preferential markets plus domestic consumption. Even at that level the viability of sugar would depend on the solutions found for the two basic problems of high production costs and the financial insolvency of many firms. For the first problem the preferred solution is mechanisation. No clear solution exists for the financial problems of sugar firms.

The poor outlook for sugar has led the authorities to give priority to development of the non-sugar subsector. However, these activities are constrained by: (a) the limited availability of technical and financial resources for basic services to the non-sugar sector and the technical difficulties inherent in changing from relatively simple sugar cane farming to more technologically complex activities, in the context of an educational system that does not encourage agriculture-related pursuits; (b) the lack of incentives to diversify output, including strong disincentives resulting from an overvalued exchange rate; and (c) the negative impact of many diversification alternative on natural resources and the environment.

Agricultural development, particularly non-sugar activities, has placed stress on natural resources and contributed to

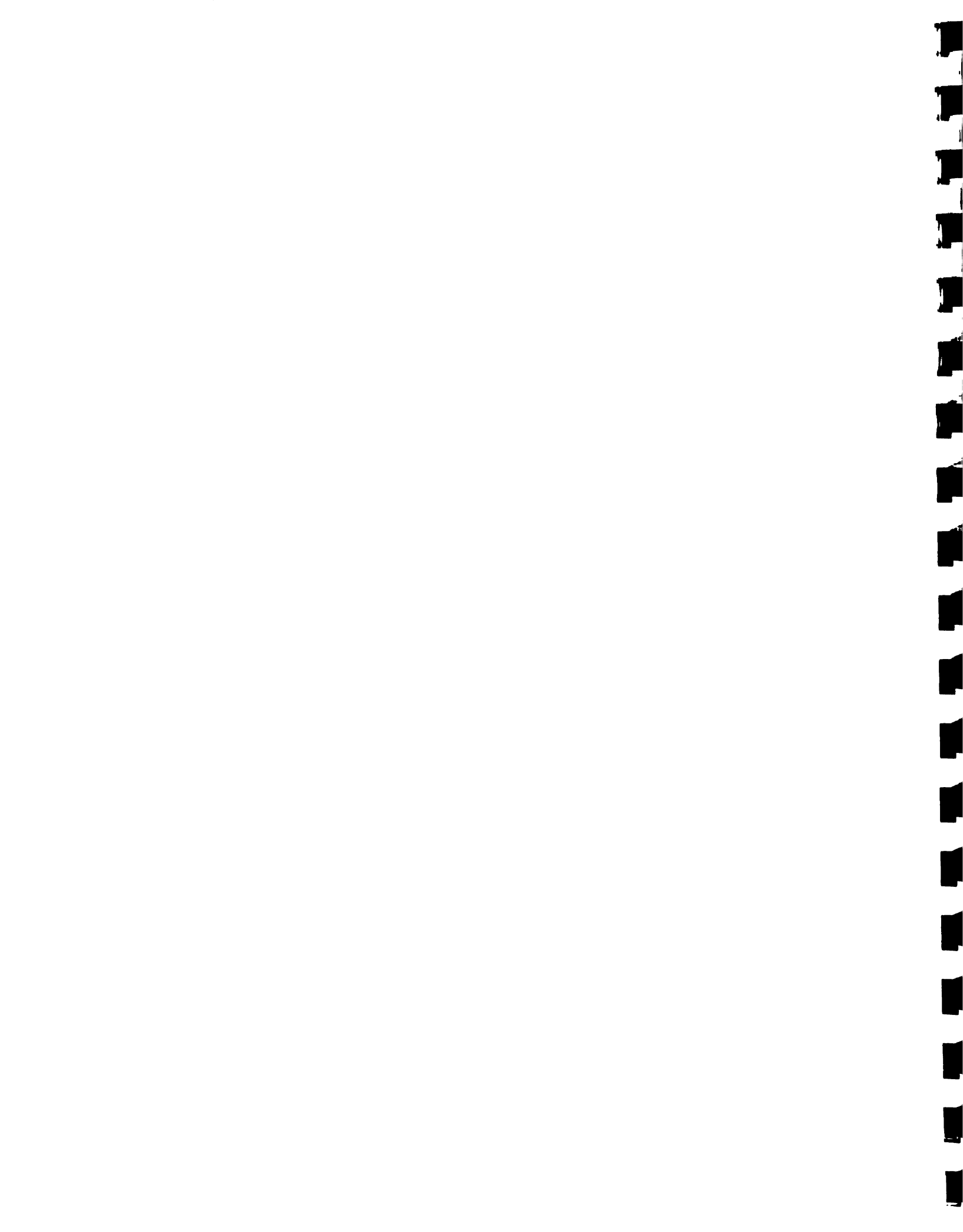


environmental problems. The chief problem for agriculture itself is soil erosion, which, though moderate by world standards, is serious because of the shallowness thinness of the island's top soil. Moreover, pesticides and other agricultural chemical threaten ground water supplies and surface water runoff into the ocean, which contributes to the destruction of the coral reefs that protect the sandy beaches.

Certain characteristics and problems of the basic services to agriculture in Barbados are relevant to a strategy for promoting the non-sugar subsector. The chief problem with respect to research and extension services is the lack of sufficient financial resources and trained manpower. Domestic marketing of food is done mostly by small-scale intermediaries and shows high levels of spoilage because of a lack of adequate storage and handling facilities, which also result in unreliable timing of deliveries. Efforts to find foreign markets for non-sugar products have been very limited. Although the island's water resources for irrigation appear adequate for self-sufficiency in vegetables, the investment cost would be high and significant technical assistance to the farmers would be required.

Despite its decline over the past two decades, the agricultural sector can play an important role as a source of employment and foreign exchange generation, via substitution of imported agricultural and processed food for domestic and tourist consumption, provision of inputs for agro-industrial processing, and some additional exports. However, in order to achieve its goals, the government will need to formulate a comprehensive development strategy which defines the role of agriculture in the economy and establishes a plan of action for the sector. For this purpose, immediate steps should be taken to strengthen the planning and policy making functions in the Ministry of Agriculture, and to give priority to economic studies which would allow a narrowing down of the products chosen for promotion. At the same time, the government should continue to leave production and marketing activities primarily to the private sector and concentrate on a comprehensive approach to policy formulation and the provision of services. The system of incentives should target more specifically priority commodities. Of more importance, however, is to eliminate the disincentive to exports created by the overvalued exchange rates.

With regard to services, it is vital to substantially increase the flow of institutional credit to the non-sugar sector, specifically credit for investment in irrigation facilities. Agricultural diversification will also required increase in the level of public sector current and capital expenditure in agriculture, to expansion in research and extension, and the provision of some marketing services, specifically in the



areas of quality control, grading and the development of foreign markets. Early measures should be taken to prevent erosion of the top soil, including providing technical assistance to farmers on appropriate cultivation methods. At a broader level, a solution needs to be found for the problem of coastal pollution by agricultural chemicals, that does not seriously hamper the technological development of agriculture on the island.

3.3 Principal Economic Indicators

3.3.1 External Sector

(a) Balance of Payments

Barbados experienced substantial gains in the balance of payments over 1982-85, with the current account moving from US\$42 million deficit in 1982 to a \$41 million surplus in 1985, and with a similar gain in international reserves (Table 3.2). The country however experienced a slump in its balance of payments beginning in 1986 as a result of sharp reductions of manufactured exports, increasing interest payments on the external public debt and growing private capital outflows. The current account swung back into deficit in 1986 and continued through to 1990; as a result the government resorted increasingly to heavy foreign borrowing to meet amortization requirements and to maintain adequate reserves.

Table 3.2
Summary Balance of Payments 1981-1990
(US\$ Million)

ITEM	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CURRENT ACCOUNT	(125)	(42)	(51)	11	41	(16)	(54)	(2)	(3)	(38)
Trade Balance	(366)	(345)	(351)	(321)	(309)	(360)	(403)	(458)	(552)	(573)
Exports (FOB)	164	209	274	342	302	246	132	146	148	152
Imports (FOB)	530	554	625	663	611	606	535	604	700	725
Net Services	223	280	279	318	344	332	342	440	543	492
Transfers	18	23	21	15	6	12	7	16	6	43
CAPITAL ACCOUNT	121	39	52	(15)	(5)	16	92	48	5	46
Long Term	77	9	22	(18)	12	13	70	31	1	32
Public	49	12	29	6	29	54	76	43	14	12
Private	28	(3)	(7)	(24)	(17)	(41)	(6)	(12)	(13)	20
Short and Others	44	30	30	3	(17)	3	22	17	4	14
Errors and Omissions	(35)	11	6	3	9	3	(19)	(14)	(38)	(60)
Overall Balance	(39)	8	7	(1)	45	3	19	32	(36)	(52)
Other Financing	17	23	14	6	(3)	(13)	(22)	(7)	(6)	(47)
Reserve Movements (-increase/+decrease)	22	(31)	(21)	(5)	(42)	10	3	(25)	42	99



(b) Exports

After rising for several years to a peak of \$342 million in 1984, the value of merchandise exports declined at an average annual rate of 15% over 1985-86 before plummeting over 46% in 1987 to \$132 million. This performance largely reflected movements in exports of assembled electronic components to the United States market and to a lesser extent exports of clothing and other manufactures to the CARICOM market, since export earnings from sugar and its by-products remained virtually unchanged during 1981-90.

The structure of exports has changed over time as a result of world market fluctuations and Barbados' efforts to diversify its economy. The share of sugar and its by-products declined from 60 percent of merchandise exports in 1970 to merely 15 percent in 1986, but increased to 30 percent in 1987 with the fall in overall exports. At the same time, the share of electronic components increased from 10 percent in 1970 to 57 percent in 1986 and then dropped to 13 percent in 1990. These wide fluctuations are a clear indication of Barbados' vulnerability to external forces.

Export earnings from assembled electronic components rose sharply from \$32 million in 1980 to a record \$168 million in 1984. However, from 1985, these exports contracted rapidly to record only \$20 million in 1990, reflecting the closure of an international corporation in Barbados brought about by increased competition and declining demand in the international electronic market. Exports of clothing and other manufactures to the CARICOM market also fell from a record \$95 million in 1980 to \$9 million in 1990 because of declining demand in Trinidad and Tobago, Barbados' most important market in the region.

Export earnings from sugar and molasses, on the other hand, have stabilized around \$30 million. Despite depressed international prices, a record export volume in 1986 and the appreciation against the dollar of the European Currency Unit (ECU) (in which the bulk of sugar exports are priced) allowed Barbados' export earnings from sugar to increase marginally in both that year.

After levelling off over 1980-83, tourist receipts recovered gradually through 1990 so that by 1985 tourism earnings once again surpassed merchandise exports and by 1990 were approximately three times higher.

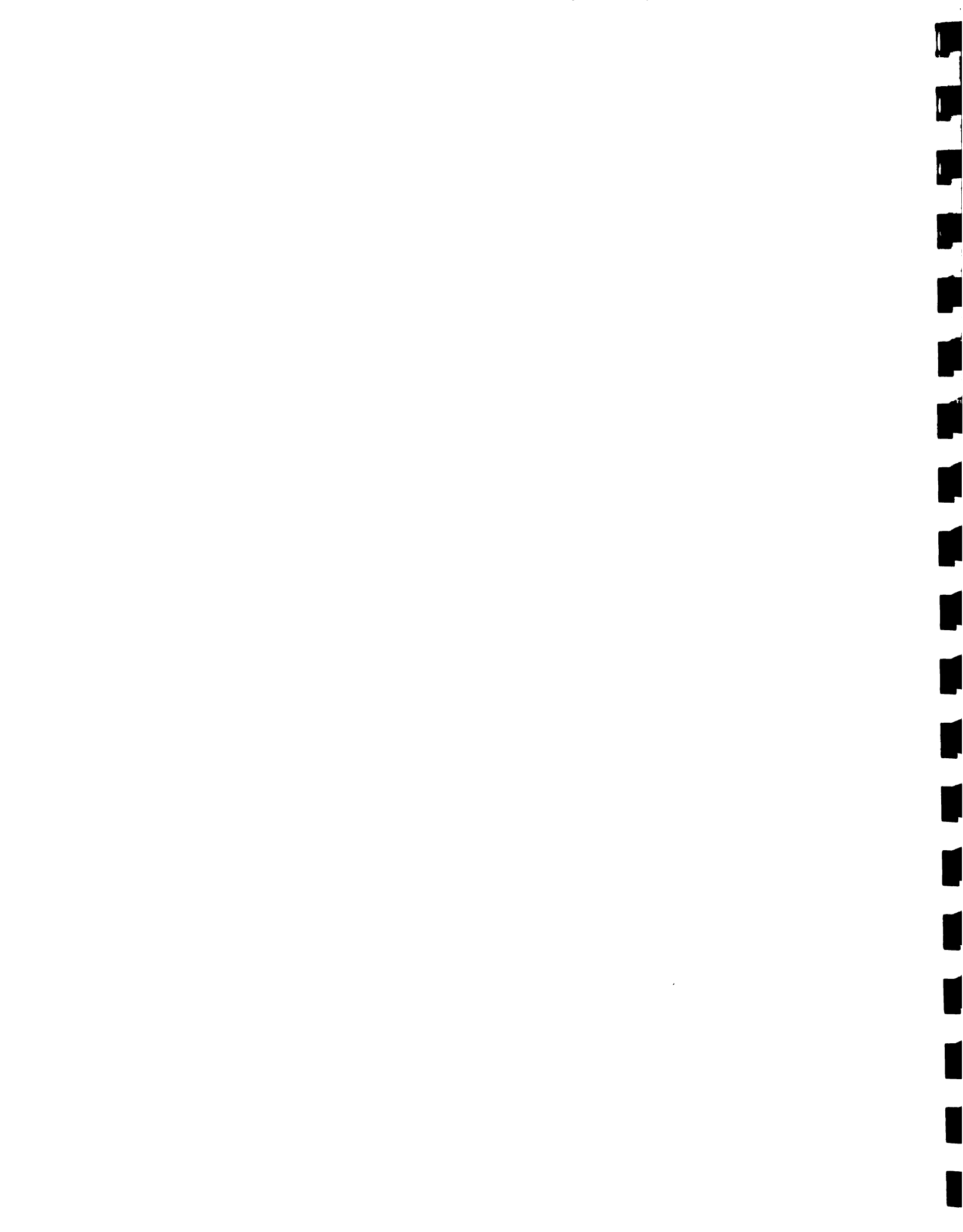


Table 3.3
Distribution of Merchandise Exports* for Selected Years
(Percentage)

	1970	1976	1986	1987	1988	1989	1990
Sugar	47.3	34.1	11.6	26.4	25.4	18.8	22.3
Molasses and Rum	13.5	10.0	3.2	5.8	6.6	5.3	7.3
Other Food and Beverages	11.0	6.4	3.6	5.0	5.5	7.0	9.5
Chemicals	3.4	4.3	4.5	10.2	11.6	13.6	16.4
Electronic Components	10.3	10.0	57.0	24.4	18.0	17.3	12.9
Clothing	6.0	22.2	8.5	11.1	12.3	11.3	6.2
Other	8.5	13.0	11.6	17.1	20.6	26.7	25.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Domestic Exports only

SOURCE: Central Bank of Barbados

(c) Imports

The value of imports rose on average 9% per year in 1983-84 but declined slowly in 1985 and 1986 at a similar rate. This was followed by a 12% drop in 1987, mainly in response to reduced imports of intermediate goods, particularly of electronic components for assembly and re-export. These declines more than offset the resurgence of consumer import demand in 1987 brought about by increased disposable income resulting from the mid-1986 fiscal reform. However, by 1988 imports returned to equivalent levels of 1986, followed by a 16% increase in 1989.

Between 1970 and 1981, the composition of merchandise imports changed substantially in response to oil prices and changes in the economic structure of Barbados. Between 1981 and 1986, electronic components dominated the import structure of Barbados. The share of intermediate goods other than fuel rose from 32% of total import value in 1981 to 45% in 1984, but then declined to 31% in 1987. These variations were mainly due to fluctuations in imports of electrical components which climbed to \$120 million and then plunged to \$10 million during the same period.

Fuel imports, on the other hand, rose to a peak of 14% of total imports in 1981 in response to international price increases, but declined sharply through 1986 to 2.4 percent, as the country augmented its domestic oil production to cover about one-half its requirements. In 1987, however, price increases together with domestic production cut-backs pushed fuel imports back to 5.7 percent of total imports. By 1990 fuel imports had climbed to 6.9% of total imports.

The share of food imports declined from 22 percent in 1976 to 14 percent in 1984, reflecting the Government's import substitution efforts, but then rose slowly to 19 percent in 1987 in line with changes in consumption patterns and rising



incomes. Imports of other consumer goods, mainly durable rose sharply in 1987 as a result of increased private disposable income.

The share of capital goods in total imports rose slightly in 1989-1990 period as imports of construction materials increased, but in general capital goods have stabilized at around 18 percent of imports with minor oscillations.

Table 3.4
Distribution of Merchandise Imports for Selected Years
(Percentage)

	1970	1981	1984	1986	1987	1988	1989	1990
Consumer Goods	44.7	35.3	31.3	35.4	42.2	40.1	38.1	37.6
Food and Beverages	21.7	17	14.3	15.2	18.8	18.2	17.4	17
Other	23	18.3	17	20.2	23.4	21.9	20.7	20.6
INTERMEDIATE GOODS	34.8	45.9	50.6	45.1	36.9	38.6	38.9	38.6
Fuel	2.6	13.6	6.1	2.4	5.7	5	5.7	6.9
Other	32.2	32.3	44.5	42.7	31.2	33	33.2	31.7
CAPITAL GOODS	17.7	18.6	17.3	18.5	18.7	18.3	20.3	21.6
UNCLASSIFIED	2.8	0.2	1.4	2.2	2.4	3	2.7	2.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Barbados Central Bank Report

(d) Capital Movements

The large net capital inflow of \$121 million in 1981 became a net outflow of \$15 million in 1984 as a result of sharp reductions in long-term capital flows associated with slow disbursement of project-relating lending and increased private capital outflows. Net public sector borrowing, however, rose rapidly over 1985-87, mainly due to Government borrowing in the Euro-dollar market to meet debt payments and maintain reserves.

The sizable long term net private capital receipts recorded in 1981 dropped sharply in 1982 to a small outflow, which grew steadily through 1986 to \$41 million, but then subsided to \$6 million in 1987. The cumulative outflow over the 1982-1989 period reached \$123 million. This overall trend reflected negligible direct foreign investment and little new borrowing at a time when earlier loans became due and the currency was becoming increasingly overvalued. A sizable long term net private capital receipts of \$20 million was recorded in 1990. Modest foreign reserve losses were registered in 1986-87 (\$13 million in total) in contrast with an average gain of \$20 million annually in the period 1982-85. However, substantial reserve losses were recorded in 1989 (\$42 million) and 1990 (\$99 million).



(e) External Debt

The steep rises in the long-term external public debt of 1985 and 1986 continued into 1990 to reach estimated \$836.0 or about 28.2% of GDP compared with 20.4% in 1985. Debt servicing similarly has increased rapidly over the last three years, due to amortization of existing debt and increasing interest payments reflecting deteriorating conditions on new lending. At the end of 1990, the ratio of debt service to merchandise and non-factor service exports reached 15.4%, or more than three times as much as in 1984.

This trend shows the Government's rapid borrowing in the foreign currency markets since 1985. In response to weakening external demand for Barbados' main export products, mounting debt obligations and a deteriorating fiscal situation, the Government commenced issuing five-year bonds in Japan and the United Kingdom for the equivalent of some \$45 million in 1985 followed by borrowings of \$67 million in 1986 and \$25 million in 1987 from European banks.

As a consequence of this sharp increase in commercial borrowing, the structure and conditions of the external public debt have deteriorated. The average maturity fell from 20 years in the period 1980-84 to an * '^U56'3ight years in 1985-86 while the average interest rate rose from 7% in 1980 to 9% in 1987.

3.3.2 The Financial System

For a small country, Barbados has a relatively well developed financial system. According to the Central Bank, the consolidated financial system comprises the Central Bank, eight commercial banks (BCCI's future uncertain), five trust companies, the Barbados Development Bank, the Barbados National Bank, the Barbados Mortgage Finance Corporation, and several finance companies. Other financial institutions include a rapidly-growing credit union and cooperative system, several insurance companies (both domestic and offshore), and a few offshore banks. In the decade ending in 1986, the total assets of these institutions increased almost four-fold (at an average annual growth rate of 14.3%), while the country's current GDP rose about three-fold (about 11.7% annually).

The most rapid growth occurred in the non-bank financial sector, whose assets grew from about one-third to almost one-half of total financial system assets. By the end of 1987, total financial systems assets (excluding the Central Bank) reached an estimated 114% of current GDP, compared to some 88% in 1976. Over the same period, the non-banking system showed relatively little real growth, with commercial bank assets going from 56 to 61% of GDP, and most of that growth occurred in 1987.

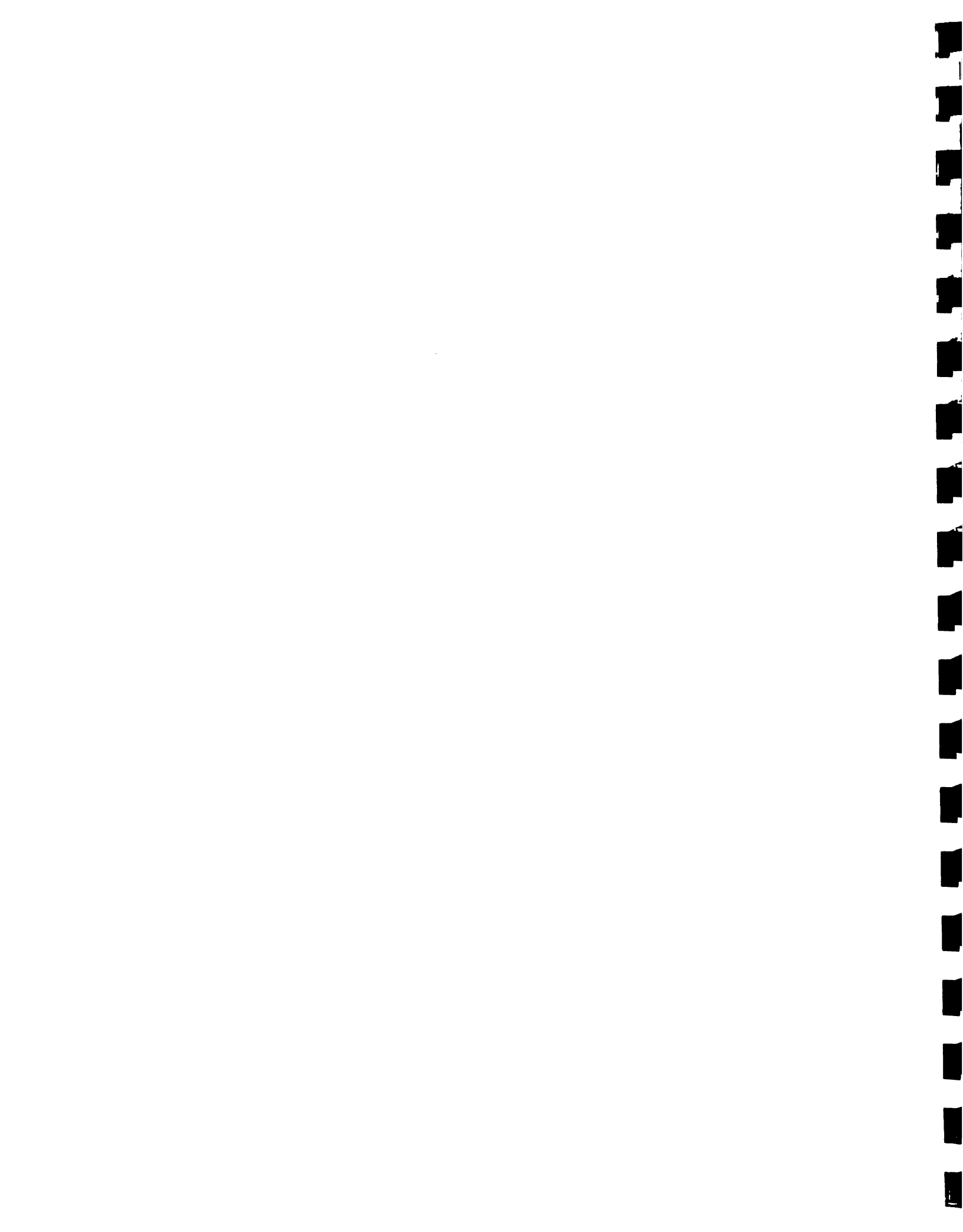


Table 3.5
Assets of Financial Institutions
(US\$ Million)

End of:	Non-Bank Assets	Bank Assets	Total	Non-Bank/Total (Percentage)	Current GDP	Total/GDP (Percentage)	Bank/GDP (Percentage)
1974	93.2	195.4	288.7	32	351.4	82	56
1975	115.3	225.4	340.7	34	406.2	84	55
1976	140.3	243.3	383.6	37	436.8	88	56
1977	185.6	269.1	454.6	41	496.8	92	54
1978	201.6	323.2	524.7	38	56.0	94	58
1979	238.9	397.7	636.6	38	674.2	94	59
1980	290.0	441.9	731.9	40	865.3	85	51
1981	337.8	505.5	843.3	40	957.3	88	53
1982	422.1	554.8	976.8	43	995.0	98	56
1983	490.6	605.6	1096.3	45	1056.3	104	57
1984	567.0	655.5	1222.3	46	1151.4	106	57
1985	619.5	705.1	1324.6	47	1205.0	110	59
1986	704.1	755.8	1459.9	48	1323.0	110	57
1987	776.0	890.6	1666.8	47	1456.8	114	61
1988	na	922.4	na	na	1548.5	na	60

* Excluding Central Bank
na. Not Available

SOURCE: Central Bank of Barbados

3.3.3 Investment and Savings

As a result of rapid economic growth, buoyant foreign demand and the availability of substantial external savings, Barbados enjoyed a relatively high level of capital formation through 1981. The investment ratio averaged 25% of GDP in 1976-81 but steadily declined thereafter to 15.4% in 1985 before recovering moderately in 1986-87 to 16 percent of GDP. Contributing to the investment decline was a rapid fall of public investment, which fell from an average ratio of 33% of total investment in 1976-82 to some 11 percent over 1982-85 before recovering to 18% in 1986-87. This decline, which resulted from a sharp fall in investment demand despite steady growth in domestic savings, was reflected in a rapid fall of external savings, which plummeted from an average of 12 percent of GDP in 1976-81 to a negative 1.5% in 1983-86 but recovered somewhat to reach 1.9% of GDP in 1987.

National savings, over the same period, rose from an average of 13.2% of GDP in 1976-81 to almost 21% in 1985, before plunging to 14% in 1987 in response to large increases in consumption expenditures resulting from tax reductions. Nonetheless, the contribution of national savings to capital formation has increased over time from an average of less than 66% in 1976-81 to 110 percent over 1983-86 before declining to 88% in 1987.

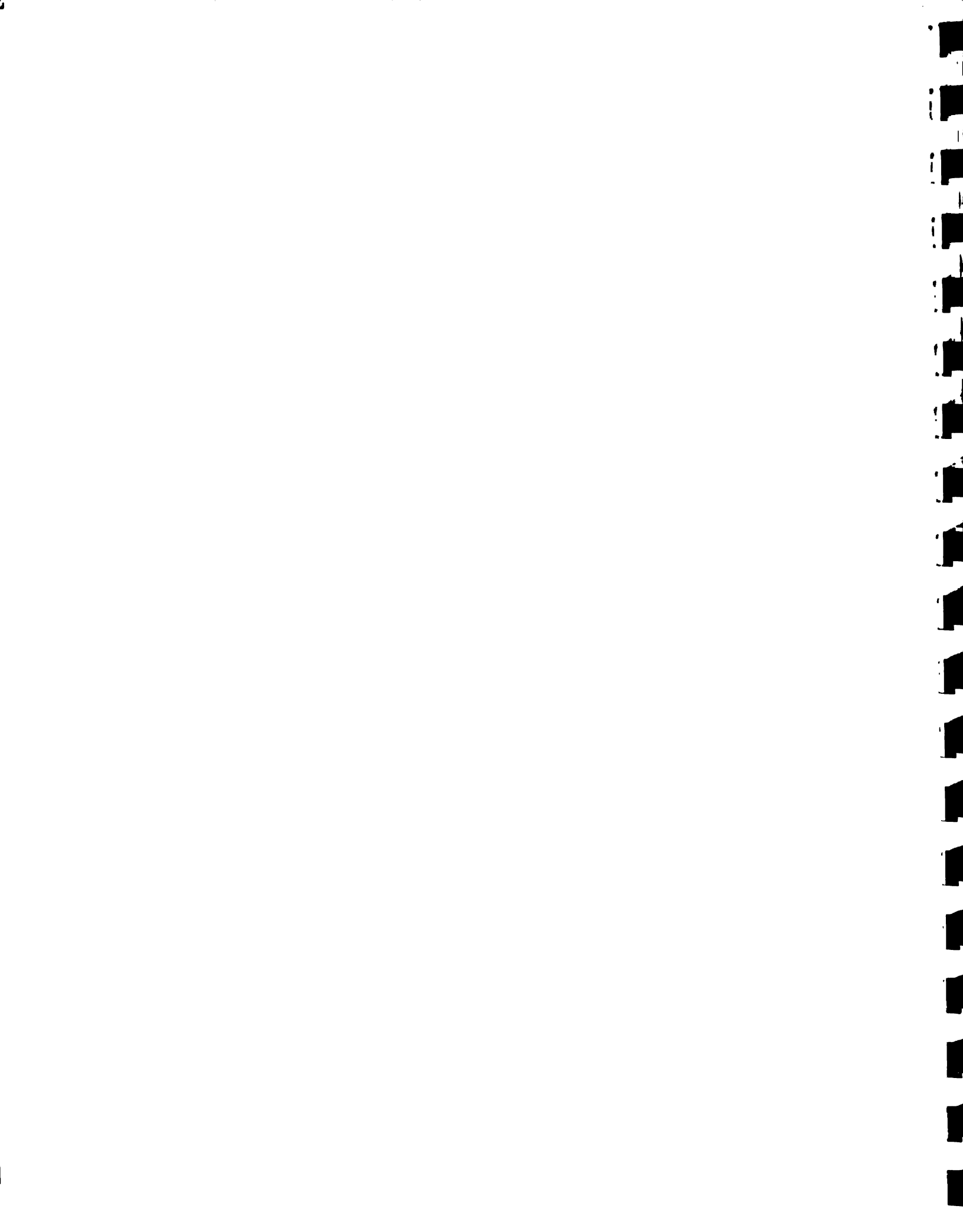


Table 3.6
Investment and Savings 1/

	Average 1976-81	1982	1983	1984	1985	1986	1987	1988
Gross Investment	24.9	22.6	19.9	16.2	15.4	16.0	16.0	17.5
National Savings	13.2	18.1	18.6	18.6	20.8	15.4	14.1	16.3
External Savings	11.7	4.5	1.3	-2.4	-5.4	0.6	1.9	1.2
Gross Investment	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Private	77.0	86.3	86.9	96.3	86.4	78.8	84.4	na
Public	33.0	13.7	13.1	3.7	13.6	21.2	15.6	na
National Savings	64.8	79.9	93.4	114.7	134.9	96.2	88.2	93.0
External Savings	46.9	20.1	6.5	-14.7	34.9	3.8	11.8	7.0

1/ Totals may not sum 100 due to rounding
n.a. Not available

3.3.4 Prices, Wages and Productivity

The impact of external forces on the development process has been accentuated since early 1980 as Barbados' international competitiveness diminished due to real effective appreciation of the currency without any significant reduction in real unit labor rose through most of the period.

Over 1980-85, the Barbados dollar (which has been pegged to the United States dollar since 1975 at BDS\$2 per US\$1) appreciated sharply in real effective terms as the United States dollar rose and Barbados' principal competitors and trading partners in the region devalued their currencies. The real effective appreciation exceeded 36 percent from 1980 through early 1985, before the Barbados dollar fell back to about 15 percent above its 1980 value by the end of 1987, mirroring primarily the decline of the United States dollar.

Because of the strength of collective bargaining in Barbados, general wage increases seem to follow changes in prices, allowing for some lags, due mainly to the prevalence of two-year wage settlements. Annual real wage increases averaged 3.2 percent during 1976-80, but declined slightly in the high inflation years of 1981-83, to recover again in 1984-87 as inflation fell sharply. In addition, non-wage labor costs also rose relatively fast because of increasing mandatory contributions of employers to the National Insurance Board.

In general, productivity (measured as real value added per worker) lagged far behind real wages over 1975-80, eroding Barbados' international competitiveness. This was followed over 1980-87 by the real effective appreciation of the currency noted above which further increased domestic input costs (notably labor) relative to output value for tradeables (Table 3.7). This apparently acted as a deterrent to foreign as well as domestic



investment in Barbados and contributed to the drop in gross capital information of recent years.

Table 3.7
Price, Wages and Productivity
(Annual Percentage Change)

	Average	
	1976-80	1981-87
Real GDP (At Factor Cost)	5.0	0.7
Employment	3.9	-0.1
Output Per Worker	1.1	0.9
Nominal Wages	13.5	7.1
CPI (Annual Average)	10.0	6.1
Real Wages	3.2	0.9
Real Effective Exchange Rate (Year-End)	-0.1	1.7

SOURCE: Central Bank of Barbados, Barbados Statistical Service, and IMF

3.3.5 Public Finance

The public sector in Barbados includes the general government and some ten non-financial public enterprises. The general government comprises the Central Government, the single most important entity of the public sector with some four-fifths of total public sector revenue and expenditure; the National Insurance Fund, the major source of public savings; and some small special funds, earmarked for sugar research and development. Among the non-financial public enterprises, the most important, in terms of sales and employment, are the Transport Board, the Barbados National Oil Company, the Water Authority and the Port Authority. In general, the current operations of the non-financial enterprises have been balanced in recent years, with the exception of the Transport Board and some smaller public entities which rely on the Central Government to fund both current and capital expenditure.

The overall position of the consolidated public sector account has deteriorated since 1983 as a result of increasing current outlays, while public sector revenue declined. The overall deficit of the consolidated public sector account rose gradually from an average 3% of GDP in 1983-84 to an average 5% of GDP in 1986-90. Following the successful implementation of a stabilization program in 1982-83, the financial position of the Central Government deteriorated in 1984. A current account surplus of 2.7% of gross domestic product in 1983 steadily eroded and gave way to a marginal deficit in 1987. The overall deficit of the Central Government, which was reduced from 9.5 to 3.0% of GDP between 1981 and 1983, widened again to 5.2% of GDP in 1985 and to an average of 5.9% of GDP in 1986-87, before falling back to 1.3% in 1989. The deterioration in 1986-87 was the result of lower revenue collections, continued high levels of current expenditures and increased levels of government investment. Foreign funds financing



became increasingly important in the financing of the deficit, providing an average of almost 4.5% of GDP over 1986-87.

The overall deficit of 7.2 percent of GDP recorded in 1990 was financed from domestic borrowing, mainly from the Central Bank.

Table 3.8
Summary of the Operations of the Central Government
(as percentage of GDP)

ITEM	Average 1975-80	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Current Revenue	24.1	23.5	24.4	24.7	24.4	25.8	24.9	24.0	25.9	29.3	27.2
Current Expenditure	22.3	23.2	23.2	22.0	23.1	25.3	24.3	24.1	24.0	24.8	27.4
Current Surplus	1.8	0.3	1.2	2.7	1.2	0.5	0.6	(0.0)	2.0	5.8	(2.0)
Capital Expenditure	6.4	9.8	6.2	5.4	5.3	5.7	6.7	6.2	5.7	5.8	7.0
Overall Financing	(4.6)	(9.5)	(5.1)	(2.8)	(4.1)	(5.2)	(6.1)	(6.3)	(3.6)	(1.3)	(7.2)
Domestic Financing	0.7	3.8	2.9	1.6	2.5	0.2	1.2	2.9	0.5	0.4	7.5
Foreign Financing	3.9	5.7	1.3	2.7	0.7	3.2	4.1	4.8	2.5	0.8	(0.2)

(a) Revenues

Current revenue rose steadily over 1981-83, mainly due to the measures introduced as part of the stabilization program with the IMF in 1981. In 1986-87, however, income tax revenue declined as a result of cuts introduced by the Government to reactivate the economy.

Since the late 1976's the Government has been shifting gradually from direct to indirect taxation, with the purpose of improving the financial position of the public sector, but also to ease the personal tax burden. In 1983 the Government introduced some changes in the tax structure including increases in the consumption tax and the stamp duty on imports, in addition to the payroll tax and a 3 percent surcharge on corporate taxes. These measures increased current revenue to 25.8% of GDP in 1985, but in 1986, revenue declined to 24.9% due to further direct tax concession.

In July 1986, in the light of high unemployment levels and weak demand, the newly-elected Government reduced personal income tax rates and increased personal allowances and exemptions aimed at stimulating domestic demand through higher disposable income. To stimulate investment, the Government reduced the corporate tax rate from 45% to 35%. During 1987, to compensate for the larger-than-anticipated revenue losses, the government imposed increases in consumption taxes, travel tax and certain license fees, increases in the rates of some levies and limitations in various tax deductions.



Nevertheless, the ratio of current revenue to GDP further declined to 24%. Further increases in indirect taxes and a temporary income tax surcharge were introduced in April 1988 which resulted in a recovery in 1988 current revenues to their 1985 level. This recovery continued into the 1989-90 period where current revenue as a percentage of GDP averaged over 28%.

There have also been marked changes in the tax structure resulting from the tax reforms enacted over 1983-87. Direct taxation, which contributed more than 50% of tax revenue over 1975-82, declined steadily from 42% in 1982 to 28% by 1987 (Table 3.9). Moreover, as a result of the tax reforms of 1986, revenue from personal income taxes fell 35% in that year with a further decline of 15% in 1987, while the revenue from corporate taxes dropped 32% in 1986 and an estimated 9% in 1987.

In view of the normally regressive impact of indirect taxation, and the high and rising levels of unemployment, these trends suggest the possibility of some deterioration in income distribution.

Table 3.9
Selected Tax Indicators
(Percentage)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Current Revenue	100	100	100	100	100	100	100	100	100	100
Tax Revenue	88.2	88.5	87.8	87.4	91.5	88.2	85.1	84.3	92.1	93.6
Direct Taxes*	46	52.2	46.7	43.4	42.5	35.6	27.9	32.9	32.8	33.6
Indirect Taxes*	54	47.8	53.3	56.6	57.5	64.4	72.1	67.1	67.2	66.4
Non-Tax Revenue	11.8	11.5	12.2	12.6	8.5	11.8	14.9	15.7	7.9	6.4

* As a percentage of Tax Revenue

(b) Expenditure

Total expenditure stabilized at about 30% of GDP between 1985-1989 but increased to 34.4% of GDP in 1990. In general, increases in current expenditures have been offset by reduction in capital outlays and vice versa. As a percentage of GDP, current expenditure expanded moderately from an average 23% in 1981-83 to 24.5% in 1985-89. This performance is associated with increased in wages and salaries, whose share in current expenditure has been about 45% in recent years. Interest payments with respect to current expenditure rose from an average of 11% in 1980-85 to 13% in 1987. Among the sectors, education continues to absorb the largest share of current outlays followed by health and general public services.



Following a steady decline from 1981 to 1984, capital outlays rose again to an average 6.2 percent of GDP in 1985-90. This trend largely reflects the execution of major investment projects which were financed for the most part with foreign funds. During 1986-87 construction and transportation was the most important investments, followed by investment in health and in agriculture.

(c) Financing

Over the period 1985-88 the Central Government financed its deficit with foreign sources in contrast with the period 1982-84, when the surpluses in the National Insurance (NIF) were the single most important source of financing. Since 1985, however, the NIF contribution declined steadily reflecting increasing benefit disbursements, while commercial borrowing and treasury bond issues in international markets expanded in an effort to bolster the country's foreign reserves. Another important source of foreign financing in 1985-88 was increasing project-related lending by the multilateral financial agencies.

In 1989-90 period the Central government financed its deficit mainly from domestic sources, with Central Bank borrowing a major source.

3.4 National Development Strategy of Barbados

3.4.1 Objectives

The principal objective of the development strategy of Barbados is to create conditions for sustained economic growth in the medium and long-term. The strategy takes account of the current situation of the economy, the domestic and external factors which gave rise to that situation and the anticipated changes that are likely to influence the country in the medium and long-run. The government also expects to address several of the economic and social problems which now exists and which could dampened real growth and development. Some of the important factors include:

- elimination of fiscal deficit on current account;
- maintenance of adequate foreign exchange reserves;
- recovery and substainance of export competitiveness within the leading productive sectors;
- developing and fostering of inter-sectoral linkages;
- improving social infrastructure (e.g. education, health);



- development and maintenance of an adequate supply of technical and management skills in both the public and private sectors, and
- elimination of barriers to free trade.

3.4.2 Strategy

(a) Medium Term

The medium-term strategy revolves around the Development Plan for the period 1988 to 1993. The major aims of this plan are to put the economy on a path of stable growth and to provide increased employment opportunities. A number of economic measures are being implemented to achieve these objectives. These include:

- commitment to a fixed exchange rate regime;
- efficient management of the money supply, interest rates and government borrowing from the Central Bank;
- fiscal discipline with the aim of reducing the overall budget deficit from 7.6% of GDP in 1987 to approximately 2% by 1993;
- reform of the tax system, and
- pursuit of "sensible" wage policies.

With respect to trade policy, the strategy seeks to improve the competitiveness of exports in both regional and extra-regional markets. Judicious use of capital markets to borrow, and restructuring and/or elimination of existing debts, as well as improved coordination of public sector borrowing, spending and taxation are the tenets on which the financial policy is based.

(b) Long Term

The long term strategy seeks to:

- create conditions for sustained economic growth and high levels of employment by maintaining a stable economic environment;
- maintain levels of output to meet the population's basic needs;
- strengthen linkages between agriculture, manufacturing, tourism and the service sector;



- generate increased foreign exchange earnings from a more diversified mix of economic activities which include new manufacturing and non-traditional products;
- reorient and reform educational institutions to ensure availability of adequate human skills and technological development;
- secure a more equitable distribution of income.

The government also expects to:

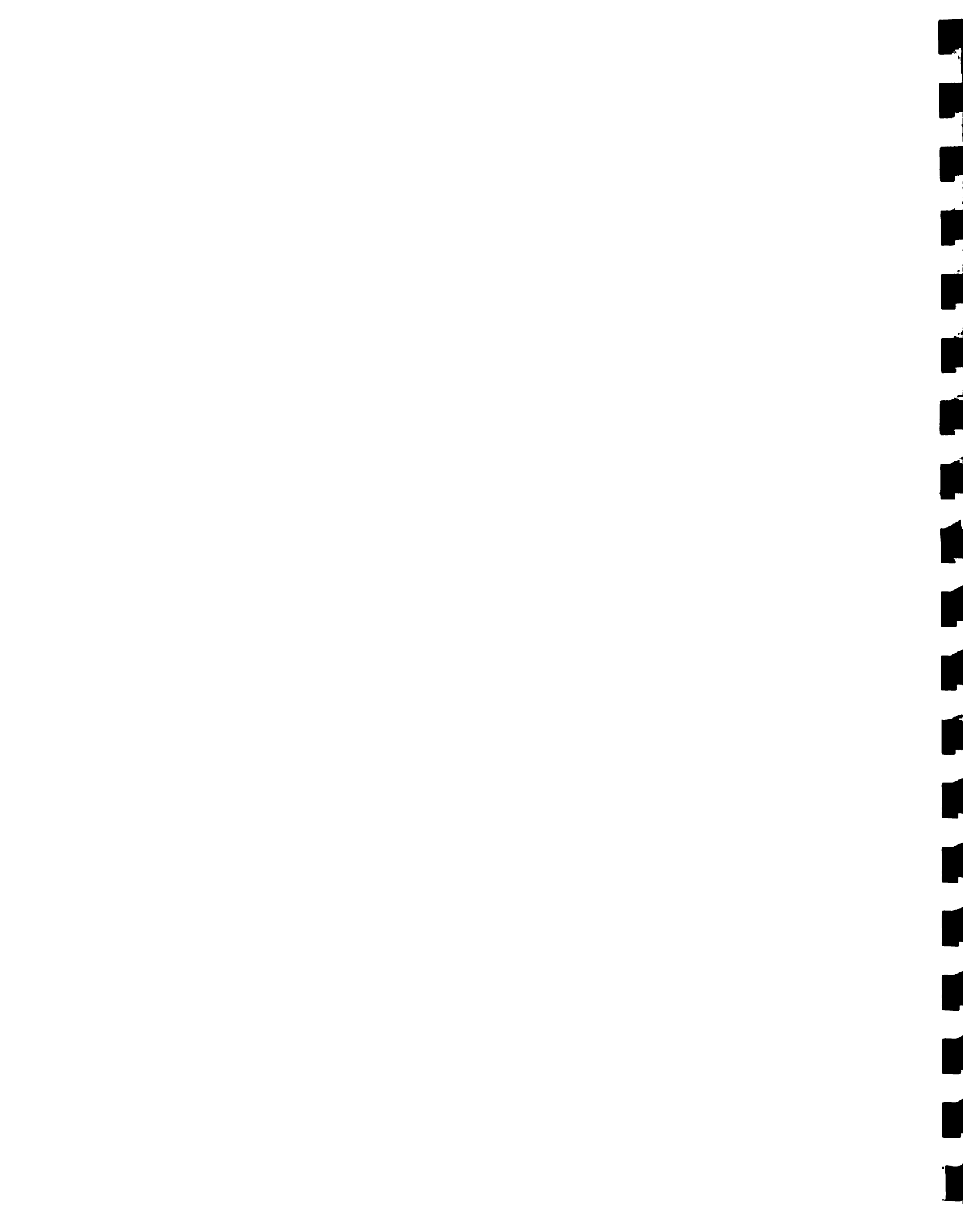
- maintain its role in economic and social management;
- increase the economic role of the private sector, and
- adopt effective medium-term macro-economic policies.

(c) Agricultural Development Strategy

The government recognises that the agricultural sector has a critical role to play in the development of the economy and a major effort will be made to revitalise the sector during the period of the Development Plan (1988-93). The stated objectives are to:

- effect the optimal utilisation of land;
- enable the sector to provide a larger share of the domestic food demand;
- ensure that the sector forms the basis for agro-industrial activities;
- increase the volume of non-sugar exports, and
- promote the rationalisation of the sugar sub-sector.

According to the Plan, priority will be given to stimulating non-sugar agriculture, fishing and agro-industrial development. Accordingly, there are plans to accelerate diversification of the sector and increase production of selected commodities (beef, mutton, cotton, peanuts, flowers and fruits) and stabilise sugar production at an optimum level.



CHAPTER IV

4. OVERVIEW OF THE AGRICULTURAL SECTOR OF BARBADOS

4.1 Environment

Barbados, the most easterly of the Caribbean islands, is located at 13° 10N latitude and 59° 35W longitude. The nearest part of the South American continent is the coast of Venezuela 200km to the south-west, while Trinidad, with which there are many cultural, political, economic and trade links, lies 300 km further south-west. The island has a maximum length of 34km and varying widths to a high of 23km. The total area is approximately 432 sq. km (166 sq ml.) The country is comparatively flat, rising gently from the west coast to a central ridge, with the highest elevation of 340m (1115 ft.) above sea level.

Barbados has a tropical climate, with mean temperatures ranging from 20° C (68° F) to 31° C (87.7° F). The country's humidity is relatively low (62-72%) with annual rainfall ranging from 1254 mm (49.4 inches) to 1650 mm (65.0 inches), with increasing amounts away from the coastal areas. The island has two distinct seasons. A wet season runs from June through to mid-December, the remainder being dry.

One of the main ecological problems which the agricultural sector has traditionally faced, is that of relatively poor and shallow soils. Soil erosion is a continuous hazard especially in the eastern part of the island. Soil conservation therefore is a critical need and as such crop zoning, improved land preparation and cultural practices, and water management have become integral parts of the agricultural development strategy.

Groundwater constitutes 83% to 88% of the island's water resources and provides more than 95% of the country's drinking water. The careless use of pesticides, fertilizers and other chemicals could pose a serious threat to environmental contamination and pollution.

4.2 Structural Characteristics of the Agricultural Sector

The agricultural sector is characterised by a heavily skewed pattern of land ownership. This has made a convenient division of production units in two categories, small farms with an average size of 0.37 hectares and a "plantation" group of farms averaging more than 25 hectares. According to the 1971 Agricultural Census, "plantations" accounted for only 1.0% of farm units, but covered 87% of all farm land (Annex B- Table B2.1). The majority of the small farms have soils that are too poor to support intensive cropping systems.



Sugar cane dominates both small and large scale production. Among the small farms, however, there is a greater measure of crop and livestock diversification. Based on the 1971 Census, farms over 4 hectares produced 85% of the sugar cane, 95% of the root crops, and 53% of the vegetables. Mixed cropping and inter-planting are common practices, with crops planted to meet seasonal demands.

Over half of the farmers (as defined in the 1971 agricultural census) have no land of their own. They usually keep small ruminants tethered and feed them grass cut from unused land or by allowing animals to graze on the road sides.

Only about 14% of the small farmers are "full time" farmers. Many of the others have secured off-farm employment in other sectors or on the plantations. In addition to the part-time nature of small scale farming, seasonal peaks in demand for labour on small farmer holdings coincide with periods of high labour demand by plantations. Consequently, small farmers offering only temporary employment opportunities have difficulty competing with plantation owners who can usually offer more permanent work and fringe benefits.

4.3 Resource Base

(a) Population and Labour Force

In relation to the total population, the agricultural population is ageing rapidly and the average age is relatively high due to the low level of participation of younger people. It is estimated that only 13% of the agricultural population is under 24 years of age, while for the other sectors the figure is approximately 30%. In education, the levels for agriculture are again very different from other sectors, with 45% having no more than a primary education as against 19% in other sectors. Closely related to the age/education structure of small scale producers is an attitudinal problem. Farming is considered a "low status job" which is neither attractive nor sufficiently remunerative to young people. Employed agricultural labour force relative to the agricultural sector is presented in Table 4.1 below.

(b) Land

Land is one of the resources for which there is considerable demand, due to rapidly increasing requirements mainly for housing and tourism, which has driven up the price very rapidly. Despite this phenomenon, about 24,000 hectares, or 56 percent of the area of the island, are currently used for agricultural purposes; resulting in average holdings of only 0.9



hectares. The existence of many tiny farms makes it difficult to profitably produce many crops.

The soil and other natural characteristics of the country supported the dominance of sugar cane in the economy since the last century, but these qualities appear to be less favorable to the development of non-sugar agriculture.

TABLE 4.1
EMPLOYED LABOUR FORCE BY INDUSTRY GROUP ('000 PERSONS)

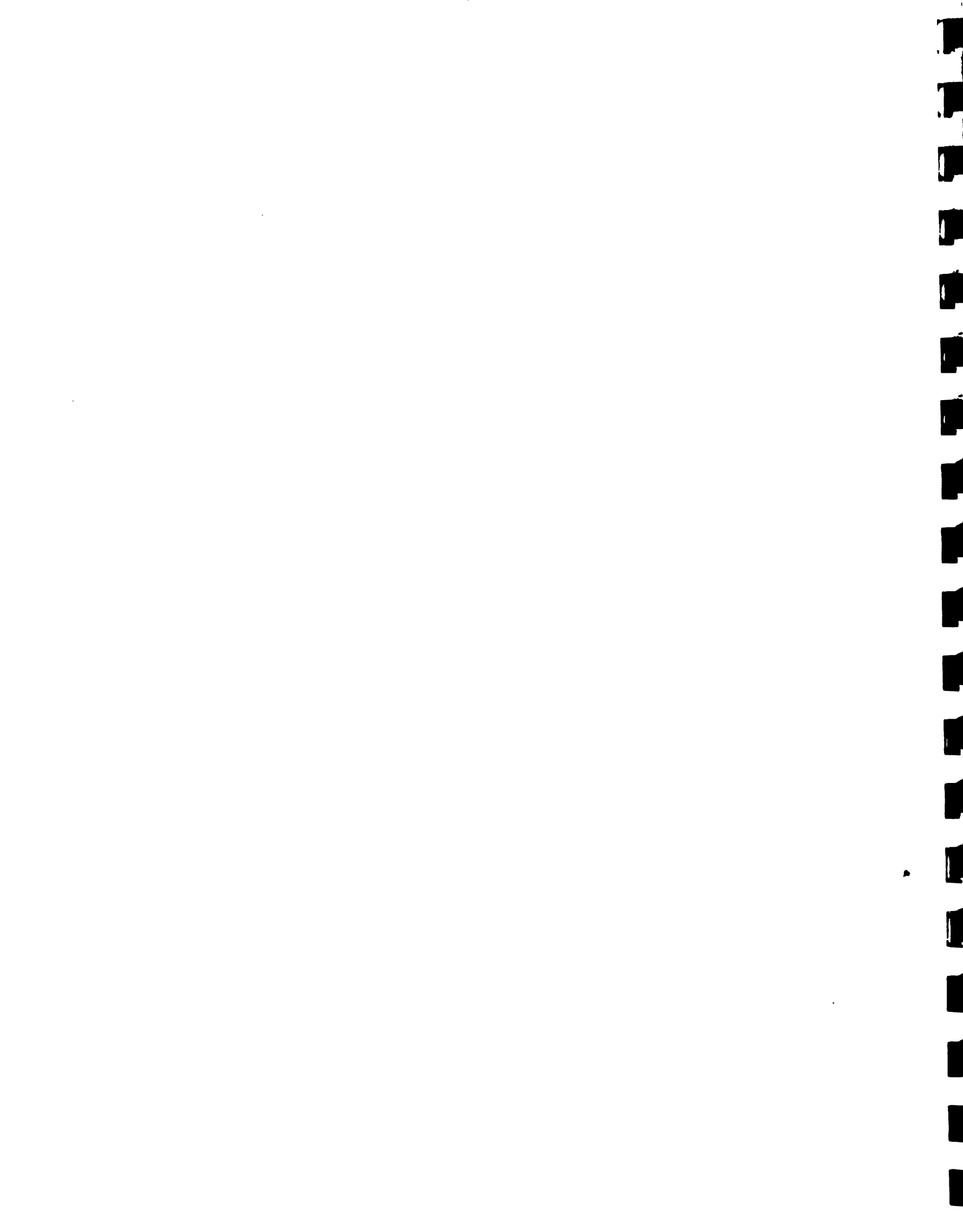
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Agriculture and Fishing	9.3	9.4	8.4	7.7	8.5	7.8	8.3	7.8	7.3	6.5
- Sugar	3.5	4.0	3.5	3.5	2.6	2.5	2.5	2.6	n.a.	n.a.
Manufacturing	15.0	14.1	13.0	12.7	12.5	12.0	11.4	12.1	12.6	12.5
Electricity, Gas and Water	0.8	1.2	1.6	2.0	2.0	2.3	2.1	1.9	1.4	1.6
Construction and Quarrying	8.1	6.3	7.6	7.7	6.9	7.1	8.8	7.7	6.9	9.1
Commerce and Tourism	21.0	23.4	21.8	21.4	19.9	20.1	20.7	21.9	19.3	15.6
Transport and Communication	5.9	4.8	4.9	5.5	5.1	5.1	5.4	6.2	8.1	13.6
Financial Institutions	3.1	3.9	3.7	3.5	3.3	3.2	3.5	3.7	3.7	4.3
Government and Other Services	36.9	37.1	35.5	35.4	35.2	34.5	36.0	36.6	38.7	37.5
Total Employed	100.1	100.2	97.3	95.9	93.4	92.1	96.2	97.9	98.0	100.7
Agriculture and Fishing as % of Total	9.3	9.4	8.6	8.0	9.1	8.5	8.6	8.0	7.5	6.5

4.4 Institutional Structure

There are several national, regional and international institutions actively involved in efforts to foster and develop the agricultural sector in Barbados (Table 4.2). While some of these institutions have been relatively effective in carrying out their mandate, the absence of an inter-institutional framework to coordinate their diverse activities has led to some measure of duplication of efforts and inefficiencies, the use of scarce resources. This clearly contributes to the limited success achieved so far in meeting the country's agricultural development objectives.

The public sector institutions primarily responsible for fostering and promoting the development of the sector are the Ministry of Agriculture, Food and Fisheries (MAFF), Barbados Agricultural Development Corporation (BADC), Barbados Marketing Corporation (BMC), Barbados National Bank (BNB) - Agricultural Division and the Barbados Development Bank (BDB).

The MAFF has overall responsibility for promoting agricultural development while the other institutions have specific terms of reference. The political directorate within the MAFF consists of a Minister of Agriculture. Within the realm of its centralized activities, the Ministry of Agriculture carries out its functions



through the offices of one Permanent Secretary and one Chief Agricultural Officer (CAO).

The Permanent Secretary directly guide, supervise, monitor, control and evaluate the organization and functioning of quasi-governmental institutions as well as the administrative and regulatory activities within the Ministry. The CAO is the chief technical officer of the Ministry and is responsible for the technical activities and services provided to the agricultural community.

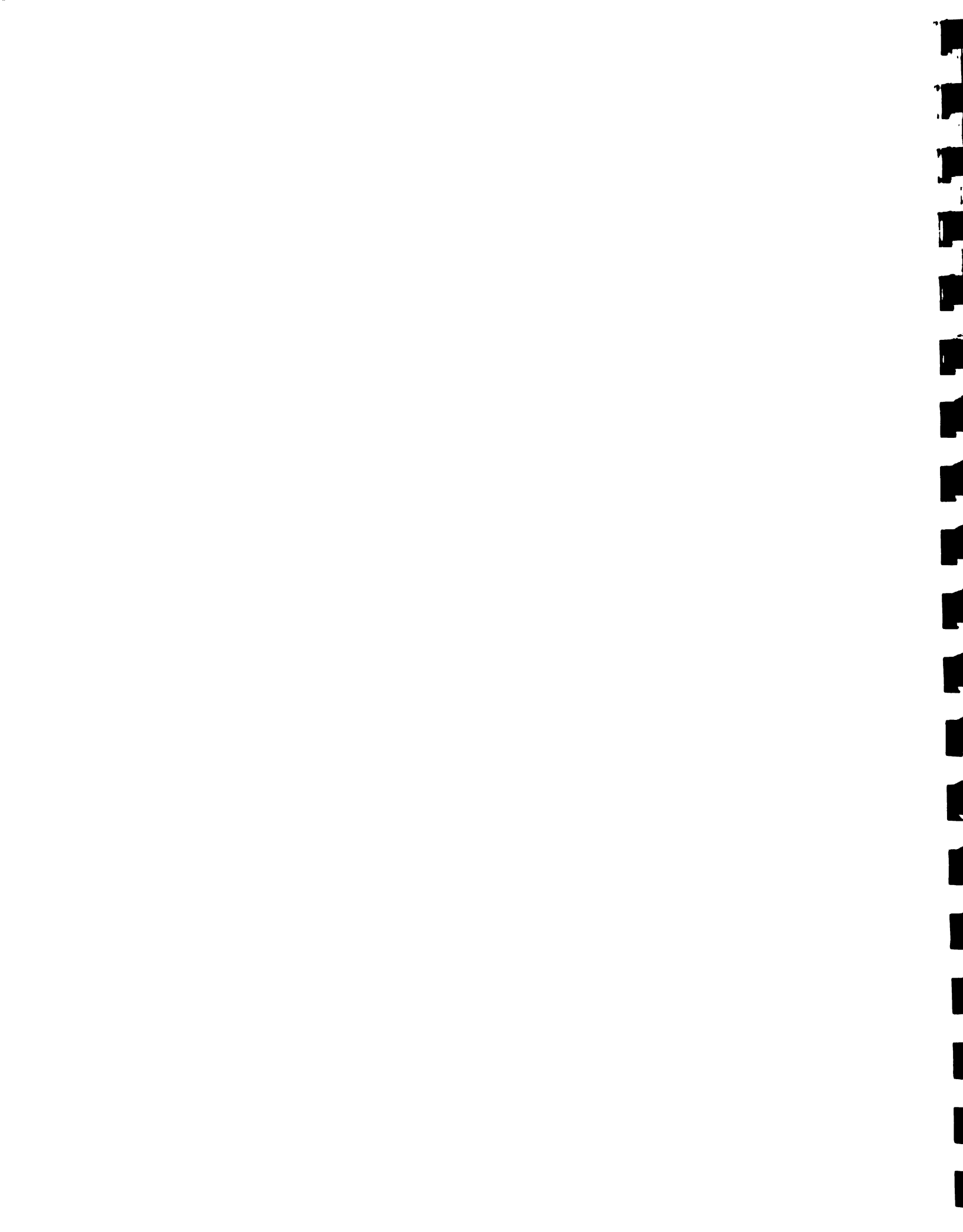


TABLE 4.2

**LIST OF MAIN INSTITUTIONS INVOLVED IN
AGRICULTURAL DEVELOPMENT IN BARBADOS**

A. National Institutions

The Ministry of Agriculture, Food and Fisheries (*MAFF*)

Barbados Agricultural Development Corporation (*BADC*)

Barbados Marketing Corporation (*BMC*)

Barbados Sugar Industry Limited (*BSIL*)

Barbados Agricultural Society (*BAS*)

Barbados National Bank - Agricultural Division (*BNB*)

Barbados Dairy Industries Limited - Pine Hill Dairy

Industrial Development Corporation (*IDC*)

Export Promotion Corporation

Barbados Horticultural Society (*BHS*)

National Council of Science and Technology (*NCST*)

National Development Foundation (*NDF*)

B. Regional Agencies

Caribbean Agricultural Trading Company (*CATCO*)

Caribbean Food Corporation (*CFC*)

Caribbean Agricultural Research and Development Institute (*CARDI*)

Caribbean Common Market (*CARICOM*) - *Export Development Project*

Caribbean Development Bank (*CDB*)

University of the West Indies (*UWI*)

C. International and Bilateral Donor Agencies

Canadian International Development Agency (*CIDA*)

British Development Division (*BDD*)

Food & Agriculture Organisation (*FAO*)

Inter-American Institute for Cooperation on Agriculture (*IICA*)

Inter-American Development Bank (*IDB*)

Organization of American States (*OAS*)

United National Development Programme (*UNDP*)

United States Agency for International Development (*USAID*)



The BADC is in charge of a number of government-owned plantations. These plantations are used as "model" farms for stimulating development of the private sector. Within its sphere of influence, BADC carries out some research and extension activities.

The BMC concentrates mainly on marketing of agricultural produce as well as regulatory functions through the issuing of export and import permits. BMC monitors the quality of exports and is responsible for importing products to supplement domestic production whenever shortages occur.

The BNB services the agricultural sector through its agriculture credit division. Previously, this service was provided by the Agricultural Credit Bank but this agency is no longer functional. Two main lines of credit are available to the bank for disbursement - one from the Caribbean Development Bank (CDB) and the other from a combination of the Bank's own resources and grants from government. Additional disbursement funds are obtained from International lending agencies such as the Inter-American Development Bank (IDB), European Investment Bank (EID) and the World Bank.

4.5 Analysis of Sectoral Performance

Although agriculture played a leading role in the historical development of Barbados, the sector's share of national income has declined significantly since the 1950's when it contributed over 50% of GDP. The sector's contribution to GDP fell from an average of 26.3% in 1960-62, to 11% in 1975-77, to 6.5% 1985-87 and to 5.9% in 1988-89. Although sugar has dominated the farming scene in Barbados for three centuries, the combined effects of a continuous decline in real output of the sugar industry and an expansion in non-sugar agriculture has resulted in the latter sub-sector contributing twice as much as sugar to GDP by the year 1989 (Table 4.3).

TABLE 4.3
GROSS DOMESTIC PRODUCT IN AGRICULTURE BY SECTOR OF ORIGIN
(US\$ MILLION AT CURRENT PRICES) 1978-1989

Year	Total GDP Barbados	Sector of Origin of Gross Domestic Product			% Composition of Agricultural GDP				
		Total Agriculture	%	Sugar	Food Crops	Livestock	Fishing	Misc. Cultivation	
1978	492.2	45.9	9.3	56.4	20.7	14.1	8.2	0.6	
1979	598.0	54.5	9.1	58.7	18.0	13.8	9.0	0.6	
1980	744.9	71.8	9.7	65.6	15.0	11.6	7.2	0.6	
1981	853.1	64.5	7.6	54.2	24.2	13.5	7.5	0.6	
1982	892.1	61.0	6.8	46.1	28.8	16.1	8.3	0.7	
1983	949.5	67.8	7.1	42.0	29.7	13.4	14.2	0.7	
1984	1037.3	70.7	6.8	41.7	28.9	14.9	13.8	0.7	
1985	1090.3	69.0	6.3	42.6	26.1	15.9	14.6	0.8	
1986	1148.7	73.2	6.4	42.3	26.5	15.4	14.4	1.4	
1987	1249.5	85.8	6.9	40.0	30.2	14.6	14.0	1.2	
1988	1333.8	86.5	6.5	38.8	33.8	14.7	11.7	1.0	
1989	1448.2	76.5	5.3	34.3	32.6	20.7	11.5	0.9	



Other indications of the sector's decline in importance are the fall in the proportion of the labour force employed from just below 10% in the mid-1970's to 6.5% in 1989, and the plummeting of the sector's share of total merchandise exports from an average of 35% in the 1976-79 period to 24% in 1986-89.

Bad weather, labour shortages and a decrease in the land under cultivation were the main factors responsible for the contraction of the sector. With respect to labour, the rapid ageing of the farm work force is a reflection of a disdain among young people for agricultural work in general, and work on sugar estates in particular. Because of the historical experiences of slavery and the plantation system, there is an attitudinal problem as a result of the stigma attached to agriculture. In addition, the levels of remunerations and profits with most agricultural enterprises are low. Farming is considered unattractive and undignified to young people. A negative farmers' image has been developed and nurtured because of these factors.

(a) Crops

Sugar Subsector

The Barbados Sugar Industry has been in existence for three centuries, and has been the dominant feature of the island's economy and society. The economic development which began after independence in the 1960's, however, presented the industry with a number of difficult problems. Historically the sugar industry has provided employment for large numbers of workers at low wages and with low productivity. As the demand for labor increased with development in other sectors, however, the wage levels and working conditions required to keep an adequate supply of labor soon were higher than the industry could pay without productivity increases. Between 1981 and 1986, for example, sugar wages rose more than 40 percent while the consumer price index rose less than 28 percent. At the same time, productivity was negatively affected by reduced soil fertility resulting from the practice of pre-harvest cane burning, which had been prevalent prior to the late 1970's.

A second problem for the sugar industry was the change in its export markets associated with the termination of the Commonwealth Sugar Agreement in 1974. The Commonwealth Agreement was replaced by the Sugar Protocol of the Lome Convention, under which Barbados' quota in the EEC preferential price markets fell by over 60 percent, to approximately 60,000 long tons, partly due to the fact that the country had not been meeting its quota.



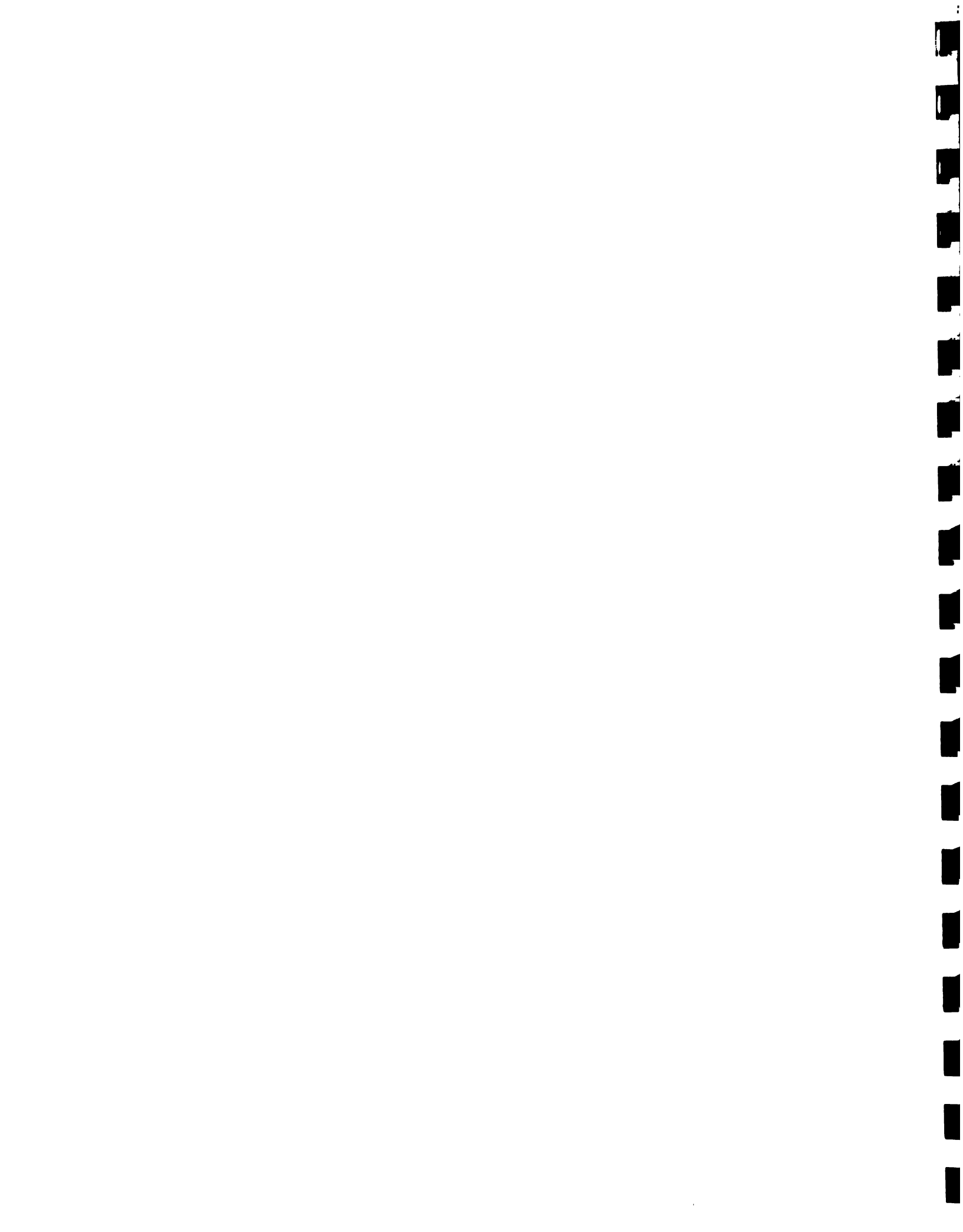
To these longer-term problems facing the industry, a short-term blow was added beginning in 1982. As the dollar rose against the European currencies, the domestic value of Barbadian sugar exports fell from about BDS\$900/ton to BDS\$600/ton. For the industry this meant moving from profit to losses and an inability to repay its debts.

At that point the Government stepped in to try to save the sugar industry. It did that by creating a financial support program under which it guaranteed bonds issued yearly by Barbados Sugar Industries Limited (BSIL). The proceeds from the sale of these bonds were used to lend to producers amounts equal to the difference between the actual price received for sugar and a higher pre-determined support price. These loans were made convertible into grants under conditions which varied from year to year, but were generally designed to stimulate modernization and production. A sinking fund was established to pay for the redemption of these bonds. The price of sugar sold for domestic consumption, which is controlled by the Government, was increased to a high level in order to provide resources to the sinking fund. Bonds issued under this program, which lasted from 1982 to 1986, were fully subscribed, mainly by insurance companies. A substantial part of the loan proceeds under the financial support program were converted into grants, while the sugar industry was unable to pay a good share of the rest. This seriously depleted the sinking fund, which was able to pay interest on the bonds, but not the principal.

Since 1986, however, the external situation for Barbadian sugar has improved somewhat, as the United States dollar reversed its course and weakened significantly against European currencies. In fact, at prices prevailing in the spring of 1988 sugar exports may be marginally profitable again. Nonetheless, it remains clear that sugar is at best marginally profitable, even in the most preferential markets under relatively favourable exchange rate circumstances.

Output figures available for sugar cane and its products show a situation of general decline in the sugar industry. Table 4.4 shows that sugar cane production declined from a high 1.20 million tonnes in 1980 to a low of 0.56 million tonnes in 1989. Sugar output of 66,263 tonnes in 1989, the lowest since 1931, was 49% of the 136.6 tonnes produced in 1980 (Figure 4.1). The decline in the production of sugar cane and its products resulted primarily from a combination of factors including the following:

- (i) a gradual reduction in the area planted in sugar cane (Figure 4.2) due in part to the industrialization thrust and increased urbanization;



- (ii) declining output per hectare related to such factors as poor cultivation practices, pests and adverse weather conditions;

TABLE 4.4
SUGAR STATISTICS 1972 - 1989

YEAR	PRODUCTION							SUGAR EXPORTS			
	Area Cultivated (000 ha)	Yield per ha (tonnes)	Canes Milled ('000 t)	Sugar Produced ('000 t)*	Tonnes Cane/Sugar	Tonnes Sugar per ha	Factory Revenue (US\$M)	(%GDP)	Tonnes ('000)	Export Prices/t (US\$M)	Export Earnings (US\$M)
1972	17.8	59.7	1060.0	112.8	9.4		16.6	7.7	99.2	139.8	13.6
1973	18.7	53.2	1040.0	117.9	9.2		17.9	6.8	114.4	139.3	16.1
1974	16.8	57.0	956.0	110.7	8.6	6.6	23.4	7.3	98.3	289.9	26.1
1975	16.1	52.5	845.0	98.6	8.6	6.1	33.4	9.5	117.5	404.5	47.5
1976	15.9	57.8	919.0	103.6	10.0	6.5	23.6	6.1	85.0	304.1	27.6
1977	15.9	65.9	1045.0	124.1	8.4	7.8	39.1	6.4	108.3	341.6	37.5
1978	15.8	56.7	895.0	104.1	8.6	6.6	37.4	5.5	88.1	365.6	32.7
1979	15.9	66.3	1052.0	118.5	8.9	7.5	42.4	7.0	101.2	348.5	36.8
1980	16.1	74.9	1204.0	136.6	8.8	8.5	65.9	7.9	119.6	457.4	57.8
1981	15.8	60.7	962.0	97.5	8.9	6.2	44.0	4.1	63.0	482.9	31.7
1982	15.8	51.0	766.0	85.5	9.4	5.4	35.8	3.1	89.0	388.1	35.5
1983	14.1	50.1	705.0	82.8	8.5	5.9	34.7	3.0	73.5	358.9	26.8
1984	14.1	57.8	813.0	100.4	8.1	7.1	38.5	2.8	85.9	373.9	32.1
1985	13.9	57.3	794.0	100.2	7.9	7.2	39.8	3.2	83.4	377.5	31.4
1986	13.9	65.5	908.0	111.1	8.2	8.0	36.5	2.7	98.6	314.1	31.0
1987	12.8	54.0	689.0	83.4	8.6	6.5	39.1	2.7	70.2	520.0	35.6
1988	11.5	60.6	699.0	80.3	8.7	7.0	38.6	2.9	67.9	542.8	33.6
1989	11.1	50.4	560.0	66.3	8.5	6.0	30.4	2.1	51.8	502.0	26.0

SOURCE: Barbados Sugar Industry Limited
Made up of Sugar, Molasses and Vacuum Pan

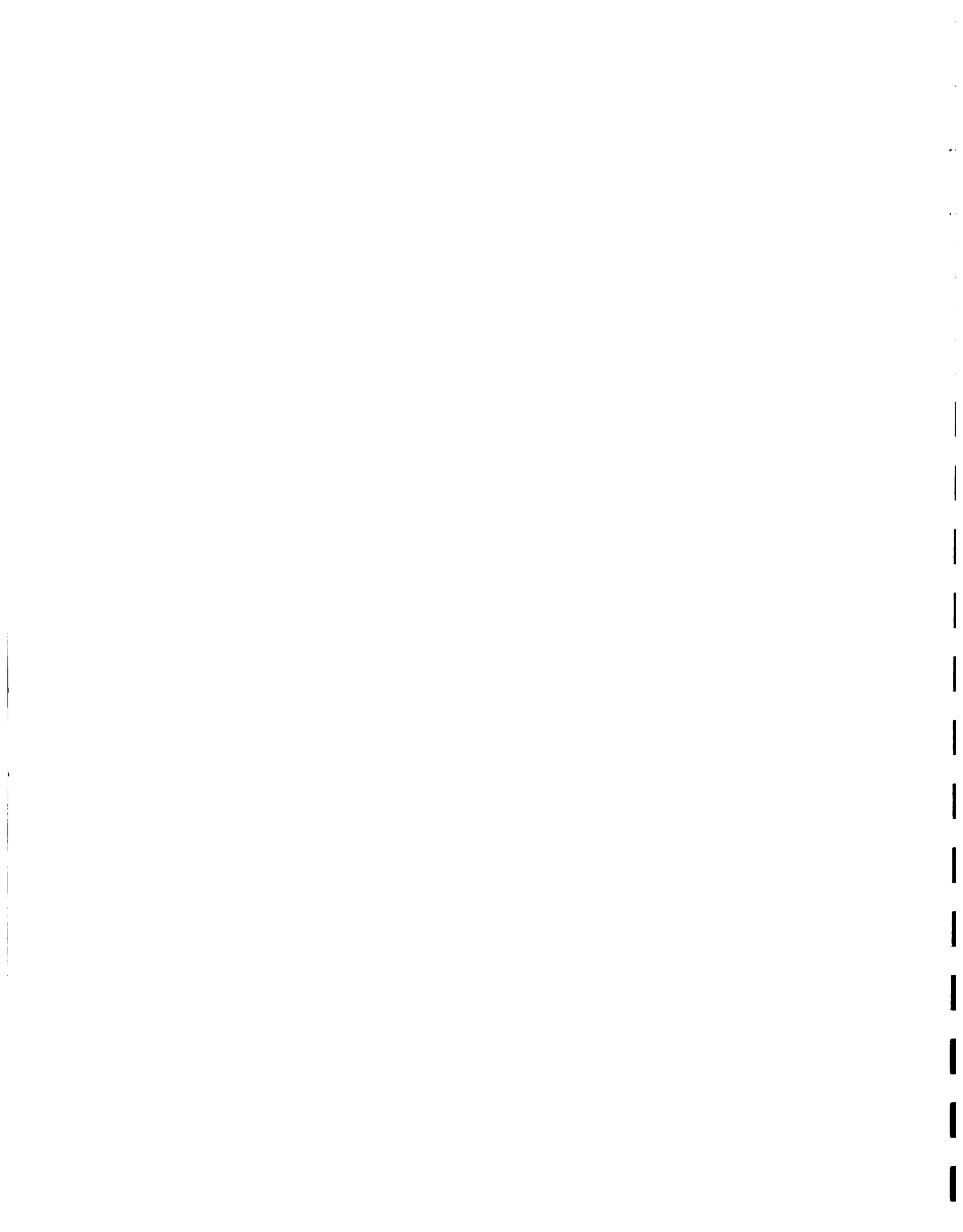
- (iii) rising production costs and almost stagnant export prices; and

- (iv) poor and/or inadequate managerial and supervisory skills.

Export earnings from sugar and sugar-cane products declined from US\$58.0 million in 1980 to US\$26.0 in 1989, a 55% reduction.

The sugar industry continues to face questions about its future in light of the persistent differences between revenue and expenditure. In 1985, for example, the industry received an average price of US\$378 per metric ton of sugar, while production cost was US\$626 per metric ton. The average price per metric ton received for sugar exported in 1988 was US\$543, while production cost stood at US\$680 per metric ton. Costs have remained high despite rationalization, abandonment of marginal lands and mechanization.

For the medium term, the government is committed to retain an industry capable of supplying between 90,000 and 100,000 tons to satisfy domestic and external market requirements. This is



in lieu of both economic and agronomic needs. Economically no other crop has been identified which can provide consistent foreign exchange earnings and require such high labour inputs as sugar cane. Agronomically few crops can provide protection to extremely shallow and erosion pruned soils as sugar cane.

Non-sugar agriculture is being developed as part of the overall strategy of diversification of the sector. The cotton industry however continued to be plagued by insect infestation, seed germination difficulties, as well as managerial and legal problems associated with the company, Carsicot, which was established to guide the development of this sub-sector. Production data available on the industry shows cotton output increasing at an astronomical rate from 7,000 kgs in 1984 to 172,900 kg by 1987. Output, however, declined by 45% over the next two years to record only 95,000 kg in 1989 (Figure 4.3)

Vegetable production fluctuated between 1980 and 1989, but tended to decline, with the result that the 1989 production of 5.17 million kg was 54% below the 11.35 million kg achieved in 1983 (Figure 4.4). The main vegetable crops produced are carrot, onion, tomato, string beans, sweet pepper, cucumber and cabbage.

Yam, sweet potato, cassava, eddoe, tannia and dasheen are among the most traditional crops grown. Production of these root crops and tubers also shows fluctuation, with a tendency towards decline. Yams and sweet potatoes, the two main root crops produced, recorded decreases in output of 46% and 41% respectively over the period 1983 to 1989 (Figure 4.5). Volumes of these two commodities exported to extra-regional markets have shown the same declining trend as production.

Although the commercial production of fruits was not a traditional feature of Barbadian agriculture, the need for diversification brought about a significant interest for the establishment of commercial orchards. Per capita consumption of fresh fruits in Barbados is estimated to be 25 kg per year. This figure alone represents a consumption of over 6 million pounds of fresh fruits. The bill that Barbados has had to pay for fruit imports has been increasing almost steadily for the past 15 years. Barbados has exported in the past small amounts of fruits to extra-regional markets of which breadfruit, Barbados cherries, golden apples, water coconut and limes were the most common. Since 1987 this country became an exporter of papaya, and in 1988 over 100 thousand kgs were supplied mainly to the UK.

Three groups of fruit crops have been identified as production priorities by the MAFF:



1. Fruits to be produced primarily for fresh fruit consumption: papaya, mango, avocado, pineapple, breadfruit, and bananas.
2. Fruit produced for fresh and processing purposes: carambola, grapefruit, plantain.
3. Fruits produced primarily for processing: Barbados cherries, guava, and passion fruit.

Although considerable progress in expanding non-sugar agriculture has been achieved in a few selected areas, future success in diversification will depend on surmounting the following key constraints:

- (i) Changing from sugar cane to other crops can seriously damage the thin soil of Barbados, given that sugar cane is an ideal plant for minimizing soil erosion.
- (ii) Because of the limited size of the domestic market, diversification will require the development of export markets, along with appropriate systems for distribution, storage, grading, etc. Barbados must find niches for specialty vegetables and fruits in the European and North American markets, particularly in their West Indian ethnic communities.
- (iii) The traditional orientation towards sugar can means that most of the workers have not developed the skills required for those types of farming. Sugar cane survives with a minimum of attention and routine care, while many of the alternatives require daily attention as well as management which is adaptable and capable of making and implementing decisions quickly. Furthermore the educational system does not encourage agricultural labour of any kind.
- (iv) Diversification will require the provision of a broad array of basic services -- credit, research, technical assistance, training, irrigation and marketing-- oriented specifically to targeted products. traditionally in Barbados these services have been oriented almost exclusively to the sugar subsector.



- (v) Diversification will also require considerable financial resources for investment and setting up economic incentives designed to promote priority activities.

(b) Livestock and Dairy Products

Livestock production in Barbados is characterized by a dual system, in which a large number of small farmers utilizing traditional methods of production co-exist with a small number of large farm enterprises using modern technology. Production is however, dominated by the traditional "tethered back-yard system", in which the small and "landless" farmers rear animals for sale to local markets and/or for home consumption.

According to the 1971 agricultural census, 70% of total cattle farmers had holdings of 2 hectares or less (30% were in the "landless" farmers category). In the case of sheep, 96% were in holdings of less than 2 hectares, with 58% in the "landless" holdings category.

Domestic production data available and presented in Annex B - Table B2.2 shows that for the period under review the livestock and dairy sub-sector maintained steady growth up to 1989. Pork production fluctuated a great deal (0.70-1.3 million) between 1981 and 1989. This variation can be partly attributed to the large number of pig farmers who enter and leave the industry at varying times. This phenomenon causes periods of glut and scarcity of pork.

Beef production between 1980 and 1988 fluctuated between 0.24-0.41 million kg, before increasing dramatically to 0.83 million kg in 1989. The trend in the poultry industry of increased meat output since 1980 continued into 1989 when production exceeded 10 million kg for the first time (Figure 4.8). The country is now self sufficient in poultry meat but egg production fluctuates.

Milk production increased steadily over the last decade and by 1989 reached 12.8 million kg. Pine Hill Dairy (PHD) Limited, the sole dairy plant operating in Barbados, in 1989 announced a quota system for the purchase of farmers milk. This was aimed at preventing a glut of fresh milk and also at reducing losses incurred when the excess fresh milk has to be used to manufacture evaporated milk.



FIGURE 4.1

SUGAR PRODUCTION
(000 tonnes)

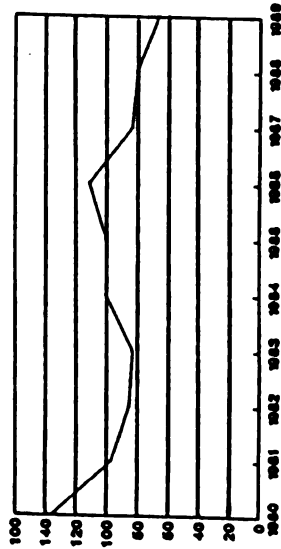


FIGURE 4.2

SUGAR AREA - CULTIVATED
(000 hectares)

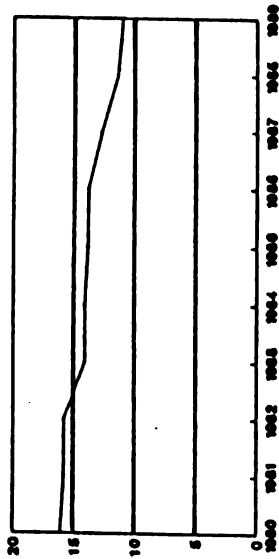


FIGURE 4.3

COTTON PRODUCTION
(000 kilogrammes)

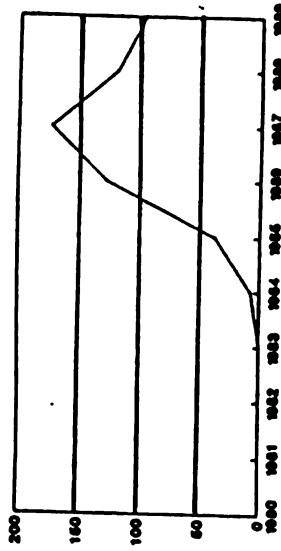


FIGURE 4.4

VEGETABLE PRODUCTION
(1x10 kilogrammes)

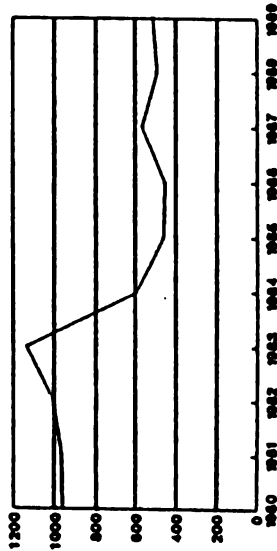


FIGURE 4.5

ROOT CROP PRODUCTION
(1x10 kilogrammes)

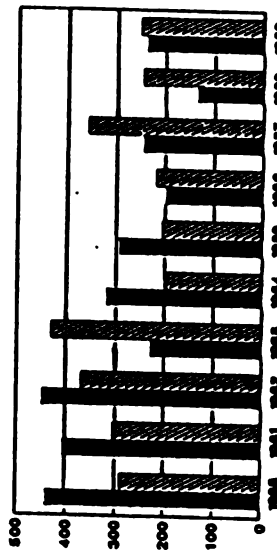


FIGURE 4.7

POULTRY PRODUCTION
(000 kilogrammes)

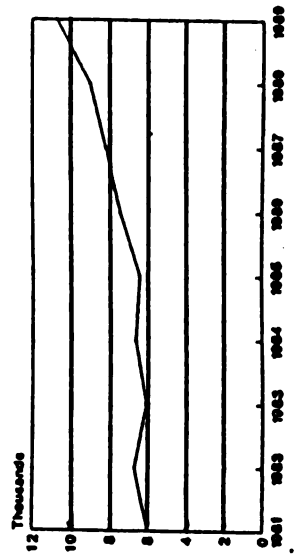


FIGURE 4.8

MILK PRODUCTION
(000 kilogrammes)

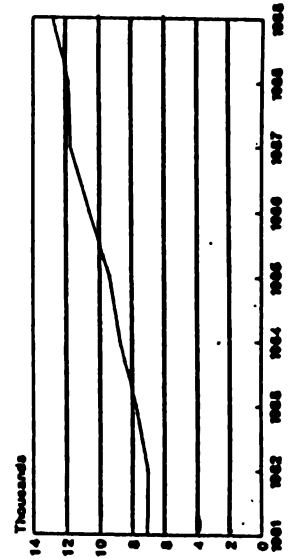
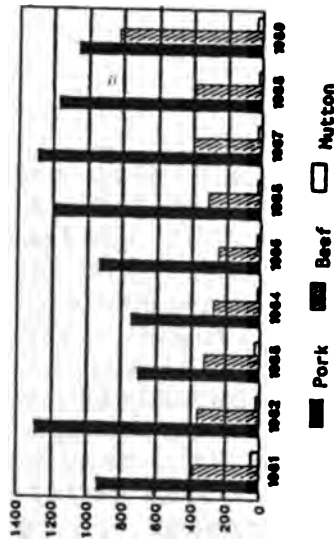


FIGURE 4.6
LIVESTOCK PRODUCTION
(000 Kilogrammes)



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(c) Fisheries

There was a decline in the 1989 fish catch even though the fishing fleet increased to 795 boats, 45 more than in the previous year. Approximately 5000mt of fish were landed compared to 5300mt in 1988; this decline was due mainly to a delay in reaching a fishing agreement with Trinidad and Tobago and to unfavourable weather. Negotiations between Barbados and Trinidad and Tobago to allow local fishermen to operate in the latter's economic zone culminated with an agreement being reached in November. The agreement takes effect on January 1, 1991 and it is valid for one year with possibility for renewal. The agreement basically states that no more than 40 licenses will be granted by Trinidad and Tobago to barbadian fishermen to fish in that country's waters. In return, Barbados would allow up to 300mt of fish to be imported from Trinidad and Tobago, resulting in an interim agreement on fishing rights.

4.6 Agricultural Incentives

A number of incentives are currently being provided by the public sector for the farming community. The more important incentives include:

- (i) relief from the payment of import duty on most agricultural inputs, machinery and equipment;
- (ii) subsidized stud and Artificial Insemination Services;
- (iii) sale of fruit trees and planting materials at subsidized prices;
- (iv) a sugar cane price support scheme;
- (v) grants for establishment of selected agro-processing facilities and for purchasing of equipment;
- (vi) an Export Credit Revolving Scheme;
- (vii) a Livestock Development Fund; and
- (viii) a subsidized credit service.

A package of incentives valued at \$6.7 million was introduced in the 1989 Fiscal Budget. The aim of this package was to encourage farmers to bring unused land into cultivation through an operating cost-reduction mechanism by the removal of stamp duties, custom duties and consumption tax on agricultural inputs. A scheme to guarantee a minimum farm gate price for selected agricultural produce was also introduced, and minimum prices were agreed on for



sugar, cotton, sweet potatoes, yams, eddoes, hot peppers, sweet peppers, pumpkin, peanuts and squash.

The present incentive program has not really been making the desired impact on agricultural development. In some instances, incentives being offered have not been sufficiently substantial to attract the farming community. In other instances the procedures for receiving benefits under the programme have proven to be sufficiently time consuming to act as a disincentive rather than an incentive. In addition, some of the supporting mechanisms needed to enable farmers to benefit fully from the incentive programmes have not been operating satisfactorily.

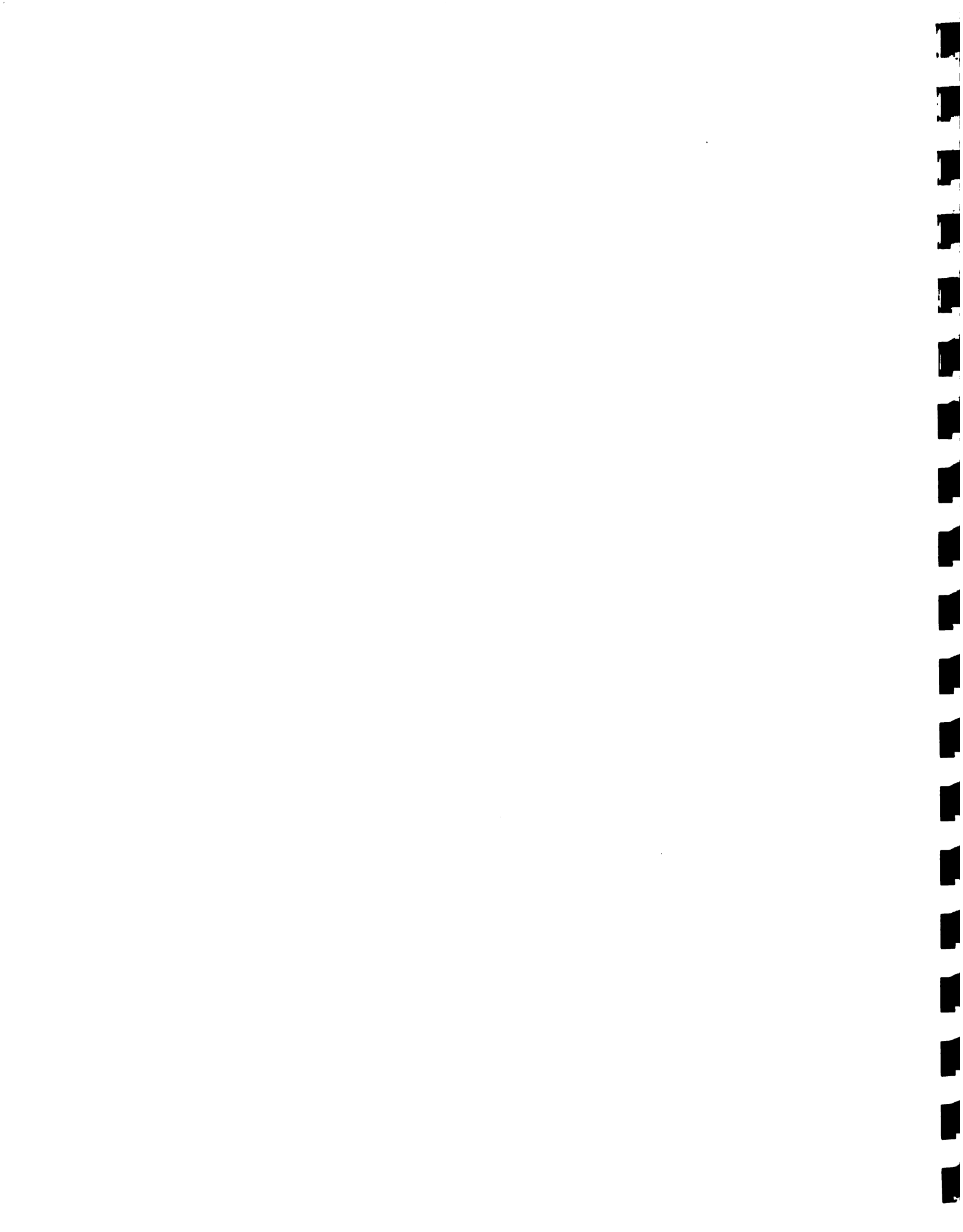
Weaknesses in the credit and marketing system have tended to act as disincentives to production. Future policy must therefore see greater attention to the improvement of the credit and marketing systems as a means of stimulating agricultural development. Efforts also should be made to improve the administration of the incentives programme so that applicants can receive benefits in a more timely manner.

The sugar price support scheme is perhaps the most significant of the existing incentives. Careful analysis of this scheme points to the need for some restructuring. Previously, the scheme was designed to encourage farmers to maintain or increase their sugar cane output, but for the future, farmers must be encouraged to put some land under non-sugar enterprises. The scheme should therefore be revised such that it will be fully supportive of the agricultural diversification policy.

4.7 Agricultural Credit

Commercial bank credit to the agriculture sector rose rapidly in nominal terms between 1982 and 1984, slightly outpacing total commercial bank credit. Agricultural credit however stagnated between 1985 and 1986. As a result agriculture's share in total bank credit averaged 4.3% between 1982 and 1986. This figure, however, indicates that the sector receives relatively little support from the banking system. In 1978 credit to the sector fell drastically as a consequence of the bank's reluctance to lend to bankrupt sugar plantations.

As can be seen in Table 4.5 up until 1989 the lion's share of the agricultural credit goes to sugar cane. The share has changed relatively little for the period 1982 to 1986 averaging just over two thirds. The livestock subsector is the second most important recipient of bank credit for this period up to 1989, with the food crops and other categories, which presumably have priority in the agricultural diversification strategy, accounting for between 7.8 - 11.7%. The livestock subsector, however by 1990 became the largest single recipient of agricultural credit, accounting for 43.5% of total GDP to this sector. It is clear that the non-sugar



crop subsector receives a far lower share of bank credit to agriculture than it contribute to sectoral GDP

Part of the reason that such a small share of banking system credit goes to the non-sugar subsector is that bankers have, until recently, perceived it to be easier to recover their sugar loans than those for other products. Mainly this is due to their long experience in dealing with the sugar industry and their knowledge of the existence of long-established fairly secure export markets for that product, in contrast with their lack of experience with other products and the lack of reliable export markets for them. Although the financial crisis in the sugar industry may have dealt a blow to bankers' confidence in it, they still seem to believe that the non-sugar subsector is excessively risky.

In view of the above, the non-sugar crop subsector needs a lending policy which can overcome the obstacles posed by questions about available security or ease of recovery. The formation of production and marketing cooperatives might help in this respect. Credit policies should also be flexible enough to allow for special situations, such as longer term loans for tree crops that don't reach full production until several years after planting.

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TABLE 4.5
COMMERCIAL BANK CREDIT TO AGRICULTURE
BO\$000

END OF YEAR	SUGAR	LIVESTOCK	FOOD CROPS	OTHER	TOTAL AGRICULTURE	TOTAL CREDIT
1982	22713	6658	1820	675	31866	680229
1983	27045	7018	1680	1633	37376	776438
1984	26755	7045	1827	1682	37309	807204
1985	24145	5752	1723	2228	33848	848926
1986	22971	6427	1727	2097	33222	880058
1987	16717	6326	1388	2519	26950	959960
1988	13808	6898	1856	2475	25037	1047554
1989	12425	9990	2398	2601	27414	1198041
1990	9799	12339	2571	3671	28380	1247088

4.8 Marketing and Agro-Industry

Sugar enjoys a preferential export market. However, there are problems associated with marketing of non-sugar products. The critical problems are the small size of the domestic market, local distribution of food crops, irregularity of supplies, as well as poor quality of product.

About 20% of the produce is sold by the farmers directly to the public via farmer cooperatives, municipal markets and other outlets. This type of marketing is time consuming (about two days per week) and requires relatively heavy investment in transport vehicles. About 50% of the produce is bought from farmers and sold to various types of wholesales or directly to the public by intermediaries, mostly women called "hucksters". Poor methods of handling fresh produce often result in high levels of damaged merchandise, produce supplies, poor presentation and unreliable timing of delivery. Hucksters have no storage facilities and often high marketing margins prevail. Supermarkets handle the remaining 30% of produce; they buy either from the various wholesalers or, in some cases, directly from the farmer. There is no major wholesale produce market on the island. With respect to imports, Barbados is a net importer of fresh and frozen agricultural produce both from Caribbean and extra-regional sources.

The main foreign markets are the United Kingdom, the rest of the EEC, the United States, and Canada. General characteristics of the extra-regional markets are that they are highly competitive in terms of prices; very demanding on quality, reliability of supplies and on packaging and presentation. They also have strict customs and phytosanitary regulations and are heavily influenced by exchange rate movements. The major consumers are West Indians resident in those countries.

Transportation is a major problem between Barbados and regional and extra-regional markets. Ocean transport takes too long and requires costly refrigerated storage; air cargo is very



expensive and is subject to uncertainties in terms of cargo space and flight time.

Presently over 50% of the installed processing capacity is idle. This is partly the consequence of insufficient supplies of local raw materials, uncertainty about markets, poor marketing and sometimes poor quality of the final product. This situation however, has been exacerbated by devaluations in Jamaica, Guyana and Trinidad and Tobago, which have enabled food processors from these countries to sell processed products competitively in the Barbados market.

Currently, processing constitutes a small but growing outlet for agricultural produce. Dairy and livestock producers have been the main beneficiaries of this technology and milk and other dairy products, plus sausages, frankfurters, ham, bacon, lard and margarine are the main commodities produced. Limited quantities of fruits such as pawpaw, guava and citrus are utilized by the Pine Hall Dairy Limited in its secondary processing operations and jams and marmalades are produced by small agro-processing units. Very little processing is done with vegetables except for frozen diced carrots and pepper sauce.

The processing of both fruits and vegetables is an activity that is expected to come increasingly to the fore as non-traditional crop production expands, and the recently established agro-industrial plant for the commercial production of a wide range of fruit and vegetable products becomes fully operational. This agro-processing company has a wide equity base, with shareholders drawn from among small, medium and large farmers, as well as private enterprises with agricultural portfolios. This particular venture is under the leadership of one of the most aggressive entrepreneurs in Barbados.

The government's Industrial Development Corporation (IDC) is becoming involved in agro-processing. Its development plan envisages the construction of an agro-processing complex specifically for small private sector entrepreneurs. The IDC proposes to provide factory shells and infrastructure (multi-user buildings) covering 20,000 sq.ft. for small agro-processors, who are expected to utilize a wide range local agricultural produce in the production of "cottage industry type" products for the local and export markets.



BARBADOS
TABLE B1.1
DISTRIBUTION OF MERCHANDISE IMPORTS FOR SELECTED YEARS
(Percentage)

	1970	1981	1984	1986	1987	1988	1989	1990
Consumer Goods	44.7	35.3	31.3	35.4	42.2	40.1	38.1	37.6
Food and Beverages	21.7	17	14.3	15.2	18.8	18.2	17.4	17
Other	23	18.3	17	20.2	23.4	21.9	20.7	20.6
INTERMEDIATE GOODS	34.8	45.9	50.6	45.1	36.9	38.6	38.9	38.6
Fuel	2.6	13.6	6.1	2.4	5.7	5	5.7	6.9
Other	32.2	32.3	44.5	42.7	31.2	33	33.2	31.7
CAPITAL GOODS	17.7	18.6	17.3	18.5	18.7	18.3	20.3	21.6
UNCLASSIFIED	2.8	0.2	1.4	2.2	2.4	3	2.7	2.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

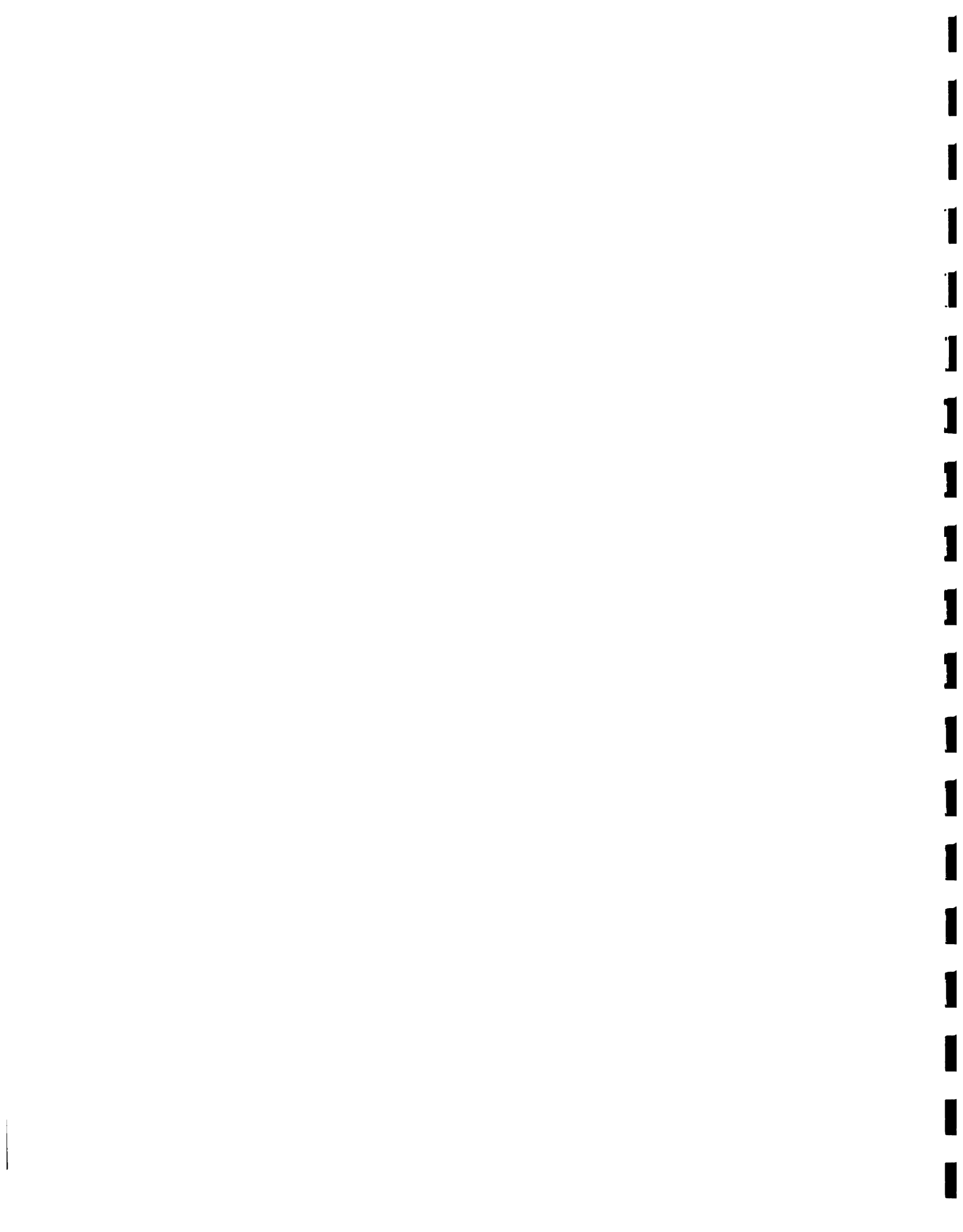
SOURCE: Barbados Central Bank Report

BARBADOS
TABLE B1.2
REAL GDP AT 1974 FACTOR COST BY SECTOR, 1982 - 1990
(US\$ MILLION)

ITEM	1982	1983	1984	1985	1986	1987	1988	1989	1990
Sugar	19.0	18.2	21.3	21.3	23.6	17.7	17.1	14.1	14.8
Non-sugar Agriculture	14.4	16.6	16.7	16.6	15.9	17.3	15.9	15.9	18.3
Mining and Quarrying	2.0	2.5	3.4	3.7	3.8	3.6	3.4	3.1	3.3
Manufacturing	43.3	44.4	45.2	40.9	43.0	40.2	42.8	45.2	43.8
Electricity, Gas, Water	8.4	9.8	10.2	10.7	11.4	11.8	12.7	13.1	23.3
Construction	25.9	25.6	25.4	24.7	26.8	28.4	31.0	33.5	29.5
Wholesale and Retail Trade	72.8	70.6	73.4	77.1	81.7	86.2	88.3	90.5	85.6
Tourism	44.6	43.7	46.7	45.3	48.4	55.7	61.6	67.8	60.8
Transport, Storage and Communication	26.8	27.2	28.5	29.3	30.7	32.3	32.4	34.5	32.4
Business and General Services	66.8	67.1	67.7	70.4	72.5	72.8	75.1	77.8	76.7
Government Services	50.4	50.4	50.7	53.2	55.9	58.1	58.7	59.3	60.2
GDP at Factor Cost	374.4	376.1	389.2	393.2	413.7	424.1	439.0	454.8	448.7
Rate of Growth	(4.9)	0.4	3.6	1.0	5.1	2.6	3.5	3.6	(3.5)

(PERCENTAGE CHANGES)

Sugar	(8.6)	(4.2)	17.0		10.8	(24.8)	(3.7)	(17.3)	4.6
Non-sugar Agriculture	7.3	15.3	0.6	(0.6)	(3.9)	9.1	(8.1)		15.1
Mining and Quarrying	2.6	25.0	36.0	8.8	5.5	(6.5)	(6.9)	(7.5)	6.5
Manufacturing	(5.4)	2.5	1.8	(9.5)	4.6	(6.6)	6.7	5.4	(3.0)
Electricity, Gas, Water	1.8	16.7	4.1	4.9	6.5	3.9	6.8	3.2	1.9
Construction	(11.9)	(1.2)	(0.8)	(2.8)	8.5	6.2	9.0	8.1	(12.0)
Wholesale and Retail Trade	(8.0)	(0.3)	4.0	5.0	6.0	5.5	2.5	2.5	(5.4)
Tourism	(14.0)	(2.0)	6.9	(1.2)	6.8	15.2	10.5	10.1	(10.3)
Transport, Storage and Communication	3.1	1.5	4.8	(2.8)	4.6	5.0	0.5	6.3	(6.0)
Business and General Services	(4.8)	0.5	0.9	4.0	2.9	0.5	3.0	3.7	(1.5)
Government Services	(3.1)		0.6	4.9	4.6	3.9	1.0	1.0	1.5
GDP at Factor Cost	(4.9)	0.4	3.6	1.0	5.1	2.6	3.5	3.6	(3.5)



BARBADOS
TABLE B1.3
SUMMARY BALANCE OF PAYMENTS, 1982 - 1990
(US\$ 000)

	1982	1983	1984	1985	1986	1987	1988	1989	1990
1. Visible trade (1(a) - 1(b))	-344805	-350943	-320980	-309058	-360071	-403610	-457573	-552124	-573438
1(a) Exports	209375	273688	341643	302174	245625	132171	145638	147749	151901
1(b) Imports	554179	624631	662623	611232	605696	535781	603211	6699873	725339
2. Services (net)	279403	279496	317486	344013	332449	343463	442188	543626	493130
3. Transfers (net)	23268	20805	14680	5570	11725	6628	17715	5863	42755
4. Current Balance (1+2+3)	-42134	-50642	11186	40525	-15898	-53520	2329	-2636	-37553
5. Capital Account	38549	51779	-15115	-5251	15844	92472	47664	4935	45972
5(a) Long-term Capital	8921	22166	-17809	11549	12752	70569	31308	625	31618
6. Errors and Omissions	10785	5521	2890	9013	3149	-18712	-14158	-38052	-59505
7. Basic Balance (4+5+6)	-33214	-28476	-6624	52074	-3146	17050	33636	-2012	-5935
8. Balance for official Financing (4+5+6)	7200	6658	1040	44287	3095	20241	35836	-35753	-51085
9. Official Financing transactions (10+11+12)	23709	14657	3635	-3367	-13550	-23034	-11239	-6546	2043
10. IMF	25209	15657	7635	300	-12883	-15367	-9739	-6546	-3604
11. Other Monetary Authorities	-1500					-1000	-1500		5647
12. Other Official Borrowings		-1000	-4000	-3667	-667	-6667			
13. Reserve Movements (+decrease/-increase)	-30909	-21315	-4674	-40921	10455	2793	-24597	42299	49042
Allocation of SDRS	845	575	297	16	5	-827	182	642	-9
Reserve tranche subscription to IMF	6043	-2342	90	114	-405	-311	-183	194	-22

SOURCE: Central Bank of Barbados



BARBADOS
TABLE B1.4
NATIONAL DEBT, 1983-1990
(\$M)

	1983	1984	1985	1986	1987	1988	1989	1990
Central Government Debt1	863.7	955.5	1095.7	1266.5	1461.3	1611.5	1695.1	1856.6
Domestic Debt	516.4	590.2	651.7	713.0	754.4	821.8	878.0	1020.6
Short-Term	346.8	414.8	451.7	478.0	494.7	498.1	516.4	630.0
Long-term	169.6	175.4	200.0	235.0	259.7	323.7	361.6	390.6
Foreign Debt	347.3	365.3	444.0	553.5	706.9	789.7	767.1	836.0
Bilateral	28.5	33.1	30.9	29.7	133.8	130.9	117.4	168.6
International Institutions	154.0	163.7	169.6	196.6	236.2	255.7	268.7	287.4
Bonds	40.0	40.0	78.6	134.4	134.4	214.8	214.8	136.2
Euro-Markets Loans	106.1	91.5	126.6	155.7	166.0	148.0	125.7	196.0
Other	18.7	37.0	38.2	36.8	36.5	40.3	40.5	47.8
Publicly Guaranteed Debt	58.3	83.8	67.8	90.3	86.6	113.2	90.7	67.5
Public	31.3	41.8	36.0	50.7	51.6	60.5	na	na
Private	27.0	42.0	31.8	39.6	35.0	52.7	na	na
Private Non-Guaranteed Debt								
Foreign	136.1	133.8	188.2	199.9	251.3	195.5	160.1	146.5
Total Foreign Debt	604.7	694.6	978.2	1063.4	1181.7	1153.5	1103.6	1079.7
Total Domestic Debt	574.7	673.9	719.4	803.6	841.4	935.0	na	na
Central Government Debt Service	81.3	92.0	104.6	132.9	158.6	172.2	181.3	na
Domestic	43.9	46.0	48.5	56.3	58.5	71.2	76.6	na
Interest	36.8	38.4	40.5	42.7	45.1	45.5	58.1	na
Amortization	7.1	7.6	8.0	13.6	13.4	25.7	18.5	21.2
Foreign	37.4	46.0	56.1	76.6	100.1	101.0	104.7	198.2
Interest	22.1	23.4	27.7	40.6	53.3	59.8	54.8	61.6
Amortization	15.3	22.6	28.4	36.0	46.8	41.2	49.4	136.6
Public Guaranteed Debt Service								
Foreign	9.4	20.1	27.0	26.9	39.8	41.8	34.5	27.9
Interest	7.3	15.2	18.3	20.3	17.1	13.1	9.7	8.2
Amortisation	2.1	4.9	8.7	6.6	22.5	28.7	24.8	19.7
Private Non-guaranteed Debt Service								
Foreign	38.5	40.3	44.6	37.6	56.8	71.3	53.2	61.1
Interest	10.9	15.3	15.7	17.7	16.9	20.6	15.4	13.7
Amortisation	27.6	25.0	28.9	19.9	39.9	50.7	37.8	47.4
Total Debt Service								
Foreign	85.3	106.4	156.3	187.2	269.0	251.9	210.9	303.0
Central Government Foreign Debt Service as % of Exports of Goods and Services	4.3	4.4	7.2	6.3	12.2	9.1	7.8	15.4
Central Government Foreign Debt as % of GDP	18.3	17.6	20.4	24.1	28.3	29.6	26.3	28.2

SOURCES: Accountant General
Central Bank of Barbados
(1) Does not include Publicly Guaranteed Debt



BARBADOS
TABLE B1.5
BANKING SYSTEM SURVEY, 1982 - 1990
(US\$ million)

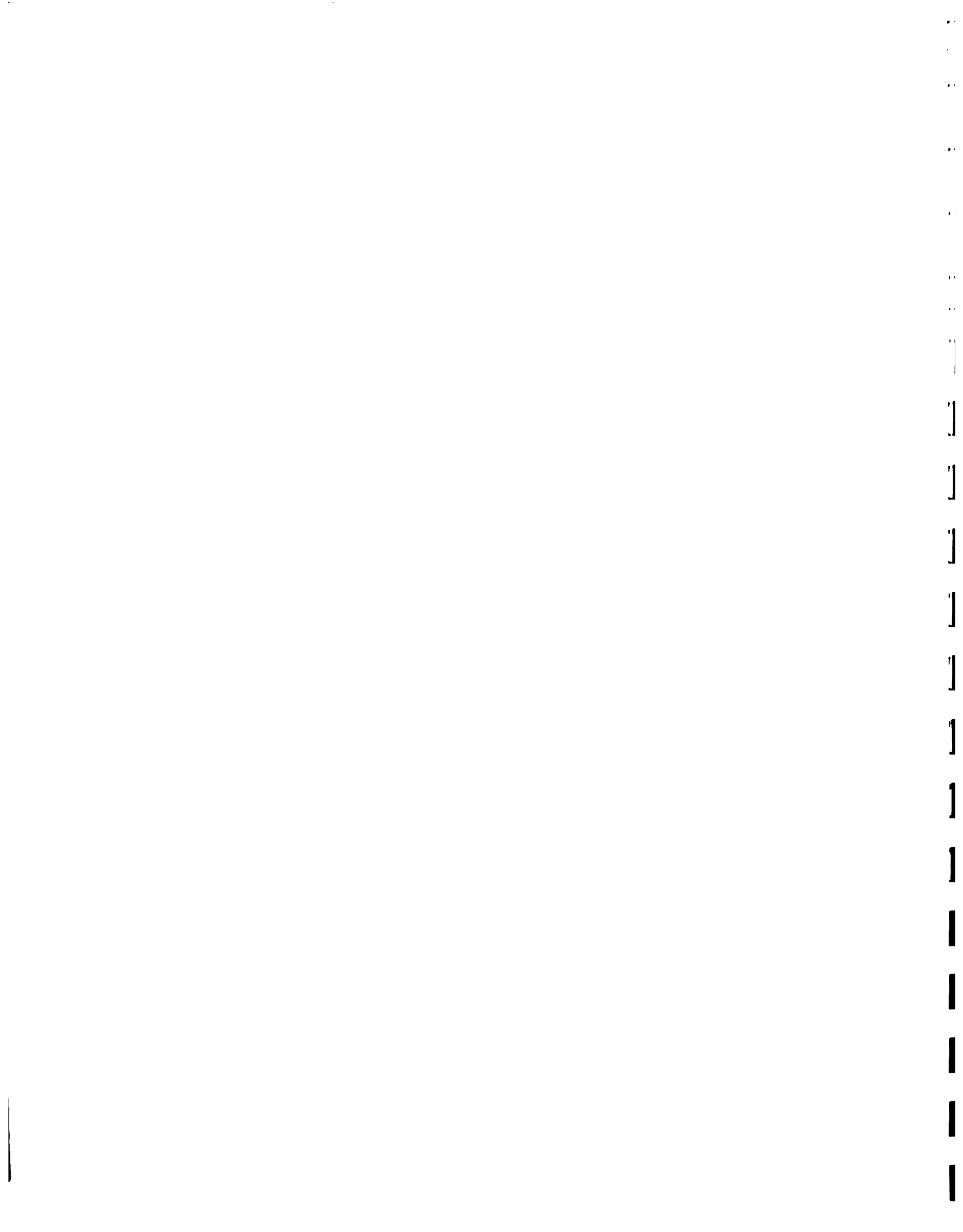
	1982	1983	1984	1985	1986	1987	1988	1989	1990
Net Foreign Assets	92.3	113.6	119.3	160.8	148.2	144.8	169.4	128.0	70.2
Domestic Credit	492.9	531.9	569.6	564.7	584.1	650.8	705.3	771.8	917.6
Government (Net)	130.4	124.3	136.3	114.0	117.2	141.2	145.0	131.8	252.0
Private Sector	362.4	407.5	433.4	450.8	466.9	509.6	560.3	640.0	665.6
Other Items	99.2	123.3	123.9	123.0	82.0	55.4	27.5	33.7	2.9
Total Monetary Liabilities	486.1	522.2	565.0	602.6	650.4	740.2	847.1	865.5	990.4
Money Supply (Net) M1	126.2	146.7	139.8	157.3	191.6	228.2	287.4	257.3	300.8
Currency	49.5	54.5	45.9	46.5	60.9	70.6	85.7	91.3	96.4
Demand Deposits	76.6	92.2	94.0	115.9	130.7	157.7	201.7	165.9	204.4
Quasi Money M2	353.0	367.6	414.3	430.0	448.9	501.4	559.8	608.2	689.5
	479.1	514.3	554.1	592.4	640.4	729.6	847.1	865.5	990.4
Memorandum Item	995.0	1056.3	1151.4	1205.0	1323.0	1456.8	1548.5	1707.0	1711.5
Current GDP (a.p.)									
(PERCENTAGE OF GDP)									
Net Foreign Assets	9.3	10.8	10.4	13.3	11.2	9.9	10.9	7.5	4.1
Domestic Credit	49.5	50.3	49.5	46.9	44.2	44.7	45.5	45.2	53.6
Government (Net)	13.1	11.8	11.8	9.5	8.9	9.7	9.4	7.7	14.7
Private Sector	36.4	38.6	37.6	37.4	35.3	35.0	36.2	37.5	38.9
Other Items	10.0	11.7	10.8	10.2	6.2	4.8	1.8	1.2	0.2
Total Monetary Liabilities	48.8	49.4	49.1	50.0	49.2	50.8	54.7	50.7	57.9
Money Supply (Net) M1	12.7	13.9	12.1	13.5	14.5	15.7	18.6	15.1	17.6
Currency	5.0	5.2	4.0	3.9	4.6	4.8	5.5	5.4	5.6
Demand Deposits	7.7	8.7	8.2	9.6	9.9	10.8	13.0	9.7	11.9
Quasi Money M2	35.5	34.8	36.0	35.7	33.9	34.4	36.2	35.6	
	48.2	48.7	48.1	49.2	48.4	50.1	54.7	50.7	57.9
Memorandum Item	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Current GDP (a.p.)									



BARBADOS
TABLE B1.6
SECTORAL DISTRIBUTION OF LOANS AND ADVANCES, 1982-1990
(US\$ million)

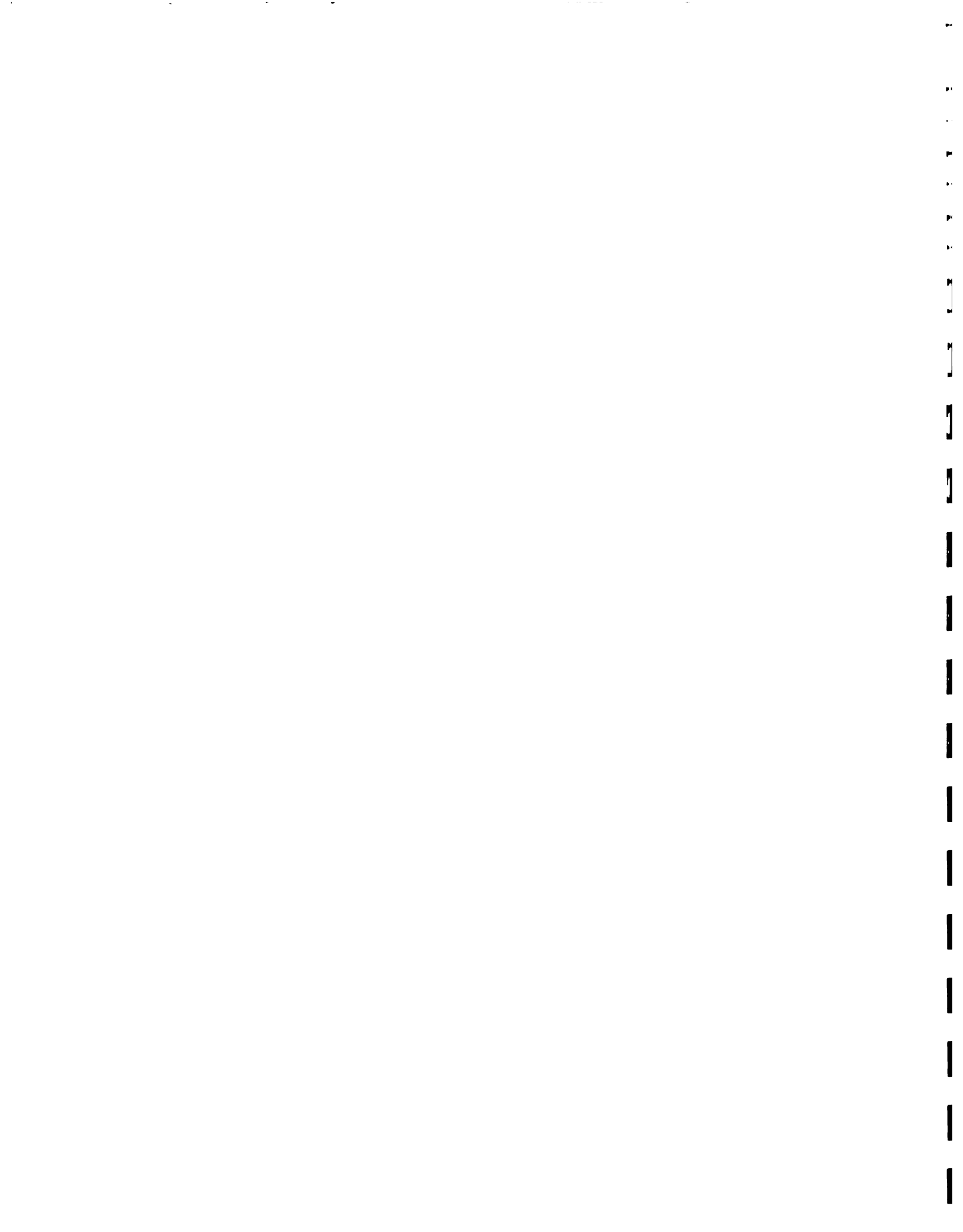
	1982	1983	1984	1985	1986	1987	1988	1989	1990
Agriculture and Fishing	16.3	19.5	19.4	17.6	17.4	14.3	13.2	14.9	15.2
Manufacturing	57.8	60.5	61.6	58.1	56.1	57.9	65.7	74.8	86.8
Distribution	46.4	57.0	53.7	57.6	67.3	76.0	93.5	119.8	102.3
Tourism and Entertainment	57.3	59.8	58.0	59.6	52.0	53.2	50.7	50.1	56.3
Transport	12.4	12.8	14.1	17.9	21.9	34.5	24.0	34.5	35.8
Construction	16.1	15.4	17.8	17.3	17.3	18.5	17.9	23.4	24.6
Personal	65.5	76.4	80.2	86.4	99.0	115.7	141.5	148.8	141.9
Public Utilities	18.8	29.1	29.8	34.0	37.8	40.3	23.3	17.9	11.4
Professional and Other Service	17.4	18.1	21.3	18.6	20.2	23.6	33.0	39.4	41.3
Other	32.1	39.5	47.6	57.3	51.2	46.2	61.1	75.5	108.3
Total	340.1	388.1	403.7	424.4	440.0	480.0	523.8	599.1	623.8
(PERCENTAGE OF GDP)									
Agriculture and Fishing	4.8	5.0	4.8	4.1	3.9	3.0	2.5	2.5	2.4
Manufacturing	17.0	15.6	15.3	13.7	12.7	12.1	12.5	12.5	13.9
Distribution	13.6	14.7	13.3	13.6	15.3	15.8	17.9	20.0	16.4
Tourism and Entertainment	16.8	15.4	14.4	14.0	11.8	11.1	9.7	8.4	9.0
Transport	3.7	3.3	3.5	4.2	5.0	7.2	4.6	5.7	5.7
Construction	4.7	4.0	4.4	4.1	3.9	3.9	3.4	3.9	3.9
Personal	19.3	19.7	19.9	20.4	22.5	24.1	27.0	24.8	22.7
Public Utilities	5.5	7.5	7.4	8.0	8.6	8.4	4.4	3.0	1.8
Professional and Other Service	5.1	4.6	5.3	4.4	4.6	4.9	6.3	6.6	6.6
Other	9.4	10.2	11.8	13.5	11.6	9.6	11.7	12.6	17.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Central Bank of Barbados. Annual Statistical Digests.



BARBADOS
TABLE B1.7
COMMERCIAL BANK INTEREST RATES (%), 1982 - 1990

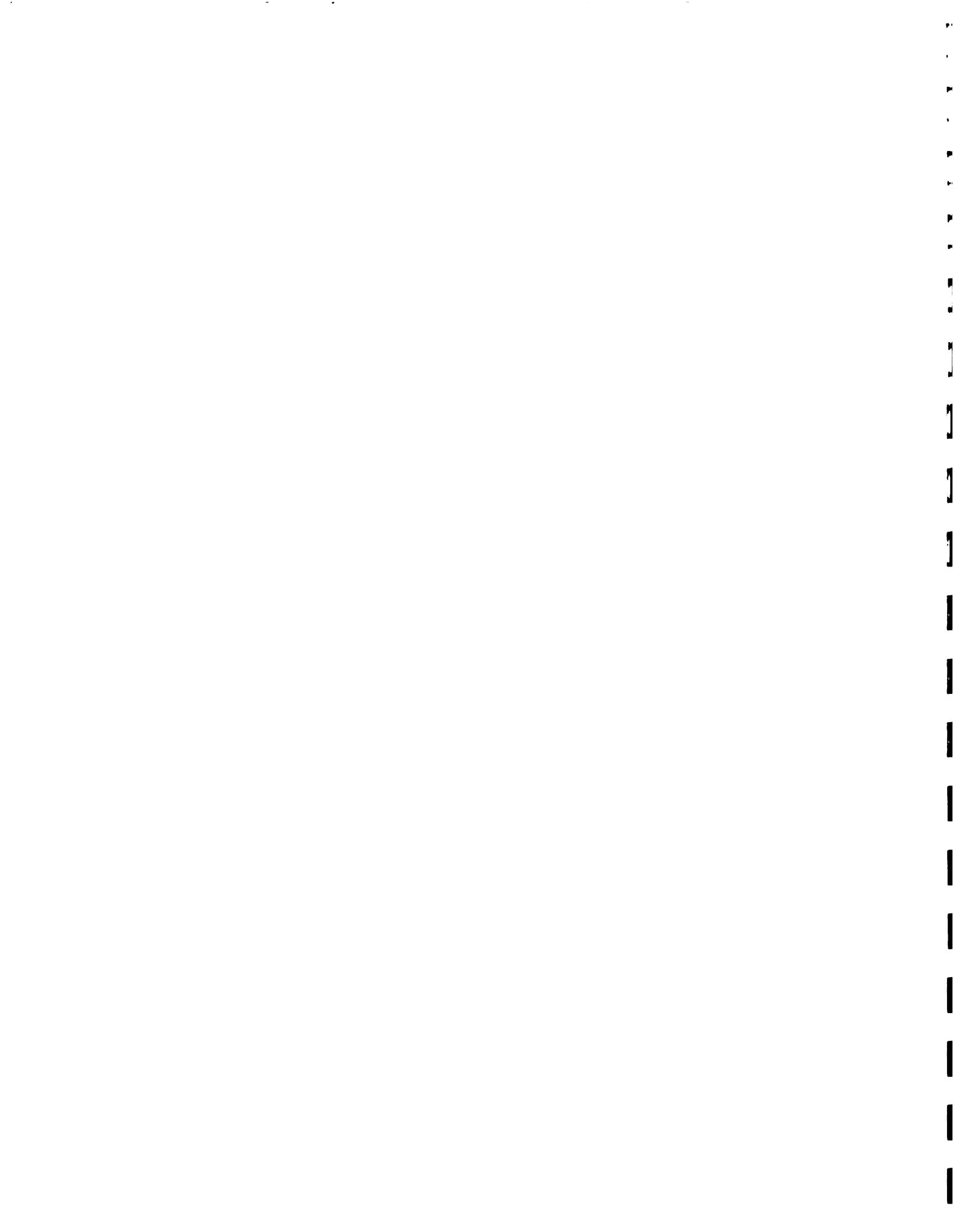
ITEM	D E C E M B E R 31									
	1982	1983	1984	1985	1986	1987	1988	1989	1990	
DEPOSIT										
Savings	6.0	5.0-5.5	5.0-5.5	4.0-4.5	3.0	3.0	4.0	6.0	5.5	
Time										
3 months	8.0	6.0	6.2	4.8	3.5	3.7	4.5	6.3	6.1	
6 months	6.4-9.5	5.5-7.5	5.0-7.0	4.0-5.5	3.0-4.0	3.0-5.0	3.5-4.5	6.0-7.5	5.5-6.5	
12 months	6.5-10.0	6.0-8.0	6.0-7.0	4.25-5.5	3.0-5.0	3.0-6.0	3.5-5.0	6.25-8.0	5.5-7.5	
	7.0-10.5	6.0-8.0	6.0-7.5	4.6-5.5	3.0-6.0	3.0-7.0	3.75-5.75	6.5-8.5	5.5-8.0	
LOAN RATES										
Prime Rate	10.0-14.0	10.0-11.5	10.0-11.5	8.75-9.5	8.25-8.75	8.25-8.75	9.0-9.5	11.0-12	10.25-11.0	
Average Rate										
Fixed by Central Bank	13.0	11.5	12.0	10.0	9.5	9.5	10.5	18.5	11.5	
Actual	13.5	11.9	12.0	10.9	10.2	10.3	11.1	12.7	12.1	



BARBADOS
TABLE B1.8
CENTRAL GOVERNMENT FINANCIAL OPERATIONS, 1982 - 1990
(US\$ MILLION)

	1982	1983	1984	1985	1986	1987	1988	1989	1990
1. Current Revenue	242.6	279.2	280.4	311.1	329.1	350.1	409.5	501.2	465.6
1.1 Tax Revenue	214.7	239.5	245.0	284.5	290.4	297.8	345.2	461.8	435.9
Direct Tax	112.0	111.8	106.4	121.0	103.4	83.0	113.6	151.7	146.6
Income	94.9	99.4	94.6	99.4	86.6	66.7	93.2	126.1	127.0
Property	17.6	12.4	11.9	21.6	16.7	16.3	20.4	25.6	19.6
Employer's Levy	-0.5		-0.1		0.1				
Indirect Tax	102.7	127.7	138.6	163.5	187.0	214.8	231.6	310.1	289.3
Sales	58.8	70.3	76.6	79.9	91.9	105.7	126.3	153.6	141.6
External Sector	36.7	45.2	42.0	47.4	54.2	58.9	59.2	65.2	56.2
Others	7.2	12.2	20.0	36.2	40.9	50.2	46.1	91.3	91.5
1.2 Non-Tax Revenue	27.9	33.4	35.4	26.6	38.7	52.3	64.3	39.4	29.7
2. Total Expenditures	292.9	303.8	327.8	373.4	409.5	441.4	466.0	523.4	589.1
2.1 Current Expenditure	230.8	243.1	266.3	304.8	321.0	350.7	378.5	424.0	469.1
Wages and Salaries	98.3	103.3	115.6	129.9	149.0	158.2	170.4	MA	MA
Goods and Services	26.3	29.7	30.1	34.2	34.6	36.7	47.5	MA	MA
Indirect Payments	33.3	31.3	30.9	34.8	41.7	46.2	54.8	MA	MA
Transfers and Subsidies	72.9	78.8	89.7	106.9	95.7	109.6	105.8		
2.2 Capital Expenditures	62.1	60.7	61.5	68.6	88.5	90.7	87.5	99.4	120.0
Capital Formation	35.5	35.1	42.1	48.8	68.3	61.0	59.0	MA	MA
Capital Transfers	26.6	25.6	19.4	19.8	20.2	29.7	28.5	MA	MA
3. Current Account Balance	11.8	29.8	14.1	6.3	8.1	(0.6)	39.1	77.2	(3.5)
4. Overall Balance	(50.3)	(30.9)	(47.4)	(62.3)	(80.4)	(91.3)	(56.5)	(22.2)	(123.5)
5. Total Financing	50.3	30.9	47.4	62.3	80.4	91.3	56.5	2.2	123.5
Domestic	28.6	17.3	28.9	2.2	16.0	42.9	8.5	6.7	128.9
Foreign	13.4	29.7	8.4	38.8	54.0	70.2	38.5	13.5	(3.0)
Other	8.3	16.1	10.1	21.3	10.4	(21.8)	9.5	2.0	(2.4)
6. GDP (Market Prices)	995.2	1106.9	1151.9	1210.8	1324.9	1459.2	1550.0	1708.4	1712.2

SOURCE: Central Bank of Barbados



BARBADOS
TABLE B1.9
CENTRAL GOVERNMENT FINANCIAL OPERATIONS, 1982 - 1990
(As Percentage of GDP)

	1982	1983	1984	1985	1986	1987	1988	1989	1990
1. Current Revenue	24.4	24.7	24.4	25.8	24.9	24.0	25.9	29.3	27.2
1.1 Tax Revenue	21.6	21.6	21.3	23.6	21.9	20.4	22.3	27.0	25.5
Direct Tax	11.3	10.1	9.2	10.0	7.8	5.7	7.3	8.9	8.6
Income	9.5	9.0	8.2	8.2	6.5	4.6	6.0	7.4	7.4
Property	1.8	1.1	1.0	1.8	1.3	1.1	1.3	1.5	1.2
Employer's Levy	-0.1								
Indirect Tax	10.3	11.5	12.0	13.6	14.1	14.7	15.0	18.1	16.9
Sales	5.9	6.4	6.6	6.6	6.9	7.3	8.2	9.0	8.3
External Sector	3.7	4.0	3.7	3.9	4.1	4.0	3.8	3.8	3.3
Others	0.7	1.1	1.7	3.0	3.1	3.4	3.0	5.3	5.3
1.2 Non-Tax Revenue	2.8	3.1	3.1	2.2	2.9	3.6	4.2	2.3	1.7
2. Total Expenditures	29.4	27.4	28.5	31.0	31.0	30.3	29.5	30.6	34.4
2.1 Current Expenditure	23.2	22.0	23.1	25.3	24.3	24.1	24.0	24.8	27.4
Wages and Salaries	9.9	9.3	10.0	10.8	11.3	10.9	11.0	NA	NA
Goods and Services	2.6	2.7	2.6	2.8	2.6	2.7	3.1	NA	NA
Indirect Payments	3.3	2.8	2.7	2.8	3.2	3.2	3.5	NA	NA
Transfers and Subsidies	7.3	7.2	7.8	8.9	7.2	7.3	6.8		
2.2 Capital Expenditures	6.2	5.4	5.3	5.7	6.7	6.2	5.7	5.8	7.0
Capital Formation	3.6	3.2	3.7	4.0	5.2	4.2	3.8	NA	NA
Capital Transfers	2.7	2.2	1.7	1.6	1.5	2.0	1.9	NA	NA
3. Current Account Balance	1.2	2.7	1.2	0.5	0.6	(0.0)	2.0	5.8	(2.0)
4. Overall Balance	(5.1)	(2.8)	(4.1)	(5.2)	(6.1)	(6.3)	(3.6)	(1.3)	7.2
5. Total Financing	5.1	2.8	4.1	5.2	6.1	6.3	3.6	1.3	7.2
Domestic	2.9	1.6	2.5	0.2	1.2	2.9	0.5	0.4	7.5
Foreign	1.3	2.7	0.7	3.2	4.1	4.8	2.5	0.8	(0.2)
Other	0.8	(1.5)	0.9	1.8	0.8	1.5	0.6	0.1	(0.1)
6. GDP (Market Prices)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Central Bank of Barbados



BARBADOS
TABLE B1.10
CAPITAL FLOWS AND OFFICIAL FINANCING, 1986 - 1990
(US\$ 000)

	1982	1983	1984	1985	1986	1987	1988	1989	1990
Current Balance	-42134	-50642	11186	40525	-15898	-53520	2329	-2636	-37553
Investment and other capital									
Flows	38549	51779	-15115	-5251	15844	92472	47664	4935	45972
Long-term investment	8921	22166	-17809	11549	12752	70569	31307	625	31618
Public sector	11851	28733	5859	28706	53716	76286	43239	14218	11730
Loans and suppliers' credits	14721	30187	8961	39388	54741	76689	40703	13718	8989
Other	2871	-1454	-3102	-10682	-1025	97	2537	500	2741
Private Sector	-2930	-6567	-23668	-17157	-40964	-6217	-11932	-13593	19888
Direct investment	4104	2288	-1438	2606	5029	4606	10632	5446	9842
Portfolio investment	-7034	-8855	-22230	19763	-45993	-10823	-22564	-19039	10046
Short-term capital	11817	4020	2940	-34269	14733	17786	9078	3176	5029
Public sector	-1613	12	-1056	-370	-375	-597	-492	-495	-522
Trade credits	12838	3861	6349	-29565	21499	10451	-3323	-21470	7696
Other short-term	592	147	-2353	-4335	-6392	7932	12893	25140	-2145
Other capital flows	17812	25594	-246	17470	-11641	4117	7279	1135	9326
Central Bank	12265	11263	594	700	-3213	-9053	822	-2130	609
Commercial banks	5547	14331	840	16770	-8429	13125	6458	3264	8718
Capital transfers									
Errors and omissions	10785	5521	2890	9013	3149	-18712	-14158	-38052	-59505
Balance for official financing	7200	6658	1040	44287	3095	20241	35836	-35753	-51085
Official financing transactions	23709	14657	3635	-3367	-13550	-23034	-11239	-6546	2043
IMF	25209	15657	7635	300	-12883	-15367	-9739	-6546	-3604
Other monetary authorities	-1500					-1000	-1500		5647
Other financial institutions		-1000	-4000	-3667	-667	-6667			
Reserve movements (-increase/ +decrease)	30909	-21315	-4674	-40921	10455	2793	-24597	42299	49042
Allocation of SDRs	845	575	297	16	5	-827	182	642	-9
Reserve tranche subscription to IMF	-6043	-2342	90	114	-405	-311	-183	194	-22

SOURCE: Central Bank of Barbados

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BARBADOS
TABLE B1.11
INDEX OF INDUSTRIAL PRODUCTION 1982 - 1990
(Averages for Period)

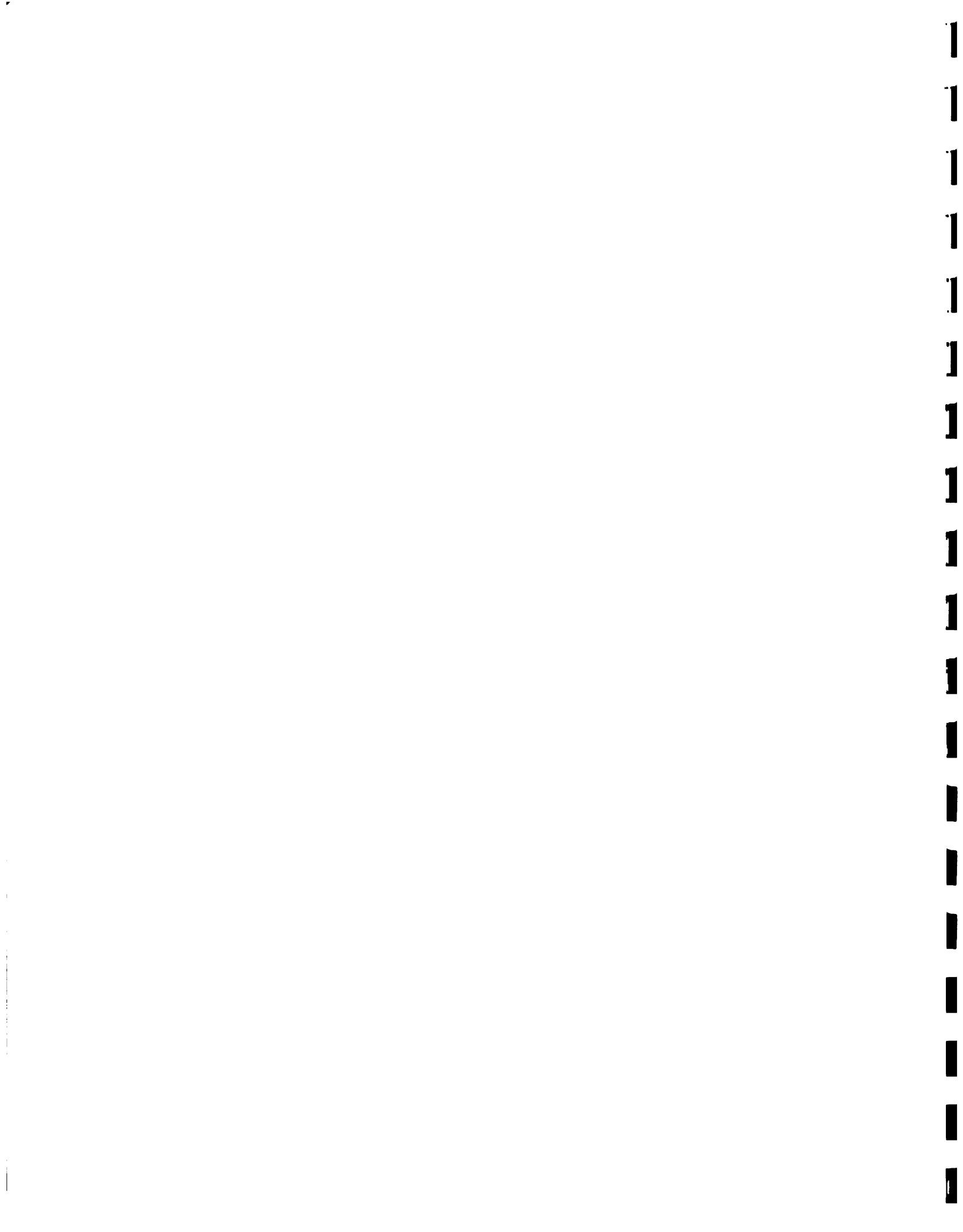
ITEM	WEIGHTS	1982	1983	1984	1985	1986	1987	1988	1989	1990
ALL INDUSTRIES	1000	100.0	104.4	108.2	104.6	110.1	104.7	111.1	115.0	112.0
Mining and quarrying	53	100.0	118.5	161.6	174.0	163.2	151.0	141.3	132.9	139.0
MANUFACTURING	845	100.0	102.1	103.2	97.2	103.4	97.2	103.9	108.6	103.0
Food	156	100.0	99.3	99.7	101.3	109.7	115.6	109.3	106.8	113.0
Beverages and Tobacco	97	100.0	98.1	90.4	90.9	90.5	98.4	101.7	104.6	114.0
Wearing Apparel	122	100.0	106.2	110.7	93.4	75.1	86.9	90.6	71.6	42.0
Wooden Furniture	46	100.0	117.3	115.9	101.5	109.5	70.3	89.5	109.0	102.0
Chemicals	18	100.0	97.2	83.9	74.7	85.1	115.4	122.6	129.6	99.0
Petroleum Products	29	100.0	97.5	99.5	103.7	116.1	119.7	149.3	187.7	143.5
Non-Metallic Mineral Products	34	100.0	85.3	77.8	87.2	112.9	129.5	140.1	150.7	133.0
Electronic Components	233	100.0	108.2	141.0	133.3	136.3	44.6	46.8	51.2	42.5
Other Manufacturing	110	100.0	102.8	95.2	87.0	104.4	110.9	125.6	140.5	150.0
Electricity and Gas	102	100.0	116.1	121.7	130.2	137.1	142.7	154.9	159.3	160.0

SOURCE: Barbados Statistical Service

BARBADOS
TABLE B1.12
TOURISM STATISTICS, 1984 - 1985

ITEM	1984	1985	1986	1987	1988	1989	1990
NO. OF VISITORS ('000)	466.8	471.3	515.2	646.5	742.5	808.0	803.1
of which: cruise ship visitors	99.1	112.2	145.3	224.8	291.0	346.7	356.1
Stopover Visitors	367.7	359.1	369.9	421.7	451.5	461.3	446.9
USA	140.2	148.1	166.3	175.1	170.8	154.3	158.3
Canada	67.3	70.6	60.3	64.3	65.7	65.6	58.4
United Kingdom	46.3	38.8	47.6	79.1	101.2	118.1	94.9
CARICOM	84.2	71.7	61.5	63.4	63.4	61.7	61.6
Other Countries	13.2	13.6	34.2	39.8	50.4	61.6	73.7
AVERAGE LENGTH OF STAY (DAYS)	7.1	6.3	6.5	6.5	6.7	7.1	6.7
Total Visitor Expenditure (BD\$mn)			647.4	757.4	981.6	1052.5	940.0
Average Expenditure per Visitor (BD\$)			1257	1172	1237	1303	1171
Average Expenditure per visitor per Day (BD\$)			253.9	255.4	277.0	290.6	280.6
HOTEL BED OCCUPANCY RATE (%)	45.1	39.5	47.0	55.3	60.0	62.7	55.6
Luxury hotels	51.0	52.0	57.1	64.2	70.0	65.5	NA
Class A hotels	42.3	50.9	52.9	52.3	49.0	59.4	NA
Class B hotels	22.5	20.2	16.6	18.8	26.1	30.1	NA
Guest houses	24.7	22.0	26.5	36.7	37.3	40.1	NA
Apartment hotels	55.1	34.1	50.7	57.9	62.8	69.7	NA
Apartments	36.8	30.0	39.9	54.2	57.2	58.5	NA
HOTEL ROOM OCCUPANCY RATE (%)	57.0	43.9	48.3	57.1	63.9	64.3	58.2

SOURCE: Barbados Statistical Service



BARBADOS
TABLE B2.1
LAND TENURE BY SIZE GROUP, NUMBER OF HOLDINGS,
NUMBER OF PARCELS AND AREAS, 1971

Farm Size (Acres)	Holdings		Acres		Acres/holdings (Aver.)
	Number	%	Acres	%	
Landless (Holding without land)	13159	50.0	-	-	
0-1	9298	35.7	3268	4.4	0.35
1 - 5	3170	12.2	5302	7.2	1.67
5 - 10	161	0.6	1012	1.4	6.29
10 - 25	68	0.3	993	1.3	14.60
25 - 50	23	0.1	792	1.1	34.43
50 - 100	16	0.1	1249	1.7	78.06
100 - 200	31	0.1	4752	6.4	153.29
200 - 500	80	0.3	24767	33.5	309.59
500 and more	46	0.2	31860	43.0	692.61
TOTAL	26052	100.0	73995	100.0	2.84*

SOURCE: Barbados Census of Agriculture, 1971

BARBADOS
TABLE B2.2
PRODUCTION OF SELECTED AGRICULTURAL COMMODITIES 1980 - 1989

COMMODITIES	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Export Crops										
Sugar ('000)	137	98	86	83	100	100	111	83	80	66
Cotton ('000 kg)					7	37	128	173	119	96
Root Crops (000 kg)										
Yams	4400	4064	4500	4500	3195	2943	1989	2462	1365	2412
Sweet Potatoes	2900	3048	3700	4300	1957	2066	2192	3578	2478	2537
Vegetables (000 kg)										
Onions	520	396	476	764	549	776	468	568	218	540
Peanuts			10	18	22	52	261	35		
Beets	521	507	480	509	230	358	258	325	185	286
Pumpkins	516	527	493	576	208	362	335	556	395	160
Carrots	2395	2145	2416	2600	1099	884	985	1561	1380	1769
String Beans	500	510	509	533	384	340	409	546	577	521
Tomatoes	1636	1055	1208	1300	496	372	434	552	595	577
Cucumbers	819	1808	1700	2000	307	321	299	445	402	431
Cabbage	1717	1399	1577	170	1074	767	944	791	684	413
Other Vegetables		1307	1193	1347	1603	382	165	32	502	479
Total Vegetables	8624	9654	10062	9817	5972	4614	4558	5411	4938	5176
Livestock and Dairy Products ('000 kg)										
Pork		942	1300	713	755	938	1193	1296	1176	1066
Beef		386	326	326	274	245	308	397	390	832
Mutton		50	21	30	21	22	21	25	23	34
Poultry*		6000	6700	6133	6673	6437	7430	8182	9000	10733
Eggs		NA	1567	1047	1880	1287	1352	1830	1524	1509
Milk		7100	7041	7758	8730	9331	10571	11735	11840	12822



MONTserrat

CHAPTER V

5. GENERAL ECONOMIC REVIEW

5.1 Introduction

Montserrat is part of the Lesser Antilles island chain, the surface manifestation of an undersea ridge formed at the boundary of the Caribbean and Atlantic plates. The ridge connects Venezuela in the South with Puerto Rico and the Greater Antilles in the North. Montserrat is situated at 16°40' north and 62°10' west and has a total area of 102km², with a population of approximately 12,000 people.

5.2 Recent Economic Performance

Economic activity in Montserrat expanded at an average rate of about 8.0% during the period 1985 to 1988. This growth momentum was however, interrupted by the passage of Hurricane Hugo which devastated the island in 1989 causing severe damage to infrastructure, and resulting in substantial losses both in the public and private sectors. An estimated 90% of the housing stock was either partially or totally destroyed. However, continued reconstruction efforts following the hurricane, increased investment and improved fiscal management contributed to a strong growth performance in 1990. It is estimated that real growth remained in double digits in 1990. GDP figures are presented in Annex C - Tables C1.1 to C1.3

Output in the agricultural sector fell substantially in 1989, as livestock and crop production were severely affected by the hurricane, and significant damage to fishing boats and the loss of fishing gear were sustained. Similarly, output in the manufacturing sector contracted, as production was halted by damage to plant and equipment.

Activity in the tourism sector was disrupted for a period, as the main hotels also suffered severe structural damage. This sector, in the period January to July 1989, improved significantly, with stay-over visitors increasing by as much as 8.8% to 11,924, although a marked decrease had occurred in the less lucrative excursion category. By year-end, most of the villas and roughly one-third of hotels capacity had been restored and for the 1989/90 winter season an estimated 50% of pre-hurricane room capacity was available. Tourism improved in 1990 as more hotels and villas became operational, and preliminary estimates indicate a rise in visitors arrivals. An increase in tourism earning coupled with rising capital inflows associated with reconstruction contributed to an improvement in the balance of payments.

The construction, wholesale and retail and government sectors were the only sectors exhibiting significant growth in 1989. Activity in the construction sector, which was already high prior to the hurricane, intensified with the rehabilitation effort; and benefitted from substantial inflows arising out of insurance claims as well as an expansion in bank lending for house construction and/or renovation. Strong reconstruction efforts continued into 1990.

During 1989, the rate of inflation as measured by the Consumer Price Index was 1.8%, compared with 3.6% of the previous year. Inflation is estimated to have slowed down even further in 1990 from its strong growth in 1988.

Economic activity in 1991 is expected to place considerable emphasis on infrastructural development and the continuation of reconstruction activities. The Government of Montserrat (GOM) plans to begin implementation of at least one major project - construction of the new Plymouth Port Jetty - during the year. It is anticipated that GOM will intensify efforts to improve fiscal savings, and thereby increase its contribution to financing these capital expenditures. It is also expected that the size of wage awards, especially in the construction sector, will moderate with the completion of major hurricane rehabilitation works. Hence, other things being equal, retail price increases should dampen.

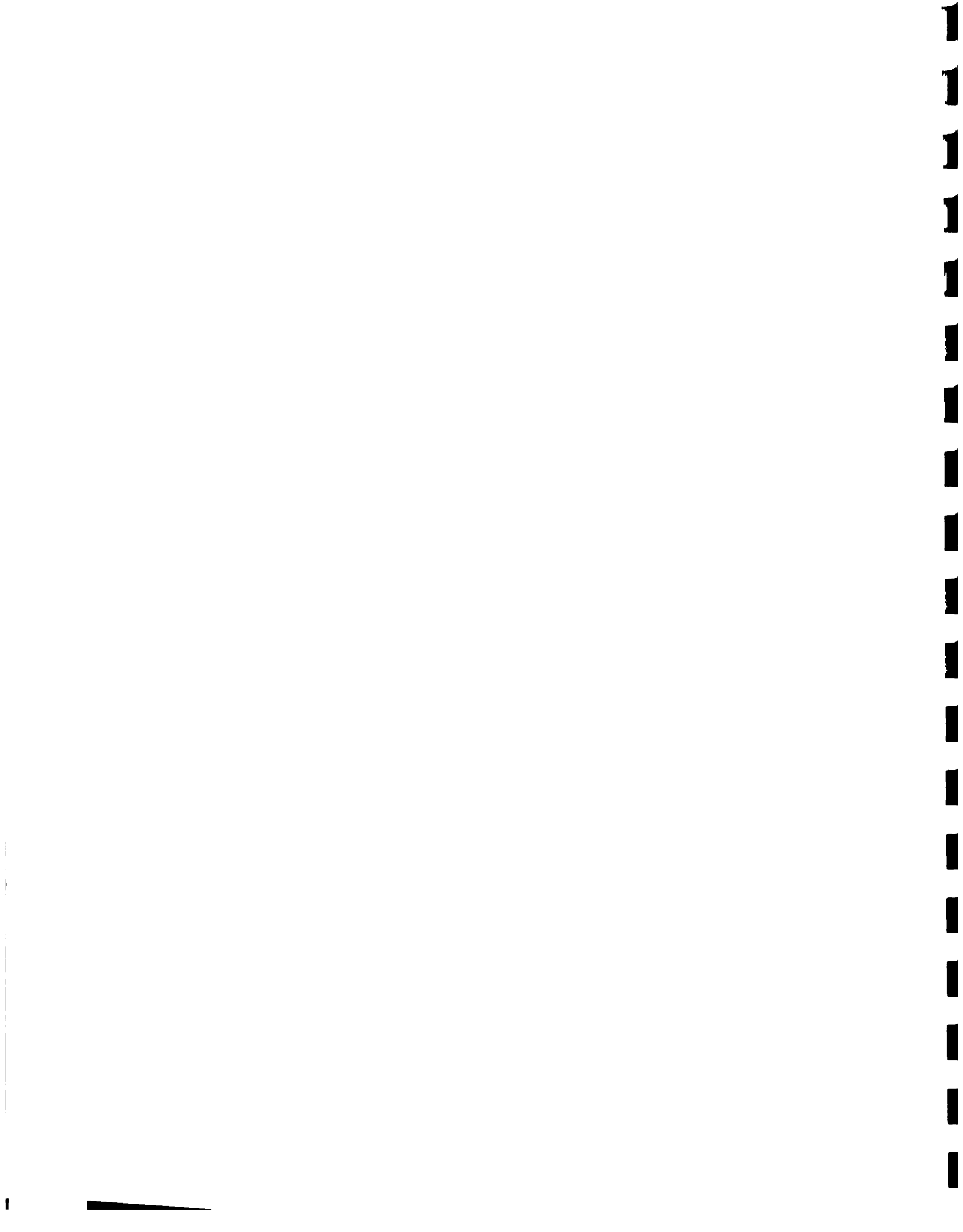
5.3 Sectoral Distribution

5.3.1 Agriculture

The agricultural sector still remains an important sector in the economy of Montserrat, despite the relative growth in importance of construction, tourism and service sectors in the last decade. During the period 1980 to 1988 real agricultural GDP grew at an average annual rate of 4.5%, although its contribution to real output fell marginally from 3.8% of GDP in 1980 to 3.7% in 1988.

The increase in real agricultural output between 1980 and 1988 reflects to a large extent, the continued strong performances of the crop, production and fishing sub-sectors. Growth in these two major subsectors was, however, interrupted by Hurricane Hugo in 1989 which severely destroyed crops and caused significant damage to fishing boats and loss to fishing gear.

Agricultural output in 1990 benefitted from rehabilitation efforts as farmers sought to restore production. Production of sweet potatoes, white potatoes and cucumbers was almost completely restored to pre-hurricane levels by the year end. Mango, guava and tamarind trees were replanted; but, given the long gestation periods for these crops, there were delays in the recommencement of operations at the agro-processing plant.



The government of Montserrat (GOM) need to clearly identify the role of agriculture in the process of development. The absence of a long-term development plan for the sector is a major constraint, while high production costs associated with increased wage rate have dampened the possibilities for exports. There is some scope for food import substitution and the development of the agro-processing industry. In terms of supplying the domestic market, local farmers are becoming increasingly competitive in the production of short-term crops, such as sweet potatoes, white potatoes, string beans and cucumbers. The main constraint is the relatively low level of investment in agricultural infrastructure and the weak marketing infrastructure.

The development of the agro-processing industry was hampered by the hurricane which resulted in a loss of the supply of several crops, for example, mangoes, guavas and tamarind. Despite this setback, GOM should continue to look for new activities in the subsector. The long-run growth of agro-processing will depend, to a large extent, on:

- a. adequate institutional support;
- b. fiscal incentives, that is, duty-free status for imported equipment in key industries;
- c. extension services;
- d. development of local technical expertise and adequate research and development facilities; and
- e. entrepreneurial training.

The fishing subsector experienced incremental improvements because of increased interest in deep sea fishing. Recent infrastructural support, such as the provisions of ice and small locker facilities at most sites, and training of fishermen in deep sea fishing techniques, has provided a stimulus for the industry. Notwithstanding these developments, there continue to be strong environmental concerns related to the discharge of treated effluent into the sea. It is imperative that GOM promotes strict adherence to the environmental codes.

5.3.2 Tourism

The tourist sector emerged as a major economic activity in 1964 when the number of visitors to Montserrat increased dramatically with the construction of winter homes for North Americans. Jobs were created for men in construction, but also for women as cooks and maids. Directly and indirectly the sector has contributed to economic growth, created employment and generated much needed foreign exchange. Figures presented in Annex C - Table c1.1 show that the trade and tourism share of GDP increased from

16.3% in 1980 to 20.2% in 1988. Employed labour force in the sector increased from 550 persons in 1980 to 659 persons in 1988. Real growth rate in the sector averaged 6.8% annually between 1980 and 1988.

Tourist arrivals have increased substantially from 20,500 in 1980 to 30,300 in 1988, and despite a fall in 1983, arrivals numbers continue to show a strong upward trend. Much of this is attributable to the dramatic increase in cruise ship visitors arrivals experienced between 1984 (4,300 visitors) and 1988 (10,200 visitors). Tourist expenditures reflect the period upward trend, increasing from US\$4.3 million in 1980 to US\$10.8 million in 1988. Tourism industry time series data is presented in Annex c - Tables C1.4.

As stated earlier, activity in the tourism sector was disrupted by Hurricane Hugo in 1989, as the main hotels suffered severe structural damages. However, by the end of 1989, most of the villas and roughly one-third of hotel capacity had been restored and the performance of the sector improved in 1990. Preliminary estimates indicate that there was a significant increase in visitor arrivals and a shift in the composition of arrivals (See Annex C - Table C1.5). The proportion of long-stay visitors increased simultaneously with a decline in the number of excursionists. The fall off in excursionists was traced primarily to hurricane damage to the port facilities. However, the shift to long-stay visitors is an encouraging trend since they tend to make a substantially larger foreign exchange contribution to national income than excursionists. The increase in arrivals did not lead to a shift in market shares for individual countries. (Annex C - Table C1.6)

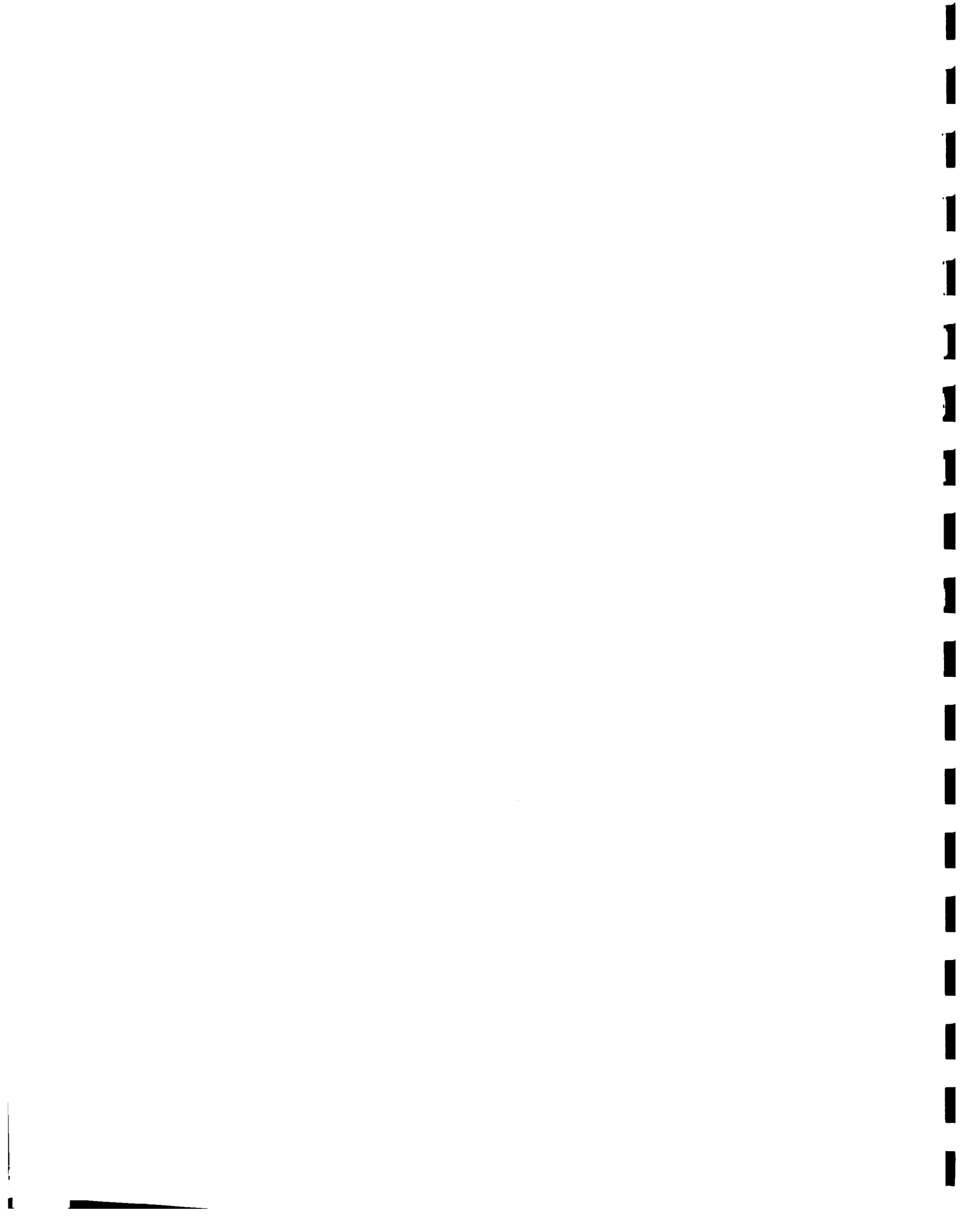
Montserrat's tourism industry is dependent on retiree and/or resident expatriates. In the medium term, retirees will continue to play a vital role, but GOM is hoping to diversify its visitor base and expand its hotel capacity.

5.3.3 Construction

The expansion of tourism has given impetus to a rapid rise in construction activity. Real output in the construction sector increased by 108% between 1980 and 1988, with a 95% increase recorded between 1985 and 1988. Construction sector activity intensified with the rehabilitation effort after Hurricane Hugo and benefitted from substantially inflows arising out of insurance claims as well as an expansion in bank lending for house construction and/or renovation.

5.3.4 Services Sector

The services sector continues to be the largest contributor to GDP. Its performance between 1980 and 1988 however, reflects a



steady decline in its relative contribution to total GDP, from 42.0% in 1980 to 36.8% in 1988. Real growth of 11.9% was recorded between 1980 and 1988.

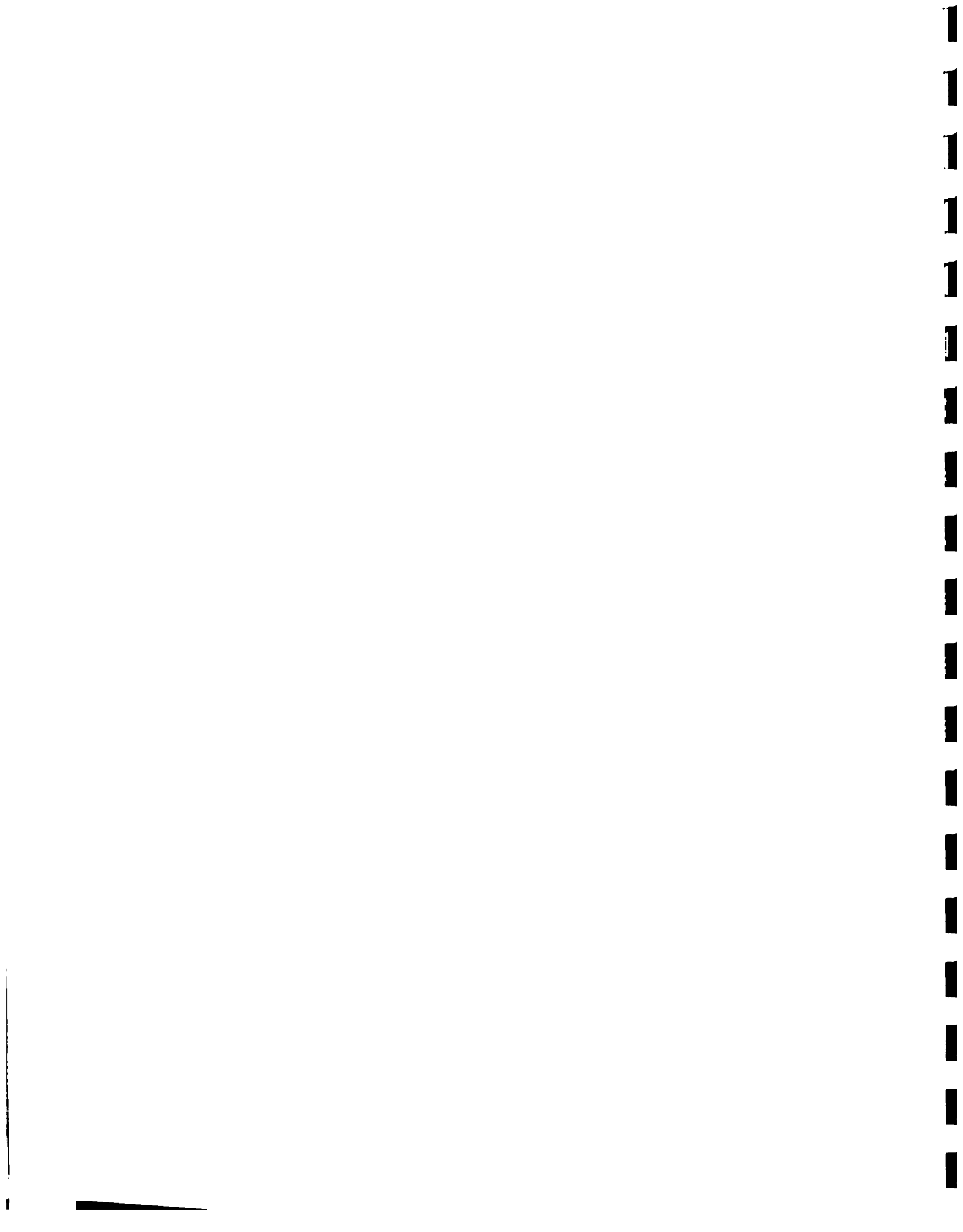
5.4 Trade and Balance of Payments

Figures available indicate a mark improvement in the current account of the balance of payments, which moved from a surplus of US\$8.3 million in 1988 to a surplus of US\$25.7 million at the end of 1989 (Table 5.1). This strengthening of the current account position reflected, mainly, inflows on services account and net transfers. The capital account of the balance of payments, however, deteriorated due to the operations of the commercial banks which resulted in larger net capital outflows.

Between 1987 and 1989 the surplus on the services account rose by 100% due, in large measure, to the higher receipts for insurance claims for damages caused by Hurricane Hugo. However, between 1988 and 1989, net travel receipts were estimated to have declined by 22.3%, from US\$12.1 million (1988) to US\$9.4 million (1989), mainly on account of the decreased in tourism traffic following the hurricane damage sustained by hotels and other tourist infrastructure. Similarly, net transfers rose substantially, reflecting inflows of grants and technical assistance relating to hurricane relief and the reconstruction programme.

Improvements in the services balance and in net transfers were more than adequate to cover the widening trade gap, which increased by 36.5% between 1987 and 1989, from US\$18.1 million deficit (1987) to US\$24.7 million deficit (1989). Imports of US\$26.9 million in 1989 were 31.9% higher than in 1987 and reflected significant increased for machinery and transport equipment, manufactured goods and crude materials required for the hurricane recovery efforts. Exports, fell significantly by US\$1.3 million (37.1%) between 1988 and 1989. This was attributed to the continued decline of manufacturing, particularly the production of electricity, for electronic components destined for the United States market. Exports of agricultural produce which have also been declining, were further setback by the impact of the hurricane. External trade data, principal domestic exports by end use category, and merchandise imports are presented in Annex C - Tables C1.7, C1.8, C1.9 and C1.10 respectively.

In contrast to past experience, there were substantial net capital outflows during 1989 amounting to US\$10.4 million, as commercial banks accumulated net assets abroad. Inflows of other long-term capital, private and official, were estimated to have been of the order of US\$7.7 million.



The degree of openness of the Montserrat economy by Caribbean standard is considered low. Data available and presented in Table 5.2 shows that Montserrat is not highly dependent on the world economy.

TABLE 5.1
BALANCE OF PAYMENTS
(US\$M)

	1987	1988	1989
CURRENT ACCOUNT	8.3	8.3	25.7
Trade Balance	-18.1	-21.8	-24.7
Exports (F.O.B)	2.3	3.5	2.2
Imports (C.I.F)	20.4	25.3	26.9
Services Balance	10.2	11.9	20.4
Travel (Net)	10.4	12.1	9.4
Other Savings	-0.2	-0.2	11
Transfers (Net)	16.2	18.2	30.3
CAPITAL ACCOUNT	4.8	3.1	-10.4
Commercial Banks	-2.8	-5.1	-18.1
Other Long-term Capital (Private and Public)	7.6	8.2	7.7
Overall Balance	13.1	11.5	15.3
Financing			
Change in Imputed Reserves	-13.1	-11.5	-15.3

SOURCE: (a) ECCB
(b) Statistical Office

TABLE 5.2
OPENNESS OF THE ECONOMY
(US\$ Million)

	YEARS									
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Total Imports (M)	12.0	16.5	18.9	20.3	20.1	17.5	18.3	20.4	25.3	29.6
Total Export (X)	0.8	1.2	2.2	2.6	5.2	3.2	2.9	2.3	3.5	2.2
Total GDP	24.2	27.2	30.0	32.0	34.7	36.2	41.2	48.0	54.8	48.3
Degree of Openness (M+X)/GDP	0.5	0.7	0.7	0.7	0.7	0.6	0.5	0.5	0.5	0.7

5.5 National Debt

The external public debt of Montserrat is low compared to most other Caribbean countries. At the end of 1989 disbursed debt outstanding stood at US\$3.4 million compared to US\$3.0 million (1986), US\$3.4 million (1987), and US\$3.5 million (1988). Debt service payments for amortisation and interests have been

relatively low, averaging less than US\$0.3 million per year over the 1986-1989 period. Complete time series data on external debt covering the period 1980-85 is presented in Annex C - Table C1.11.

5.6 Money and Credit

Monetary developments during 1989 were marked by higher liquidity in the banking system, as unusually strong growth in deposits led to a sharp build-up in the net foreign assets of commercial banks. Total liquid assets rose from US\$13.7 million in 1988 to US\$27.9 million in 1989. As a result, the liquid assets ratio for the corresponding period rose from 45.8% to 52.9%, while the loans to deposits ratio fell from 57.8% to 44.2%. In the total liquid assets for 1989, US\$7.1 million was in the form of net claims on the Central Bank, while net balances with banks in the ECCB area constitute US\$5.6 and external assets US\$14.9.

At the end of 1989, the total deposit liabilities of the banking system stood at US\$43.9 million, reflecting an increase of US\$17.7 million (67.3%) over 1988. The growth in private sector deposits, which increased by US\$16.2 million (83%), was much stronger than in previous year when they grew by US\$3.6 million (22.3%). This expansion in private sector deposits was attributable to the activities of the household sector whose deposits rose by US\$10.1 million (85.7%), compared to US\$2.1 million (22.1%) in 1988. The build-up in these deposits mainly in the final quarter of the year, resulted in part from insurance settlement of claims for damage to property arising from the hurricane, and from the inflow of transfers from abroad. In 1989 the deposits of the statutory bodies grew by US\$3.6 million, a rate which was also significantly higher than in the previous year. In contrast, growth in business deposits of US\$1.8 million (38.8%) was slower than the 66.9% growth recorded in 1988.

The increase in private sector deposits was channelled mainly into demand accounts which rose by US\$8.6 million. Savings deposits rose by US\$4.9 million, while time deposits increased by US\$2.9 million. These changes led to a corresponding change in the composition of private sector deposits, with the share of demand deposits increasing from 25.8% to 38.2%, while those of savings and time deposits fell to 38.8% and 22.5% respectively.

Commercial bank credit was more expansionary in 1989 than in the previous year, as domestic credit increased by US\$2.6 million (21.3%), compared to US\$0.7 million (6.1%) in 1988. However, with the improvement in the net deposit position of the government, borrowing by this sector declined, thereby removing demand for additional credit. Private sector credit rose by US\$3.8M (27.3%) with increased allocations to businesses and households of US\$2.5M (67.6%) and US\$1.4M (15.4%) respectively. The net deposit position of the government improved further, while credit to the non-financial public enterprises fell by half. In these developments,



both lending and deposit rates remained relatively stable throughout 1989. Deposit interest rates remained in a range of 4% to 7.5% depending on maturity and size of deposits, and lending rates ranged between 9.5% and 18%, with the upper end of the range applicable to consumer credit. Summary on selected monetary indicators is presented in Table 5.3. Data on commercial bank loans and advances is presented in Annex C - Table C1.12.

TABLE 5.3
SELECTED MONETARY INDICATORS
(US\$ Million at end of period)

	YEARS		
	1987	1988	1989
NET FOREIGN ASSETS	5.6	9.7	23.4
Central Bank (Imputed Resources)	6.9	7.2	7.5
Commercial Banks	-1.3	2.5	15.9
DOMESTIC CREDIT	11.5	12.2	14.8
Private Sector	11.0	12.8	16.6
Business	3.5	3.7	6.1
Households	7.5	9.1	10.5
Non Financial Public Enterprises	0.6	0.4	0.2
Government (net)	0.1	-1.0	-2.0
LIABILITIES TO THE SECTOR OF WHICH:	15.9	19.4	35.6
Demand Deposits	5.2	5.0	13.6
Savings Deposits	7.7	8.9	13.8
Time Deposits	2.4	5.3	8.0
Foreign Currency Deposits	0.6	0.2	0.2

5.7 Public Sector Operations

Data on the fiscal operations of the government, show that the current account surplus of US\$0.4 million achieved in 1990 was of the same level as that realized in 1988, but represents a 100% and 33.3% over the levels achieved in 1987 and 1989, respectively (see Table 5.4) Current revenue of US\$14.5 million realized in 1990 was 40.8% higher than the US\$10.3 million achieved in 1987. Increased in current revenues were derived from all major sources, but increased in taxes on goods and services and on international trade were the most substantial.

While there was a similar growth of current expenditure between 1987 and 1990 (39.6%) compared to recurrent revenue (40.8%), capital expenditure increased substantially on account of the rehabilitation effort. Current expenditure increased by 9.9% to US\$14.1 million between 1989 and 1990, but at a slower rate than the 10.4% increase achieved between 1988 and 1989. During 1989 outlays for wages and salaries of US\$7.5 million were US\$1.4 million (23.0%) higher than for 1988. This increase in expenditure was due in part to a 4% increase in salaries together with an ex

services related industries has created sufficient employment opportunities that 0% levels of unemployment rates were recorded in 1988 and 1989 (Table 5.5)

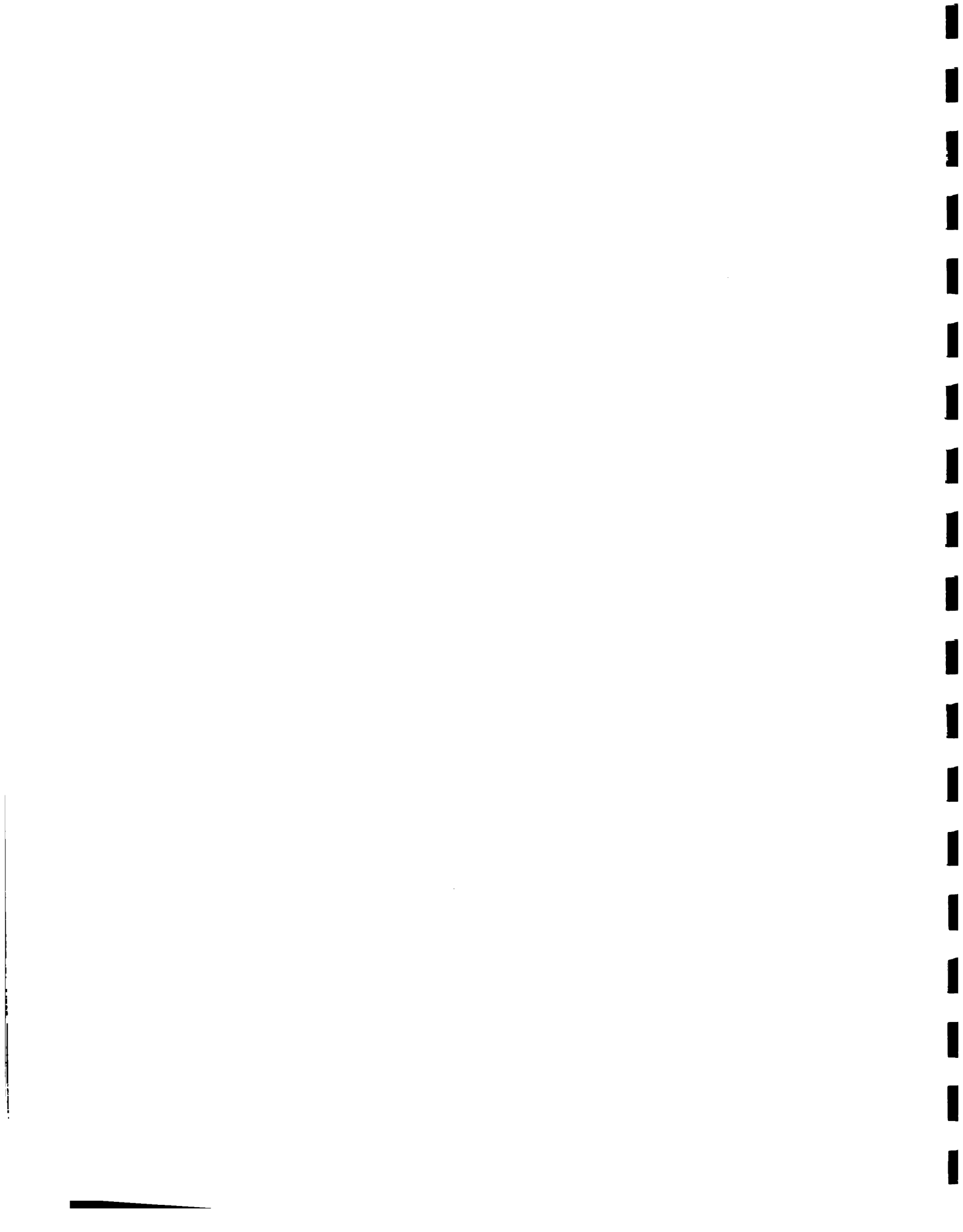
TABLE 5.5
LABOUR FORCE INDICATORS

YEARS	LABOUR FORCE	EMPLOYMENT RATE	UNEMPLOYMENT RATE
1980	4872	4574	6.1
1981	4935	4664	5.5
1982	5035	4753	5.6
1983	5100	4743	7.0
1984	5200	4900	5.8
1985	5330	5050	5.3
1986	5277	5054	4.2
1987	5316	5209	2.0
1988	5200	5200	0.0
1989	5200	5200	0.0

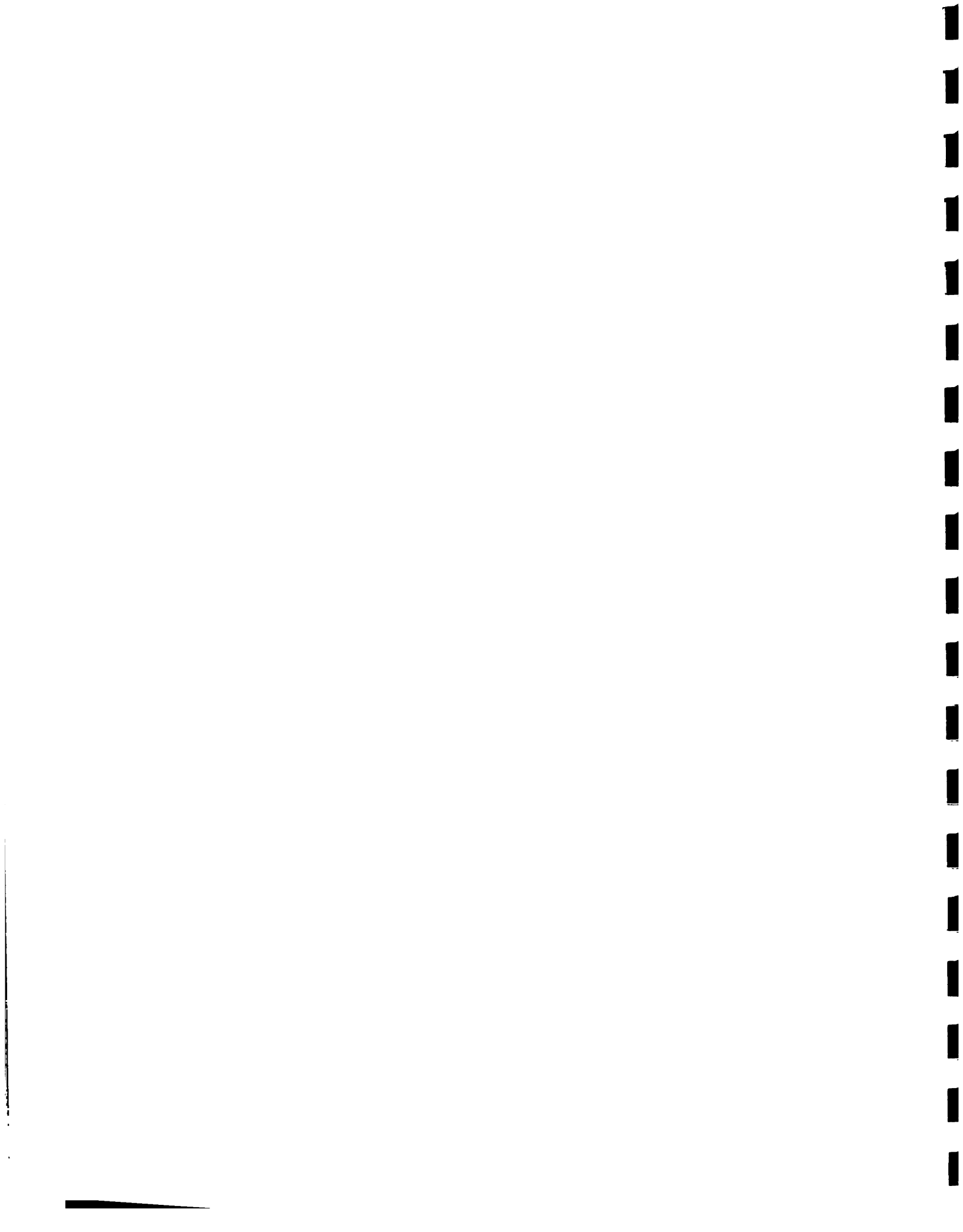
SOURCE: Statistical Office

Employment by sector provides further information on the relative importance of different economic activities. Figures available are presented in Annex C - Table C1.17 show that in 1987 services sector employed 41.0% of the labour force, construction 17.8%, tourism and trade 12.7%, manufacturing 10.6% and agriculture 9.6%. Based upon the sectoral distribution of growth from 1980 through to 1988, it seems likely that agriculture and manufacturing have recorded a reduction in workers, while construction, tourism, and services have undoubtedly increased the demand for labour.

In the context of full employment, labour shortage threaten to delay the implementation of many proposed projects. There are some policy options open to the government to resolve the constraint. These include policies to augment the supply of labour and/or the implementation of a system for the prioritization of projects. Labour augmentation policies focus on increasing the supply of labour through immigration. The problem with immigration is that it could, unless carefully planned and monitored, place considerable strain on social and economic infrastructure. In addition, uncontrolled immigration will change the distribution between the immigrant population and Montserradians and raise questions about the dilution of culture and ownership of Montserrat's resources. The second option seems to be preferable since it will help the government to control the pace of economic growth and smooth out the peaks and troughs in resource demand. This approach emphasises the prioritization of projects within the framework of national and sectoral development plans. In this context a set of criteria should be developed whereby project are ranked based on resource requirements and sound economic and financial analysis.



Montserrat recorded an inflation rate of averaging 3.5% per year between 1982 and 1988 (Annex C - Table C1.19). It is estimated that inflation rate was in double digits in 1989. Rising domestic prices were associated with sizeable wage increased in the construction following hurricane Hugo, increased domestic demand, rising international prices, and shortages resulting from bottlenecks at the port and airport. Inflation had begun to subside by the third quarter of 1990. However, Iraq's invasion of Kuwait in August led to increased fuel and other import prices. This together with an increase in indirect taxes, rising wage rates and strong domestic demand pushed the retail price index to 6.8% in 1990.



CHAPTER VI

6. OVERVIEW OF THE AGRICULTURAL SECTOR OF MONTSERRAT

6.1 The Environment

Montserrat lies between 16°40' and 16°50' north of the equator, and has a tropical maritime climate. Mean annual temperature is 26°C (79°F), with a mean low in January of 24°C (75.5°F) and a mean high in September of 28°C (82°F). Temperatures are rarely more than 5°C (9°F) outside these means. Humidity at 9.00am is 70 percent and the air is probably near saturation most nights. Although situated in the hurricane belt, before the devastation of Hurricane Hugo in 1989, the last hurricane to hit Montserrat was in 1928, although there had been several near misses since then.

Rainfall varies from an annual median of 1070mm (42 inches) at Elberton (near Foxes Bay) to 2050mm (81 inches) at Riley's (365m) (1200ft), with rainfall being less on the windward side of the island than on the leeward. Although there is considerable variation among years, the period July to January normally has the most rain. From February to June irrigation is required if yields are to be maintained.

Montserrat is a volcanic island. Clays, clay loams, loams and sands make up 80 percent of the land; with clays most common in the northern region and sandy loams most common in the south. The remaining 10 percent is a variety of soils, including soufrieres, hydrogenics, skeletal and complexes.

6.2 Resource base

(a) Labour Force

Island wide, 70% of farmers are over 50 years of age, and 52% are over 60 years of age. The farming population is relatively old when compared with total population, where 17% are over 60 years old and 25% are over 50 years old. The Central district has the oldest farming population with 80% above age 50 years and 56% above age 60. The North has the youngest population with 64% over 50 years old and 50% over 60 years old.

Employed agricultural labour force has remained constant between 1979 and 1987, and in 1987 was estimated at 500 persons or 9.6% of the total employed labour force.

(b) Land

The total area of Montserrat is 10,319 hectares (25,489 acres), of which 6,285 hectares (15,524 acres) is Class 4 land, unsuitable for agriculture under present conditions.



The majority of Class 4 land is used appropriately for woodland, bushland or urban development. However, 397 hectares (993 acres) is used for grazing, cultivation or tree crops, which are inappropriate uses. If erosion is to be avoided, these lands must be maintained in woodlands or put to some other appropriate use.

There are 4,034 hectares (9,965 acres) of land suitable for agriculture, but of this 1,035 hectares (2,558 acres) is under urban development: this land is lost to farmers although it may be used by backyard gardeners and loose livestock owners. There are thus 3,000 hectares (7,410 acres) of land that are potentially suitable for agriculture, although rainfall and access reduces the actual area available for cultivation. At present, 1,100 hectares (2,745 acres) are being used for agriculture, but only 306 hectares (758 acres) are within the cultivation cycle (i.e. land that is either in cultivation or in short term fallow).

There is clearly room for both a significant expansion of the area used for agriculture and a more intensive use of agricultural lands. However, any expansion will require a significant improvement in marketing and processing of agricultural produce.

(c) Water Supply

Montserrat's water supply comes almost exclusively from springs in either the Centre Hills or the Soufriere Hills. The Centre Hills catchment is 750 hectares (1,870 acres) and has an average daily flow of 3.4 million litres (750,000 gallons). The Soufriere Hill catchment is 600 hectares (1,500 acres) and has an average daily flow of 2.5 million litres (550,000 gallons). Table 6.1 gives summaries of daily flow for the springs in the Centre Hills and Soufriere Hills. Both catchments are predominantly under woodland at present.

If the springs were to dry up water would become scarce, prices would rise and industry, agriculture, tourism and domestic customers would suffer. As there is little, if any, potential for dams to provide domestic water, it is essential that spring flow be maintained. Moreover, to maintain spring flow the woodlands on the Centre Hills and Soufriere Hill catchments must be preserved.



TABLE 6.1
ANNUAL WATER BALANCE AT THE MAJOR
CATCHMENTS ON MONTSERRAT

	CENTRE HILLS	SOURFRIERE HILLS
Area of catchment	1870 acres	1500 acres
feeding springs	757 hectares	607 hectares
Rainfall	80 inches 2030 mm	80 inches 2030 mm
Total rainfall on catchment	3300 million gallons 15 million cubic metres	2710 million gallons 12.3 million cubic metres
Spring flow	275 million gallons 1.25 million cubic metres	200 million gallons 0.9 million cubic metres
Evapotranspiration	55 inches 1400 mm	55 inches 1400 mm
Total evapotranspiration from catchment	2330 million gallons 10.6 million cubic metres	1870 million gallons 8.5 million cubic metres
Run off and deep percolation	690 million gallons 3.15 million cubic metres	640 million gallons 2.9 million cubic metres
Spring flow as a percentage of rainfall	8.3	7.5

SOURCE: Montserrat: A Resource Assessment by I.R. Corker. Overseas Development Administration (ODA), 1986.

6.3 Structural Characteristics of the Agricultural Sector

6.3.1 Agro-Economic Zones

The island can be divided into eight agro-economic zones, each with its own set of physical and economic conditions, of which the central valley is presently the most important.

Zone I (Silver Hill)

The area from Rondivous Bay on the East Coast and Marguerita Bay on the West Coast up to the tip of the island falls under this zone.

During the period of estate agriculture cotton was the main crop in this area. Presently the zone is of little



use for agricultural purposes, because of the badly eroded nature of land and the rough terrain. There are very few farmers in this area and hardly any agricultural activity is carried out, except the rough grazing of the land by loose goats.

Zone II (St. Johns)

This area, is more or less triangular in shape, and lies between Bunkum Bay, Marguerita Bay and Rondivous Bay. It is the most active agricultural zone in the northern part of the island.

The important agricultural areas in this zone are, St. Peters, Brades, Gerald's, Blakes Farm, Davy Hill, St. Johns and Cavalla Hill. It has a total of 161 registered farmers who hold a total of 708 acres of land; of which 385 acres is held by livestock farmers. Cultivation is confined to small farms, mostly on the hilly slopes. The cultivable areas are between 100-700 feet above sea level. Farming is mostly rain fed. Major crops grown in this zone are sweet potato, beans, onions, peanuts, cucumbers and cabbage. Farming in this zone is more subsistence-oriented rather than for commercial production. Among the 161 farmers very few, approximately 20 farmers, produce saleable surpluses. Among these farmers 55 own livestock.

Zone III (Central Hills)

The Centre Hill area which is more or less in a square shape between St. Peters, Blakes Farm and Weeks Estates is mainly forest area with a modest amount of agricultural activity in areas like Water Works, Bugby Hole and Bottomless Ghaut. There are approximately 20-25 farmers in this area and most of them are livestock owners. These farmers are occupying land between 350-850 feet in altitude.

Zone IV (Central Valley)

The majority of agricultural activity on the island is carried out in this area. It is sometimes referred to as the "bread basket of the island", with an estimated 65% of the island's agricultural production coming from this zone alone.

The important agricultural places in this zone are Gages, Sens, Riley's, Farrells, Paradise, Harrison and Moleneaux. There are 138 registered farmers in this zone and all their farming is entirely commercially oriented. These farmers who are in the age range of 19-78 years,



hold a total of 262 acres of cultivable land. Out of this 16.5 acres have irrigation facilities. The major crops grown are sweet potatoes, tomatoes, carrots, cabbage, peanuts and cucumbers. Recently, with the availability of irrigation, farmers are involved in cauliflower, brocolli, and lettuce production.

Zone V (Soufriere Hills)

This zone, a rectangular block, within Tuitts, Landing Bay, O'Garros and Gages is more or less similar to Zone III, except that it has much greater potential for agricultural development, which is presently not utilized. The area is covered mostly by natural forest. Chances Peak, the highest point on the island, of over 3,000 ft is in this Zone, as are Galway's and active Soufriere.

The important areas of agricultural activity are Hermitage and Galways Estates. Roaches Estate, which is approximately 300 acres, is presently not utilised due to lack of approach roads. The major crops grown in this area are cassava, dasheen, tannia and yams. Hermitage Estate, which was recently developed, can form the hub of agricultural activity in this region. It is between 1,000 and 1650 ft above sea level. Hot peppers were an important crop on this estate.

Zone VII (Amersham)

After the Central Valley, this zone is considered a high potential area for agricultural development. It is in a triangular shape between Plymouth, Gages and O'Garros. It has well laid out approach and feeder roads. There are 92 registered farmers in this area and among them 48 are livestock farmers. The total land held by these farmers is 530 acres, of which 376 acres are utilised for livestock.

Important areas for agricultural activity are Peebles, Parsons, Amersham, Brodericks and St. Patricks. Major crops under cultivation are sweet potato, carrots, beans, tomato and cabbage.

Zone VI (East Coast)

This is a long strip of land approximately 0.75 to 1.00 mile wide which begins from Marguerita Bay in the north and ends at Landing Bay in the South. The area is relatively dry and is affected by high winds.



There is a total of 93 registered farmers in this area, who hold 270 acres. Apart from the small farmers, the Montserrat Sea Island Cotton Company hold about 120 acres.

The important agricultural areas are Trants, Farm, Whites, Long Ground, Tar River and Tuitts. The major crops grown are cotton, hot peppers, cassava, yams and sweet potato.

Zone VII (Mid West)

This is more or less a triangular shaped area between Plymouth, Weekes and Bunkum Bay. The major portion is occupied by residential areas.

There is a total of 93 registered farmers, most of whom are who are mostly commercially oriented. Agricultural activity is found in the area of Richmond, Cork Hill, Weekes, St. Georges, Salem and Woodlands.

The major crops under cultivation are tomatoes, cabbage, carrots and cucumbers.

6.3.2 Land use and Crops

The 1983 Farmer Survey identified 754 hectares (1885 ac) as being used in September of that year (Annex C - Table C2.1). The largest land use category was grazing, which covered 412 hectares (1031 ac), followed by cultivation with 130 hectares (324 ac), and tree crops with 25 hectares (62 ac). The remaining 187 hectares (468 ac) is in the category of lands than had not been used for a year or more, but were still being controlled by farmers.

The main crops grown are:

Ground provisions	- dasheen)	
	tannia	)	35 ha (88 ac)
	sweet potatoes))	
Vegetables	- carrot)	
	cabbage	)	12 ha (31 ac)
	tomato)	
	onion)	
Cash crops	- peanut)	
	hot pepper	)	18 ha (46 ac)
	cotton)	
	pineapple)	

Production is primarily for subsistence and barter within the local economy, with secondary commercial production. This commercial production is limited by the size of the local market, by limited irregular inter-island shipping, by lack of suitable export markets, by a lack of local processing facilities, and by the farmers' inability or unwillingness to produce significant quantities of produce at realistic prices.

6.3.3 Land Tenure

According to the 1983 Farmer Survey, island wide, 94% of the farmers had land, either through freehold title, rent, or customary leasehold access. The remaining 6% were loose livestock owners who have no regular grazing lands, or were charcoal burners.

Landless farmers were most numerous in the North and East where they represent about 9% of their district's farmers. They were less prevalent in the South where they represented less than 1% of the farm population.

Cultivated land was 1885 acres (compared with 785 acres today), the greatest area of which was in the North (822 acres) and the least is in the Central district (333 acres).

Island-wide, 542 acres were farmed as freehold land (29% of the total). Of this amount, 465 acres were in the North (57% of the district's total), and only 4 acres of free-hold land were in the South (1% of the district's total). Five (5) per cent of all farmed lands were neither owned nor rented, but simply used. In the East and Central districts, customary use of land amounts to about 9% of all farmed lands, however this figure was only 1% in the South. An estimated 35 farmers island-wide had no regular access to land. The majority of these people are owners of loose livestock.

The majority of the land (66%) farmed was rented either from the Land Development Authority (Government) or private land owners. Twenty nine percent of the lands were farmed by the owners, and 5% of farmed land was neither owned or rented by the farmer, but simply used.

6.3.4 Infrastructure

Agricultural infrastructure on Montserrat is very good, with farm holdings nowhere being more than 3km (2 miles) from a paved road. The main agricultural areas, with the exception of Roaches, are well served with paved and unpaved farm roads, although several of these have eroded.



6.3.5 Farm Size and Distribution

Over 50 percent of all farms are less than 1 hectare (2.5 ac) in area. And only 7 percent of farms are over 4 hectares (10 ac), although these farms cover 37 percent of the utilized area.

Farms are generally fragmented. Even farm of less than 0.2 ha (0.5 ac) often consists of two or more holdings. Farms between 1 and 2 ha (2.5 and 5 ac) normally consist of two holdings, but many are more highly fragmented. An analysis of the number of farmers by size of holding is presented in Annex C - Table C2.2.

6.3.6 Mechanisation and Labour

Almost 50% of farmer used tractors for ploughing, harrowing and banking, but all other field operations are by hand. The dependence on a few centrally controlled tractors limits farmers's ability to plant their crops at the right time.

The lack of mechanized planting, weeding and harvesting, coupled with the very limited use of herbicides, makes commercial farmers dependent on the extensive use of hired labour. Table 6.2 shows the estimated use of labour for selected crops. The harvesting labour intensity for peppers appears low, in view of the difficulty of picking.

TABLE 6.2
LABOUR INTENSITY FOR MAIN CROPS,
MAN DAYS PER HECTARE

ACTIVITY	CABBAGE	CARROT	CUCUMBER	HOT SWEET		TOMATO	PEANUT
				PEPPER	PEPPER		
Field Preparation	7	6	3	6	5	7	8
Fertiliser Application	5	2	2	2	2	5	2
Weeding	7	8	8	6	10	16	6
Spraying	5	4	4	2	1	4	2
Harvesting	25	14	15	2	26	15	17
TOTAL	49	34	32	18	44	47	35

SOURCE: CARDATS

The expansion of commercial farming will require the introduction of small and medium sized farm implements in addition to the greater use of fertiliser, and possibly herbicide, to increase yields and reduce labour requirement. Expansion could be aided by the general availability of

electricity, piped water and paved roads. But the lack of water for irrigation could be a constraint in guaranteeing increased production.

6.4 Institutional Structure

The public sector institutions primarily responsible for fostering and promoting the development of the agricultural sector in Montserrat are the Ministry of Agriculture, Trade, Lands and Housing, the Montserrat Land Development Authority (LDA), the Montserrat Integrated Sea Island Cotton Company (MISICC), the Water Authority, the Montserrat National Trust, the National Development Foundation (NDF) and the Development Finance and Marketing Corporation (DFMC).

The major institutional and subject matter divisions of agriculture as they currently exist within the Ministry of Agriculture, Trade, Lands and Housing are shown in Figures 6.1 and 6.2. The role, structure, functions and services of the Department of Agriculture have undergone dramatic changes in the last 15 years.

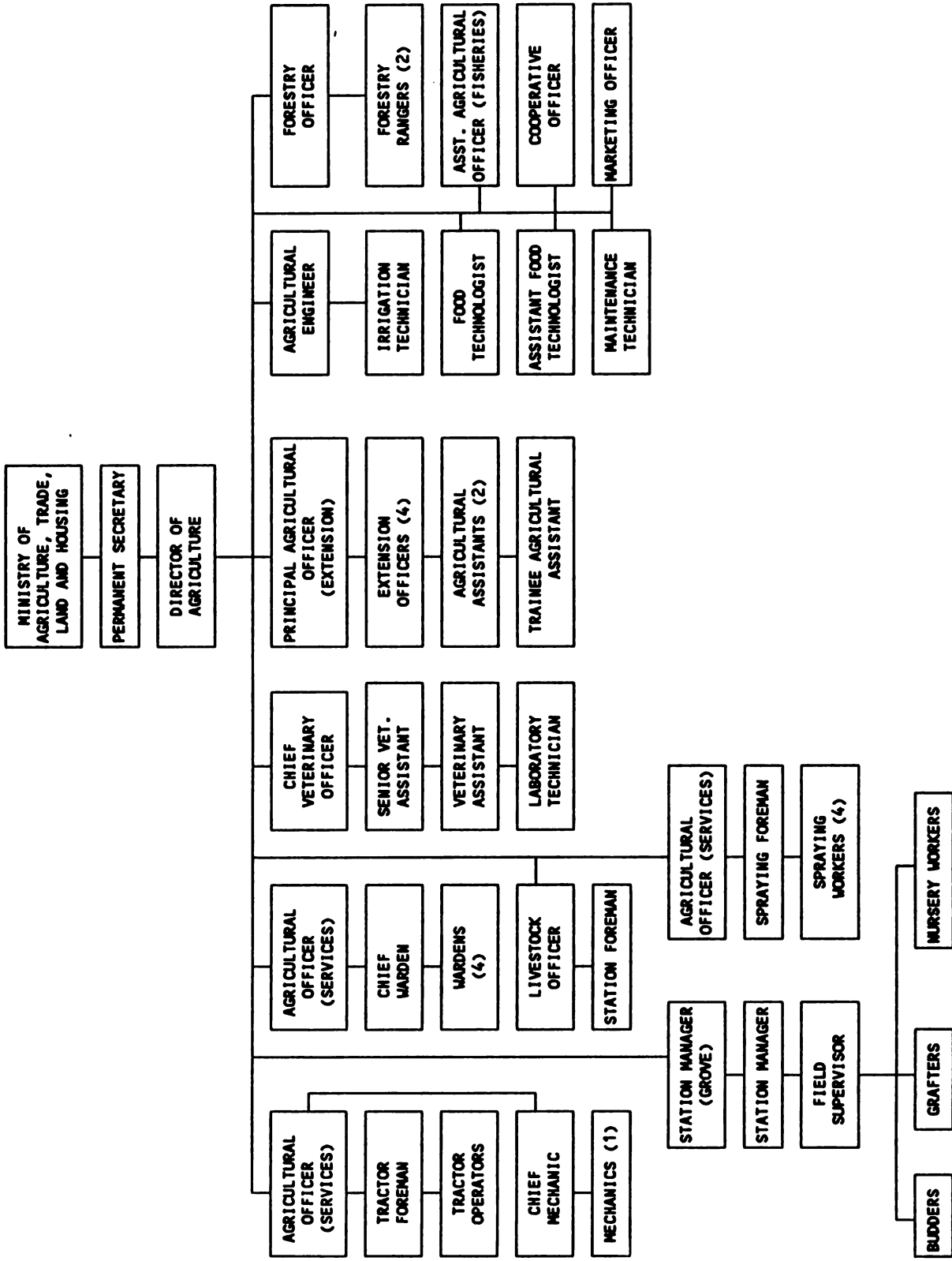
The subject matter responsibilities have expanded into areas which previously had little activity. Noteworthy among these are Forestry, Fisheries, Environmental Management, 4H and Cooperatives.

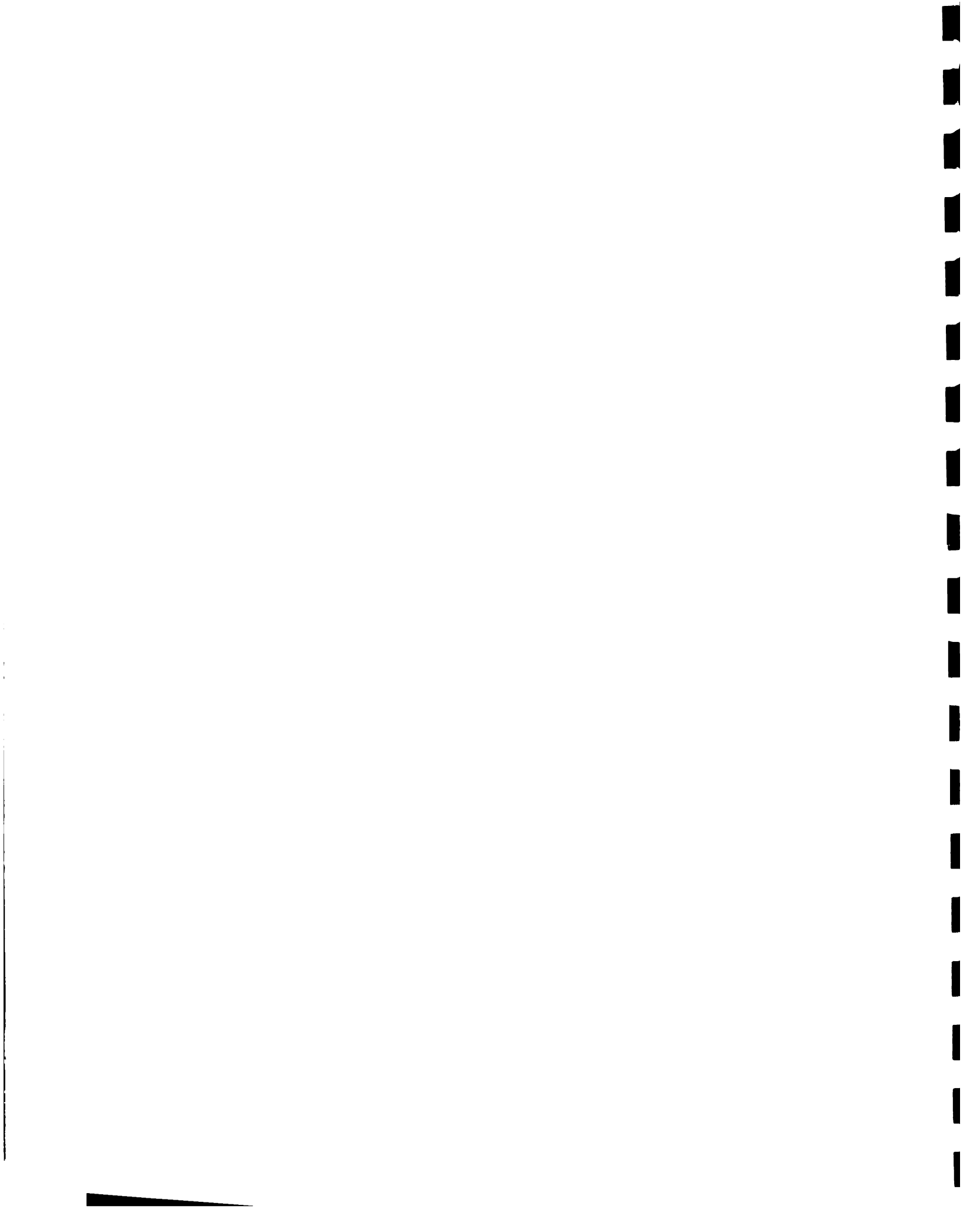
The Department of Agriculture now has an extremely wide brief. The developmental responsibilities are closely linked with regulatory and protective responsibilities. Thus, beach and foreshore protection, loose livestock control, abattoir hygiene, tractor services, extension outreach, veterinary and nursery services.

In addition, the Department's orientation has changed to one which is committed to and facilitative of private initiative and investment in the agricultural sector. Hence, emphasis has now been placed on the delivery of services, analysis of the impact of macro-economic policies, pricing policies, and fiscal policies on the sector, public investment programmes and producer involvement.

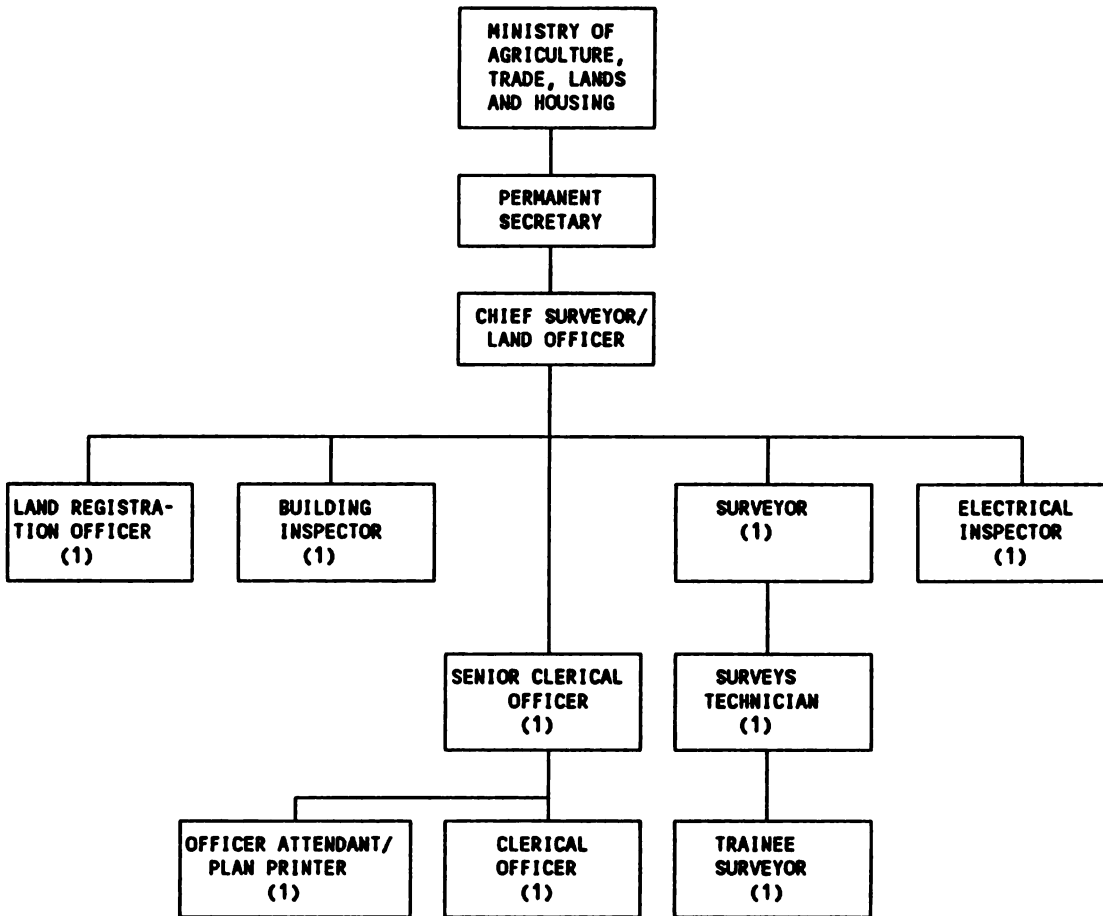


FIGURE 6.1
ORGANISATION CHART OF THE DEPARTMENT OF AGRICULTURE



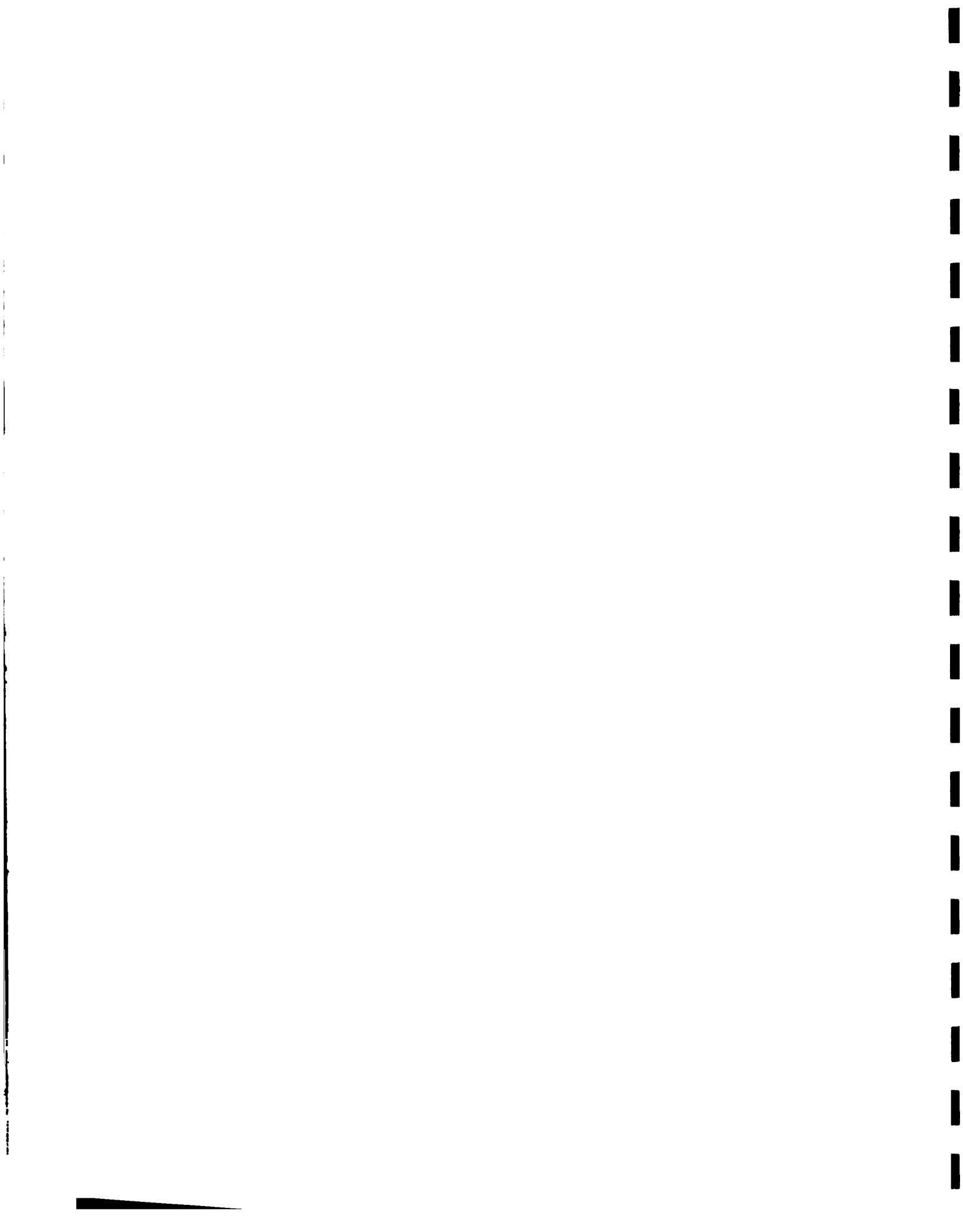


**FIGURE 6.2
ORGANIZATION CHART OF THE DEPARTMENT OF LANDS AND SURVEY**



It is evident that the full impact of the efforts of the Department of Agriculture cannot be felt unless the efforts of allied agencies such as the D.F.M.C are harmonised with those of the Department. The roles of the D.F.M.C., CARDI, the Monsterrat National Trust and the L.D.A. are crucial as support agencies.

These are several regional and international institutions actively involved in the agricultural development process in Montserrat. Included are: Caribbean Agricultural Research and Development Institute (CARDI), Caribbean Development Bank, Overseas Development Administration/British Development Division (ODA/BDD), United States Agency for International Development (USAID), Canadian International Development (CIDA), Food and Development Agency (FAO), and the United Nations Development Agency (UNDP). While some of these institutions have been relatively effective in carrying out their mandate, the absence of an inter-institutional framework to coordinate their diverse activities has led to some measure of duplication of efforts, resulting in inefficiencies in the use of scarce resources.



6.5 Analysis of Sectoral Performance

The economy of Montserrat has undergone dramatic changes during the last twenty (20) years. The relative importance of agriculture has declined. From a situation in which agriculture was once the lead sector and mainstay of the economy, it now contributes less than 5% of GDP and approximately 10% of employment.

Figures available and presented in Table 6.3 show the sector's contribution to GDP between 1977 - 1987 within the range of 3.7% (1980) to 4.7% (1979). Declines were recorded in both the livestock and forestry subsector relative contribution to agricultural GDP. With respect to the crop subsector, substantial increases were recorded in its relative contribution to agricultural GDP during the period from 43.4% in 1977 to a high of 57.0% in 1984, but declined to 53.1% by 1987. Less significant increases were recorded for the relative contribution of the fishing subsector to total agricultural GDP.

The sector offers great potential for growth and expansion of output. Progress in this regard will however, to a great extent depend on the degree to which sound management and development plans are conceptualized, elaborated and implemented. A major element in the planning matrix must be the political will to provide the resources necessary to stimulate production and output.

TABLE 6.3
GROSS DOMESTIC PRODUCT IN AGRICULTURE
BY SECTOR OF ORIGIN
(US\$ MILLION)

YEARS	TOTAL GDP	TOTAL AGRICULTURE	AGR/TOTAL GDP (%)	% COMPOSITION OF AGRICULTURE GDP			
				CROPS	LIVESTOCK	FORESTRY	FISHERIES
1977	11.3	0.49	4.4	43.4	32.4	8.3	15.9
1978	13.1	0.56	4.3	46.4	31.3	6.5	15.8
1979	16.0	0.73	4.7	52.9	28.5	4.8	13.8
1980	24.2	0.89	3.7	47.0	26.4	11.1	15.5
1981	27.2	1.11	4.1	52.0	23.6	10.9	13.5
1982	30.0	1.23	4.1	53.7	22.6	10.2	13.5
1983	32.0	1.21	3.8	52.8	22.7	10.2	14.3
1984	34.7	1.46	4.2	57.0	21.8	9.3	11.9
1985	36.2	1.60	4.4	51.7	25.5	11.4	11.4
1986	41.2	1.64	4.0	51.7	25.7	11.6	11.0
1987	48.0	1.81	3.8	53.1	26.3	10.4	10.2

(a) Crops

The first European settlers grew tobacco, indigo, cotton and spices, which were exported to Ireland, from where they obtained salt, meat and other provisions. When Montserrat was invaded by the French (supported by the Caribs) in 1667, these crops were destroyed, and sugar replaced tobacco as the main crop.



In the year immediately after emancipation of slaves (1838) Montserrat was beset by natural and man-made crisis and sugar production fell drastically. Sugar production rose after 1850 until 1880, but after 1890 it declined again and in the 20th century it never exceeded 1000 tons. After the 1928 hurricane, sugar production was negligible, although 120 acres of cane was grown for the production of rum. Today sugar production is virtually non-existent in Montserrat.

Throughout the 1950's and into the 1970's agriculture declined and emigration was high. The sector's development since had done much to help the island's economy, but many Montserratians have realized that there are other ways of making a good living other than by agriculture.

Cotton

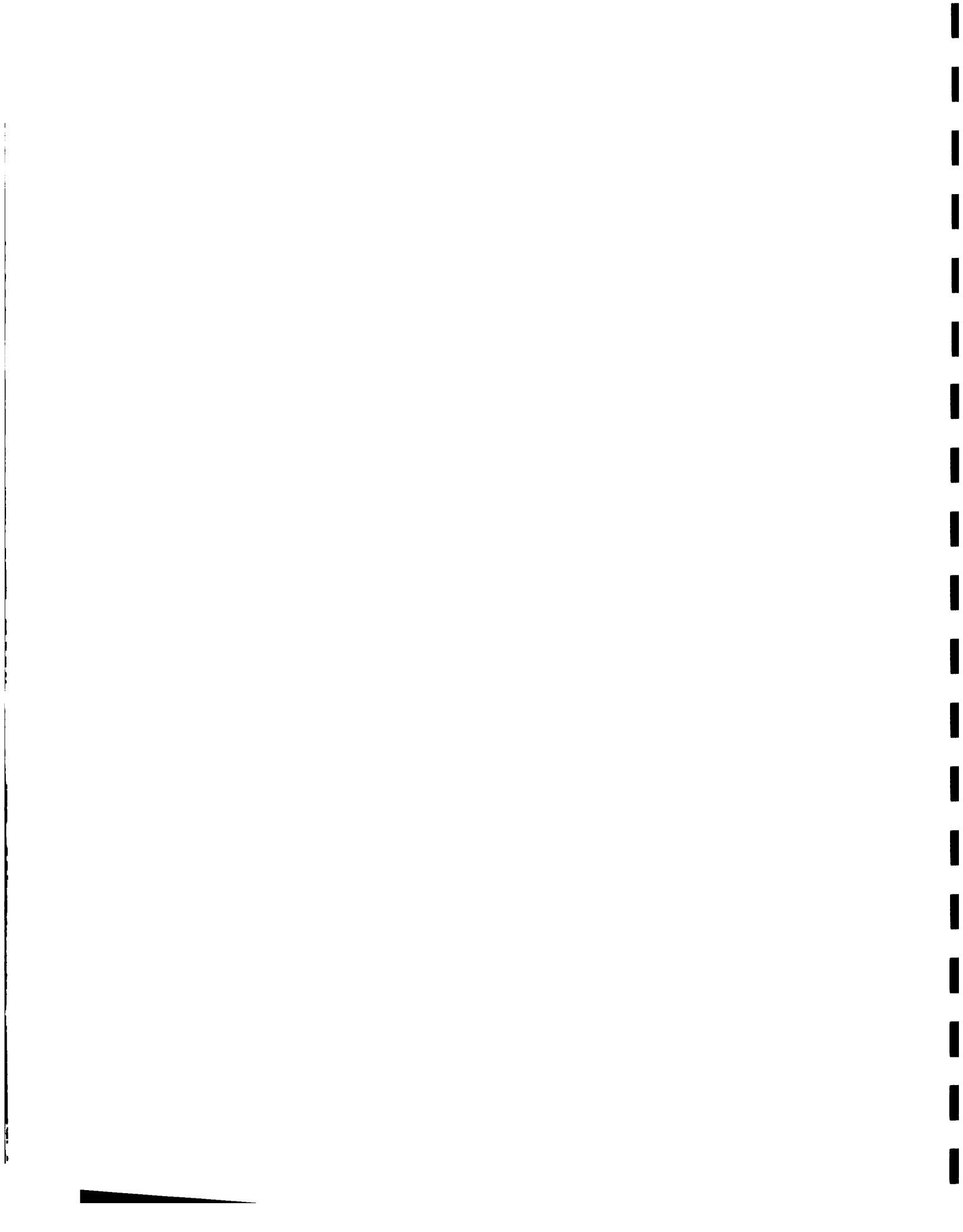
Cotton was one of the original crops grown in Montserrat. By emancipation, cotton had become the main cash crop for small farmers but it was not until after 1900 that it became the main cash crop for the island. Highest yield was obtained in 1941 when 1,128,724 lbs seed cotton was produced from 5,395 acres. Production outputs since have declined gradually and by 1987 only 5,000 lbs seed cotton was produced. An estimated 1,000 lbs seed cotton was produced in the 1990/91 cropping season from one small farm holding.

Fruits and Vegetable

The production of fruit and vegetables has always been overshadowed by cotton, sugar or limes. In 1916 non-sugar-cotton-lime exports were £5,756 (5.6%) out of a total of £68,531 for agricultural exports. By 1934 they had risen to £7,252 (17%) out of £41,278, but by 1952, when tomato production was 147,197 lbs, non-sugar-cotton-lime exports were only £4,870 (EC\$23,381) (3.4%) out of £142,570 (EC\$684,354).

Although not a major export earner, fruit and vegetable production was more than sufficient for on-island needs, while exports to single crop islands (sugar producers mainly) were locally significant. In the early 1900's fresh vegetables were exported, and guavas, pineapples, limes, tamarinds and mangoes were processed by the then flourishing Fruit Preservation Company. Onions were also exported to Barbados, Trinidad, Guyana and neighbouring islands, the collection, handling and shipment being by the Montserrat Onion Growers Association.

In 1922, the Montserrat Onion Growers Association was replaced by the Fruit and Vegetable Growers Association.



The main crop then was onions but tomatoes, Irish potatoes and other vegetables were also handled.

By the late 1920's onions were on the decline and tomatoes had become the principal export vegetable crop.

Despite the lack of regular and frequent shipping, the export of tomatoes continued to expand. By 1951 over 300,000 lbs of tomatoes were being exported with a total export value of EC\$53,000 compared to EC\$620,000 for cotton in the same year. But in 1957 the regular shipping service with Canada ceased and the export market for fresh fruit and vegetables collapsed.

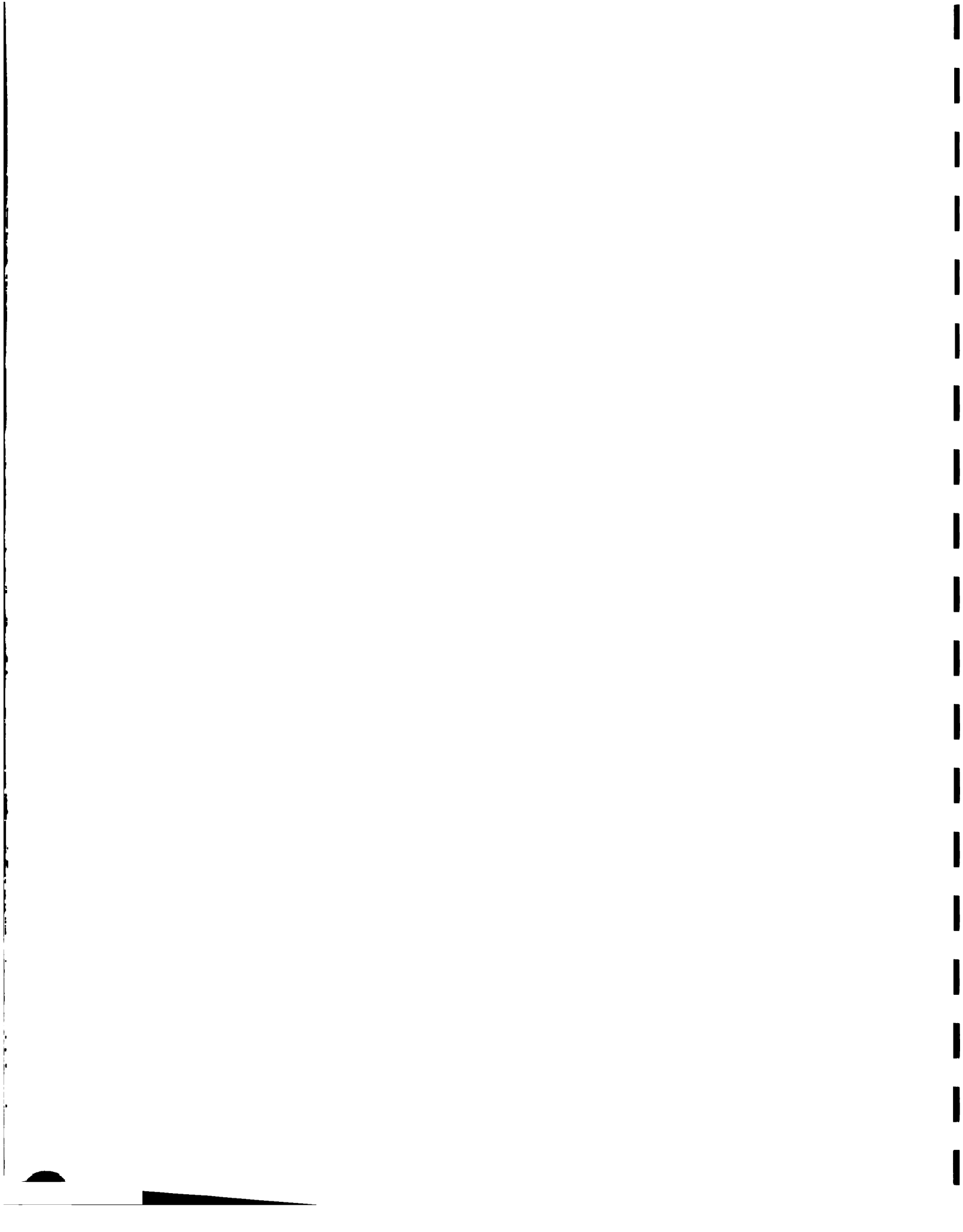
In 1960 a tomato paste factory opened, with a capacity to absorb over one million pounds of tomatoes a year. At that time the farm gate price for fresh tomatoes was about five cents (5ct) per pound, which was less than the cost of inputs. Farmers were unable to produce at this price and the venture failed.

Throughout the 1970's the development of winter homes provided a source of demand for vegetables. But these consumers also demanded high quality and regular supply, which local farmers were not always able to provide. Consequently traders brought in produce from outside, principally from Florida, at very high prices. Local farmers, seeing the prices paid for imported produce, demanded the same for local fruit and vegetables. These farmers however, failed to maintain quality standards or regular supply; and faced with high priced local produce, the import of fruit and vegetables flourished. Recently a few commercial farmers, having seen the opportunity for the production of high quality and regular supply of local fruits and vegetables, are now taking a greater share of the domestic market.

Estimated production as well as a value of production of major fruit and vegetables are presented in Annex C - Table C2.3.

(b) Livestock

Table 6.4 below presents a comparison of livestock populations of Montserrat for the year 1972, 1979, 1983.



**TABLE 6.4
COMPARISON OF LIVESTOCK POPULATION, 1972, 1979, 1983**

LIVESTOCK	YEARS					
	1972 :		1979		1983	
	NO.	:	NO.	:	NO.	:
			As % of 1972	:		As % of 1972
Cattle	1447	:	987	:	68	:
Sheep	2723	:	1110	:	41	:
Goats	2767	:	1070	:	39	:
Pigs	2181	:	262	:	12	:

The most important characteristic of the livestock industry is that 11% of all livestock farmers have no land. This has resulted in a stray animal problem on the island, with livestock damaging farmers crops.

Livestock production figures are presented in Annex C - Tables C2.4 and C2.5. The data shows that egg production reached a high of 83 thousand dozen in 1986. The value of meat production increased significantly during the 1977-1987 period under review, with the values of mutton, beef and pork increasing three fold, four fold and five fold, respectively.

(c) Fisheries

The period 1977-1987 saw a gradual increase in fish production, with the exception of 1984 when a production of 204, 854 lbs fish was recorded, the lowest for the period under review (Annex C - Table C2.6).

Total value of fish produced has increased more than three fold over during the same period, from EC\$270,145 in 1977 to EC\$85,443 in 1987.

6.6 Agricultural Credit

Commercial bank credit to the agricultural sector (except fisheries) rose rapidly in nominal terms between 1981 and 1983. It however, declined drastically thereafter and by 1988 agricultural credit was only 27% of the value of 1983. Loans and Advances to the fisheries subsector during the period under review show an erratic trend.

6.7 Agricultural Development Constraints

The development of the agricultural sector has been hampered by a wide range of constraints. They may be summarised as follows:



Policy Level

At policy level the sector has suffered from:

- The absence of a national development plan.
- Fragmentation of institutional responsibility within the sector.
- Equivocation and inconsistency with respect to the role of the public sector in direct food production.
- Adverse terms of trade and escalating labour costs which have worked against the sector.
- Rapid manpower changes (turn-over) at decision making levels within the sector.
- Both relative and absolute shortages of financial resources for the execution of critical infrastructural projects and support programmes.
- The absence of clearly defined agricultural land policies.
- Shortage of specialist skills in certain areas e.g., marketing, environmental management, soil and water conservation and crop protection.
- Agricultural legislation which is obsolete, inappropriate or poorly enforced.
- The marginalisation of the natural resources sector in the development process.

Physical Environment

The natural environment itself poses challenges which in practical terms can be thought of as constraints to development:-

- The small size of the island in absolute terms.
- The hilly nature of the terrain.
- The high natural porosity of soils.
- The variability and unpredictability of rainfall.
- Deep "near shore" coastal waters.

- Vulnerability to natural disasters such as floods, landslides and hurricanes.
- Small size of population and therefore a small local market and small pool of reserve labour.

Human Environment

- The farmer population profile. The average age of farmers is over 50 years.
- The tradition of estate production as against farm family production.
- An apparent disinclination of primary producers to cooperate formally in groups and co-operatives despite high levels of informal co-operation.
- The attitude of many livestock owners towards the proper control of their livestock.
- The tendency to seek technical assistance in preference to developing local capability.

Institutional Environment

- The absence of an effective framework for the co-ordination of agencies working in the sector.
- Dearth of skills in specific subject areas - marketing, credit management, environmental management.
- Unusually long gestation periods in the implementation of major projects in the sector such as the CIDA Fisheries Project, the Abattoir and the CIDA Natural Resources Project.
- Rapid manpower changes at planning and administrative levels in the sector during the last decade.

Historical Legacies

The agricultural sector has inherited legacies which have combined to reduce the impact of implementation level activities:-

- The ownership pattern of agricultural land. Many farmers have always been tenant farmer whether of the private or public sector.



- The impact of the rapid decline in the fortunes of sea island cotton as regards farm earnings and agricultural labour supply.
- A poor repayment record of government sponsored agricultural credit programme such as the revolving credit system.
- Poorly planned primary export programmes.
- Lack of emphasis on important subsectors such as forestry, fisheries and livestock.
- A conspicuous de-emphasis of the sector at the political level during the last decade.
- Poor intra-sectoral linkages, i.e. infrastructure production, marketing and conservation.
- Poor inter-sectoral linkages, e.g. with tourism.

To the list of constraints outlined above must be added that effects on the sector of Hurricane Hugo in 1989. The FAO damage survey team summaries it thus "The island of Montserrat was devastated by Hurricane Hugo. Extensive damage was caused to the agriculture, forestry and fisheries. Since the hurricane came at a time when most crop farmers were preparing for the planting season, losses to short crops were relatively small. But damage to the commercial cash crops such as coconuts, avocado, mango, tamarind and citrus was substantial. The loss of tree crops have had a serious effect on the agro-processing industry which was in its infancy stage. A large numbers of livestock were also killed. The poultry and fisheries industries were virtually destroyed. The agricultural infrastructure (buildings, fencing, roads and soil and water conservation works, both on farms and at the Government Stations) was largely destroyed".



MONTSERRAT
TABLE C1.1
SECTORAL ORIGIN OF GROSS DOMESTIC PRODUCT AT CURRENT PRICES, 1980-88
(\$US)

Item	1980	1981	1982	1983	1984	1985	1986	1987	1988
1. Agriculture, Fishing and Forestry	891	1109	1225	1209	1464	1597	1644	1812	2051
2. Mining and Quarrying	132	168	410	254	406	444	528	569	668
3. Manufacturing	1289	1519	1494	1964	2074	1896	2139	2511	2862
4. Electricity and Water	689	753	784	1100	1237	1217	1391	1407	1574
5. Construction	1936	2365	3060	2129	2286	2628	4281	5028	5724
6. Trade and Hotels, etc.	3953	5576	5979	5978	5915	6014	7117	9706	10972
7. Transport and Communication	1576	1928	2418	3140	3598	3868	4371	4869	5534
8. Finance, Insurance, Real Estate, Misc Services	6561	5831	6175	7325	7656	7958	8391	8894	10144
9. Community, Social and Personal Services	5014	5500	6104	6665	7706	7826	8093	9070	10264
TOTAL Industries	22041	24749	27649	29764	32342	33448	37955	43866	49793
LESS: Imputed Banking Service Charges	701	1030	1358	1350	1506	1586	1683	1838	2099
GDP at Factor Cost	21340	23719	26291	28414	30836	31862	36272	42028	47694
PLUS: Net Indirect Taxes	2898	3450	3711	3621	3830	4289	4960	5936	6503
GDP at Market Price	24238	27169	30002	32035	34666	36151	41232	47964	54197

SOURCE: Statistics Office

MONTSERRAT
TABLE C1.2
SECTORAL ORIGIN OF GROSS DOMESTIC PRODUCT AT CONSTANT PRICES, 1980-88
(\$ '000)

Item	1980	1981	1982	1983	1984	1985	1986	1987	1988
1. Agriculture, Fishing and Forestry	564	632	599	509	644	658	616	655	793
2. Mining and Quarrying	109	120	269	105	167	161	167	180	213
3. Manufacturing	1159	1298	1273	1331	1303	1298	1313	1373	1469
4. Electricity and Water	422	422	410	448	463	492	527	565	657
5. Construction	1317	1468	1748	1141	1221	1405	1757	2389	2745
6. Trade and Hotels, etc.	2872	3001	3020	2959	2817	3029	3343	3978	4640
7. Transport and Communication	1026	1068	1151	1180	1193	1269	1354	1482	1663
8. Finance, Insurance, Real Estate, Misc Services	3159	3223	3267	3316	3408	3533	3591	3689	4273
9. Community, Social and Personal Services	3054	2945	2944	3017	3170	3246	3269	3391	3693
TOTAL Industries	13682	14177	14681	14006	14386	15091	15937	17702	20146
LESS: Imputed Banking Service Charges	586	596	606	596	626	666	676	686	812
GDP at Factor Cost	13096	13581	14075	13410	13760	14425	15261	17016	19334
PLUS: Net Indirect Taxes	1683	1628	1769	1992	1912	1967	2102	2221	2300
GDP at Market Price	14779	15209	15844	15402	15672	16392	17363	19237	21634
GDP Growth at Factor Cost (%)	9.3	3.7	3.6	-4.7	2.6	4.8	5.8	11.5	13.6
GDP Growth at Market Price (%)	10.3	2.9	4.2	-2.8	1.8	4.6	5.9	10.8	12.4

SOURCE: Statistics Office



MONTSERRAT
TABLE C1.3
EXPENDITURE ON GROSS DOMESTIC PRODUCT, 1983-1988
('000)

CURRENT PRICES	1983	1984	1985	Prel.		1988
				1986	1987	
Private Final Consumption Expenditure	30988	33398	34890	37593	43302	45378
Government Final Consumption Expenditure	6640	7140	7142	7965	8639	9370
Gross Fixed Capital Formation	8733	8215	9163	13022	17113	23870
Increase in Stocks	741	926	556	1185	1481	1667
Exports of Goods and Services	6851	4729	4347	4258	5286	3467
Minus: Imports of Goods and Services	21917	19743	20205	22791	27857	29556
Gross Domestic Product at Current Prices	32036	34665	35893	41232	47964	54196
CONSTANT PRICES						
Private Final Consumption Expenditure	14158	14398	15716	15524	15680	18151
Government Final Consumption Expenditure	3462	3480	3744	3647	3907	4751
Gross Fixed Capital Formation	4491	4282	4696	6632	8562	10941
Increase in Stocks	395	274	299	593	741	926
Exports of Goods and Services	3408	2353	2131	2087	2550	1734
Minus: Imports of Goods and Services	10513	9114	10194	11128	12203	14778
Gross Domestic Product at Constant Prices	15401	15673	16392	17355	19237	21725
Output Growth		1.8	4.6	5.9	10.8	12.4

SOURCE: Statistics Office

MONTSERRAT
TABLE C1.4
TOURISM DATA, 1980-1988

	1980	1981	1982	1983	1984	1985	1986	1987	1988
Total Visitor Arrivals	20483	21400	24900	18844	21147	24626	26076	28224	30301
O/W Stopover Visitors	15530	15554	14979	14341	15921	16509	15579	17029	17876
Cruiseship Visitors	4104	5149	9145	3614	4284	7048	9268	10006	10206
Other Excursionists	849	697	776	889	942	1069	1229	1129	2219
Tourist Expenditure									
ECS m	11.6	14.6	15.7	16.2	18.0	20.0	22.0	25.3	29.2
US\$ m	4.3	5.4	5.8	6.0	6.7	7.4	8.1	9.4	10.8
No. of Hotel Beds	184	184	176	176	176	176	206	206	206
Bed-nights Offered	64360	50840	64240	64240	50146	50146	63370	63335	70390
Bed-nights Realised	28256	24383	23052	22162	29784	32840	26283	26027	29545
Occupancy Rate (%)	43.9	48.0	35.9	34.5	59.4	55.2	41.5	41.1	42.0

SOURCE: Statistics Office



MONTERRAT
TABLE C1.5
LENGTH OF STAY OF TOURISTS, 1982-1988

Nights Spent	1982	1983	1984	1985	1986	1987	1988
1	1091	979	1133	1699	1265	1396	1400
2 - 7	4726	4884	5956	6481	6275	6924	7135
8 - 14	2891	2892	2868	3046	2931	3348	3689
15 - 31	2493	2475	2135	1790	1764	2004	2630
31 - 180	2220	1993	2280	2174	1740	1634	1603
180 - 365	264	502	465	424	319	240	252
TOTAL DEPARTURES	13685	13725	14837	15614	14294	15546	16709

	(Percentage Tourists)						
1	8	7	8	11	9	9	8
2 - 7	35	36	40	42	44	45	43
8 - 14	21	21	19	20	21	22	22
15 - 31	18	18	14	11	12	13	16
31 - 180	16	15	15	14	12	11	10
180 - 365	2	4	3	3	2	2	2
TOTAL	100	100	100	100	100	100	100

SOURCE: Statistics Office

MONTERRAT
TABLE C1.6
TOURIST ARRIVALS BY COUNTRY OF ORIGIN, 1982-1988

ITEM	1982	1983	1984	1985	1986	1987	1988
CARICOM	4489	4696	4867	5191	5118	5602	5768
U.S.A.	5689	5390	6701	7038	6416	6717	6837
Canada	1604	1655	1503	1574	1398	1666	1700
Rest of Americas	1070	716	1203	1155	1112	968	1188
U.K.	1672	1326	1223	1155	1114	1511	1801
Europe	314	464	294	281	318	458	506
Rest of World	141	94	130	115	103	107	76
TOTAL	14979	14341	15921	16509	15579	17029	17876

	(Percentage Shares)						
CARICOM	30	33	31	31	33	33	32
U.S.A.	38	37	41	42	41	38	38
Canada	11	12	9	10	9	10	10
Rest of Americas	7	5	8	7	7	6	7
U.K.	11	9	8	7	7	9	10
Europe	2	3	2	2	2	3	3
Rest of World	1	1	1	1	1	1	
TOTAL	100	100	100	100	100	100	100

SOURCE: Statistics Office



**MONTERRAT
TABLE C1.7
EXTERNAL TRADE
(US\$ million)**

Year	Domestic Exports	Re-exports	Total Exports	Total Imports	Balance of Trade	Exports as % of Imports
1977	0.4	0.2	0.6	7	-6.4	8.5
1978	0.7	0.7	1.4	10	-8.6	14
1980	0.6	0.2	0.8	12	-11.2	6.7
1981	0.7	0.5	1.2	16.5	-15.3	7.3
1982	1.3	0.9	2.2	18.9	-16.7	11.6
1983	1	1.6	2.6	20.3	-17.7	12.8
1984	1.6	3.6	5.2	20.1	-14.9	25.6
1985	1.5	1.7	3.2	17.5	-14.3	18.3
1986	1	1.9	2.9	18.3	-15.4	15.8
1987	1.8	0.5	2.3	20.4	-18.1	11.3
1988	3	0.5	3.5	25.3	-21.8	13.8
1989	1.8	0.4	2.2	26.9	-24.7	8.2

SOURCE: Statistics Office

**MONTERRAT
TABLE C1.8
PRINCIPAL DOMESTIC EXPORTS 1977-1988
(US\$ '000)**

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Agriculture	96	113	295	164	278	177	137	136	160	88	74	36
Cattle and Beef	33	11	46	1	41	8		2	61	8	1	8
Vegetable and Fruit	61	56	54	23	49	8	4	34	14	9	24	20
Lime Juice	2	3	4	1	1	1	1	4	2	1		
Hot pepper		34	133	50	57	16	14	18	8	3		
Live Plants		9	58	89	130	144	118	77	74	65	49	1
Honey								1	1	2		7
Cotton lint												
Manufacturing	311	598	256	491	1013	841	1444	1366	864	1757	2962	1732
Hair & Body Chemicals												
Leather	1	1	3	18	49	7	1	13	6	6	7	9
Light Fixtures						44	31		19	17	8	1
Cotton Goods, Clothing	89	37	6	57	131			222	9	373	14	1191
Plastic and Poly Bags	77	12	18	268	644	156	101	511	223	167	147	73
Electronic Parts		213	146	130	129	531	886	587	41	71	24	21
Sand and Gravel	17	63	12			88	404		532	1102	2739	365
First Day Stamps	30	222	54	12	27							40
Fish Hooks	67	40										
All Other	30	10	17	6	33	15	21	33	34	21	23	32
DOMESTIC EXPORTS	407	711	551	655	1291	1018	1581	1502	1024	1845	3036	1768
PERCENT:												
Agriculture	23	14	53	25	22	17	9	9	16	5	2	2
Manufacturing	77	86	47	75	78	83	91	91	84	95	98	98

SOURCE: Statistics Office



MONTERRAT
TABLE C1.9
EXPORTS BY END USE CATEGORY, 1978-1988
(US\$ million)

Item	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Domestic Exports	711	552	658	1278	1017	1581	1502	1022	1846	3037	1777
Food	103	237	78	125	32	19	58	86	24	24	20
Beverages and Tobacco	4	8	4	6	8	12	1	1	11	16	11
Crude Materials	96	79	89	135	151	120	77	74	70	53	56
Fuels											
Animal and Vegetable Oils											
Chemicals	3							5	7	8	
9											
Manufactured Goods	16	4	18	72	62	53	39	77	54	38	27
Machinery and Transport	212	146	130	129	88	404	587	453	673	430	366
Miscellaneous Manufactures	277	78	339	810	677	973	740	326	1007	2469	1281
Miscellaneous Transactions				1							
Re-exports	293	224	527	931	1567	3594	1651	1876	492	487	541
TOTAL EXPORTS	1004	776	1185	2209	2585	5175	3153	2898	2338	3525	2311

SOURCE: Statistics Office

MONTERRAT
TABLE C1.10
MERCHANDISE IMPORTS BY END USE CATEGORY, 1978-1988
(US\$ million)

Item	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Total	10.0	11.9	16.5	18.9	20.3	20.1	17.5	18.3	20.4	25.3	27.0
Food	2.3	2.5	3.5	3.7	3.7	4.0	4.3	3.8	4.1	4.3	4.3
Beverages and Tobacco	0.7	0.7	1.0	1.2	1.4	1.4	1.1	1.2	1.5	1.8	1.7
Crude Materials	0.2	0.6	0.5	0.6	0.6	0.5	0.3	0.6	0.5	0.7	0.9
Fuels	0.7	1.1	1.8	2.2	2.2	2.4	2.1	2.2	1.6	2.0	1.9
Oils and Fats	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Chemicals	0.6	0.7	1.3	1.4	1.6	1.3	1.1	1.2	1.3	1.6	1.6
Manufactured Goods	1.8	2.4	2.6	2.9	3.6	2.9	2.6	3.3	3.6	4.4	6.1
Machinery and Transport	2.5	2.4	4.1	3.5	4.6	4.6	3.6	3.9	4.7	7.3	7.7
Miscellaneous Manufactures	1.1	1.3	1.6	3.1	2.2	2.2	2.0	1.9	2.7	2.9	2.5
Miscellaneous Transactions		0.1	0.1	0.2	0.3	0.7	0.3	0.1	0.2	0.2	0.2

Totals may not add because of rounding

SOURCE: Statistics Office



MONTERRAT
TABLE C1.11
SUMMARY OF EXTERNAL PUBLIC DEBT AND PUBLICITY
GUARANTEED DEBT OPERATIONS, 1980-1985
(US\$ '000)

ITEM	1980	1981	1982	1983	1984	1985
Outstanding and Disbursed Debt at end of Period	1484.8	2012.9	2407.2	2681.6	3628.1	3747.8
Outstanding and Disbursed Debt at beginning of Period	1127.7	1484.8	2012.9	2407.2	2681.6	3628.1
Plus: Net Disbursements	357.1	528.1	394.3	274.4	962.5	108.7
Disbursements	379.8	547.1	436.4	355.2	1242.3	414.4
Amortisation	22.7	19.0	42.1	70.8	279.8	305.7
Valuation Adjustment					-16.0	11.0
Debt Service Payments	73.0	79.4	137.7	177.4	395.2	428.1
Amortisation	22.7	19.0	42.1	70.8	274.8	305.7
Interest	50.3	60.4	95.6	106.6	115.4	122.4
(In Percentage)						
Outstanding end Disbursed Debt/GDP	11.3	14.8	17.1	20.0	26.4	26.0
Net Disbursement/GDP	2.7	3.9	3.5	2.0	7.0	0.8
Debt Service/GDP	0.5	0.6	1.0	1.3	2.9	3.0
Debt Service/Exports of Goods and Services	4.1	2.4	3.5	2.6	8.3	9.8
Average Interest Rate b/	4.5	4.1	4.7	4.4	4.3	3.4

NOTES: a/ Includes Central Government and Central Government guaranteed debt
b/ Rates of interest payment to debt at beginning of period

SOURCES: Government of Montserrat, CDB and Mission Estimates



MONTERRAT
TABLE C.12
ANALYSIS OF LOANS AND ADVANCES, 1981 -1990
(US\$ 000)

ITEM	1981	1982	1983	1984	1985	1986	1987	1988	1989	SEPT. 1990
Agriculture	79	87	129	104	47	46	40	35	34	66
Fisheries	119	4	1		3	7	2	0	5	1
Manufacturing	426	398	353	332	381	242	239	203	194	263
(1) Food and Non-Alcoholic Beverages	38			9		1	0	7	19	9
(2) Clothing and Accessories	228	237	232	61	53	52	43	47	41	36
(3) Other Industries	159	161	121	263	328	189	195	148	134	219
Distributive Trades	1926	2060	2337	1943	2029	2239	2396	2443	2194	2786
Tourism	207	544	237	339	663	656	621	586	705	805
Entertainment and Catering	340	109	302	80	86	109	122	259	179	422
Transport	364	515	312	197	146	67	58	303	751	1305
Public Utilities	243	76	59	61	141	196	80	107	18	126
Construction and Land Development	791	433	258	408	305	208	110	312	335	2756
Government and Statutory Bodies	1461	1432	1146	1619	1433	961	889	487	233	74
Professional and Other Services	269	283	196	493	458	407	333	452	406	681
Personal	3786	5162	5741	6053	5889	6705	7555	9911	13367	20984
(1) House and Land Purchase	2139	3593	4040	4392	4176	5016	5123	6084	7418	10049
(2) Durable and Consumer Goods	797	773	991	1001	1242	1228	2024	2274	2774	4713
(3) Other Personnel	849	797	709	660	470	461	408	1553	3174	6222
Other Advances	183	373	322	446	531	824	685	69	989	47
TOTAL	10192	11476	11392	12076	12112	12667	13130	15166	19410	30318
% of Long Term Loans to Total Loans	52.1	57.1	63.3	61	66.8	68.3	67.5	33.9	28.9	72.54

SOURCE: ECCB - Quarterly Commercial Banking Statistics



MONTERRAT
TABLE C1.13
RECURRENT ACCOUNT OF CENTRAL GOVERNMENT: REVENUE, 1978 - 1988
(US\$ million)

TYPE OF REVENUE	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Direct Taxes	0.98	1.29	1.81	2.09	2.50	3.06	3.28	3.27	3.78	3.23	3.62
Personal Income	0.63	0.87	1.06	1.22	1.50	1.93	2.11	2.16	1.94	1.95	2.37
Company Income	0.12	0.14	0.34	0.43	0.53	0.63	0.70	0.63	1.28	0.66	0.56
Other Direct	0.23	0.27	0.41	0.44	0.48	0.50	0.48	0.48	0.56	0.62	0.70
Indirect Taxes	1.27	1.96	2.94	3.63	3.71	3.70	3.91	4.37	5.03	6.11	7.29
Import Duties	0.52	0.65	0.78	0.88	0.98	0.88	0.80	0.92	1.08	1.22	3.98
Other Indirect	0.76	1.31	2.16	2.75	2.73	2.81	3.11	3.45	3.95	4.89	3.31
Total Tax Revenue	2.25	3.25	4.76	5.72	6.21	6.76	7.19	7.64	8.81	9.34	10.91
Income from Property	0.09	0.09	0.09	0.09	0.09	0.13	0.15	0.08	0.08	0.11	0.08
Interest	0.04	0.04	0.03	0.03	0.04	0.08	0.05	0.03	0.03	0.05	0.04
Rent and Royalty	0.05	0.05	0.06	0.06	0.05	0.05	0.10	0.05	0.05	0.06	0.04
Profits: Gov't Corporations	0.15	0.31	0.31	0.65	0.73	0.54	0.23	0.18	0.18	0.16	0.15
Surplus of Dept. Enterprises	0.06	0.05	0.01	-0.13	-0.04	-0.03	-0.03				
Transfers (IM)	0.20	0.16	0.27	0.34	0.33	0.35	0.43	0.97	0.19	0.28	0.31
From Households	0.03	0.11	0.18	0.26	0.24	0.20	0.24	0.10	0.07	0.13	0.17
Other	0.17	0.04	0.09	0.08	0.10	0.15	0.19	0.87	0.12	0.14	0.14
Total Current Revenue	2.75	3.85	5.44	6.67	7.32	7.75	7.96	8.87	9.26	9.89	11.45

NOTE: Items and figures above differ in some cases from those published by the Ministry of Finance. Some reclassifications have been done in keeping with National Accounts methodology. Revenue for Departmental Enterprises - departments with collect payment for the services they dispense - are not included.

SOURCE: Statistical Office



MONTERRAT
TABLE CI.14
RECURRENT ACCOUNT OF CENTRAL GOVERNMENT: EXPENDITURE, 1978 - 1988
(US\$ million)

TYPE OF EXPENDITURE	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Gov't Final Consumption	2.88	3.67	4.53	5.23	6.25	6.64	7.14	7.14	7.96	8.51	9.03
Wages and Salaries	1.81	2.72	2.94	3.00	3.69	4.07	4.55	4.78	5.30	5.83	6.40
Pensions and Gratuities	0.21	0.16	0.28	0.27	0.31	0.41	0.41	0.53	0.40	0.49	0.53
Purchases	0.93	1.10	1.41	2.07	2.36	2.24	2.28	2.23	2.58	2.58	2.50
LESS: Sales	-0.06	-0.12	-0.10	-0.11	-0.10	-0.08	-0.10	-0.40	-0.31	-0.39	-0.40
Subsidies	0.03	0.03	0.04	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06
Transfer (Out)	0.29	0.32	0.41	0.44	0.51	0.59	0.62	0.61	0.57	0.65	0.81
To Households	0.12	0.14	0.19	0.16	0.22	0.25	0.26	0.30	0.32	0.33	0.35
Aboard	0.14	0.16	0.18	0.20	0.18	0.19	0.21	0.19	0.18	0.25	0.41
Other	0.03	0.03	0.04	0.07	0.11	0.16	0.15	0.12	0.07	0.07	0.05
Interest on Debt	0.02	0.02	0.02	0.11	0.14	0.12	0.10	0.09	0.07	0.05	0.11
Total Current Expenditure	3.23	4.04	5.01	5.83	6.90	7.40	7.91	7.90	8.66	9.27	10.01
Current Surplus (Deficit)	-0.43	-0.14	0.44	0.85	0.43	0.35	0.08	0.98	0.60	0.62	1.45

NOTE: See note under Table on the reclassification of Government accounts and departmental enterprises

SOURCE: Statistics Office



MONTSERRAT
TABLE C1.15
CAPITAL ACCOUNT OF CENTRAL GOVERNMENT: USES OF FUNDS, 1978 - 1987
(US\$ million)

USES OF FUNDS	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Purchase Land	0.017			0.451						0.103
Lend Development	0.036	0.119	0.130	0.114	0.082	0.066	0.103	0.116	0.186	0.041
Construction	0.675	0.577	1.161	1.069	1.441	0.869	0.670	1.373	1.956	1.004
Residential Buildings	0.008	0.001	0.013	0.066	0.276	0.113	0.070	0.349	0.390	0.020
Non-residential Buildings	0.267	0.215	0.415	0.163	0.287	0.130	0.063	0.101	0.574	0.543
Infrastructure	0.265	0.183	0.533	0.458	0.830	0.608	0.563	0.923	0.906	0.378
Other	0.136	0.177	0.201	0.383	0.048	0.017			0.011	0.064
Purchase Equipment	0.147	0.750	1.101	1.935	1.002	0.394	0.593	0.271	0.687	0.268
Transport Equipment	0.004	0.512	0.463	1.524	0.256	0.120	0.194	0.071	0.422	0.227
Other Equipment	0.143	0.238	0.638	0.411	0.747	0.274	0.399	0.200	0.265	0.041
Purchase Buildings										
Purchase Financial Assets	0.141		0.241	0.217	0.046					
Government Corporations	0.104		0.160	0.217						
Private Companies			0.081		0.046					
Capital Transfers	0.023	0.077	0.026	0.010		0.043	0.059		0.003	0.125
Repayment of Loans	0.121	0.043	0.059	0.139	0.196	0.254	0.209	0.257	0.353	0.453
Expenditure not Classified	0.014	0.020	0.053	0.096	0.036	0.036	0.089	3.749	0.045	0.167
Total Capital Expenditure	1.136	1.479	2.772	4.031	2.802	1.661	1.716	2.062	3.230	2.161

SOURCE: Statistics Office

MONTSERRAT
TABLE C1.16
CAPITAL ACCOUNT OF CENTRAL GOVERNMENT: SOURCES OF FUNDS, 1978 - 1987
(US\$)

SOURCES OF FUNDS	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Surplus on Current Account	-0.43	-0.14	0.44	0.85	0.43	0.35	0.08	0.98	0.60	0.62
Capital Grants	1.24	1.36	2.40	2.15	2.57	1.31	1.28	1.57	2.47	1.38
United Kingdom: GIA	0.62	0.48	0.40							
Capital	2.78	0.86	1.12	1.89	2.41	1.04	1.06	1.41	2.35	1.32
United States			0.61	0.13	0.13	0.15	0.14	0.08	0.05	0.03
Canada	0.02	0.02	0.01	0.12	0.03	0.05	0.03	0.05	0.02	0.02
European Community			0.63			0.06	0.01	0.03	0.01	0.01
Other	0.05		0.00	0.00	0.00	0.01	0.04	0.00	0.04	0.01
Loans	0.06	0.05	0.14	1.48	0.07	0.09				
CDB	0.06	0.05	0.14	0.08	0.07	0.06				
Local and Other				1.41		0.02				
TOTAL AVAILABLE RESOURCES	0.87	1.28	2.98	4.48	3.06	1.74	1.36	2.55	3.06	2.01
CAPITAL EXPENDITURE	1.14	1.48	2.77	4.03	2.80	1.65	1.72	2.06	3.23	2.16
Change in Reserves	-0.27	-0.20	0.21	0.45	0.26	0.08	-0.36	0.48	-0.17	-0.16

NOTES: Change in Reserves is the difference between available resources and actual expenditure.
GIA - Grant in Aid
Borrowing has not played a big part in public sector training, apart from CDB Student Loans and an aircraft loan



MONTSERRAT
TABLE C1.17
EMPLOYMENT TRENDS AND UNEMPLOYMENT, 1979-87

	1979	1980a/	1981	1982	1983	1984	1985	1986	1987
Agriculture, Forestry, Fisheries	503	476	470	470	450	495	500	500	500
Mininig and Quarrying	10	9	9	10	10	10	15	15	15
Manufacturing	420	464	520	510	533	522	520	526	552
Electricity and Water	82	89	89	90	100	103	105	106	117
Construction	720	713	735	740	690	700	750	844	928
Trading, Hotels, Restaurants	550	605	625	635	626	670	675	652	659
Transport and Communications	230	237	250	265	270	294	315	298	301
Finance, Insurance, Real Estate and Business Services	160	166	170	172	164	166	170	167	172
Other Services	1744	1815	1796	1861	1900	1940	2000	1946	1965
Total Employment	4419	4574	4664	4753	4743	4900	5050	5054	5209
No. of Persons Unemployed	351	298	271	282	357	300	280	223	106
Total Labour Force	4770	4872	4935	5035	5100	5200	5330	5277	5316
Unemployment	7.4	6.1	5.5	5.6	7.0	5.8	5.3	4.2	2.0

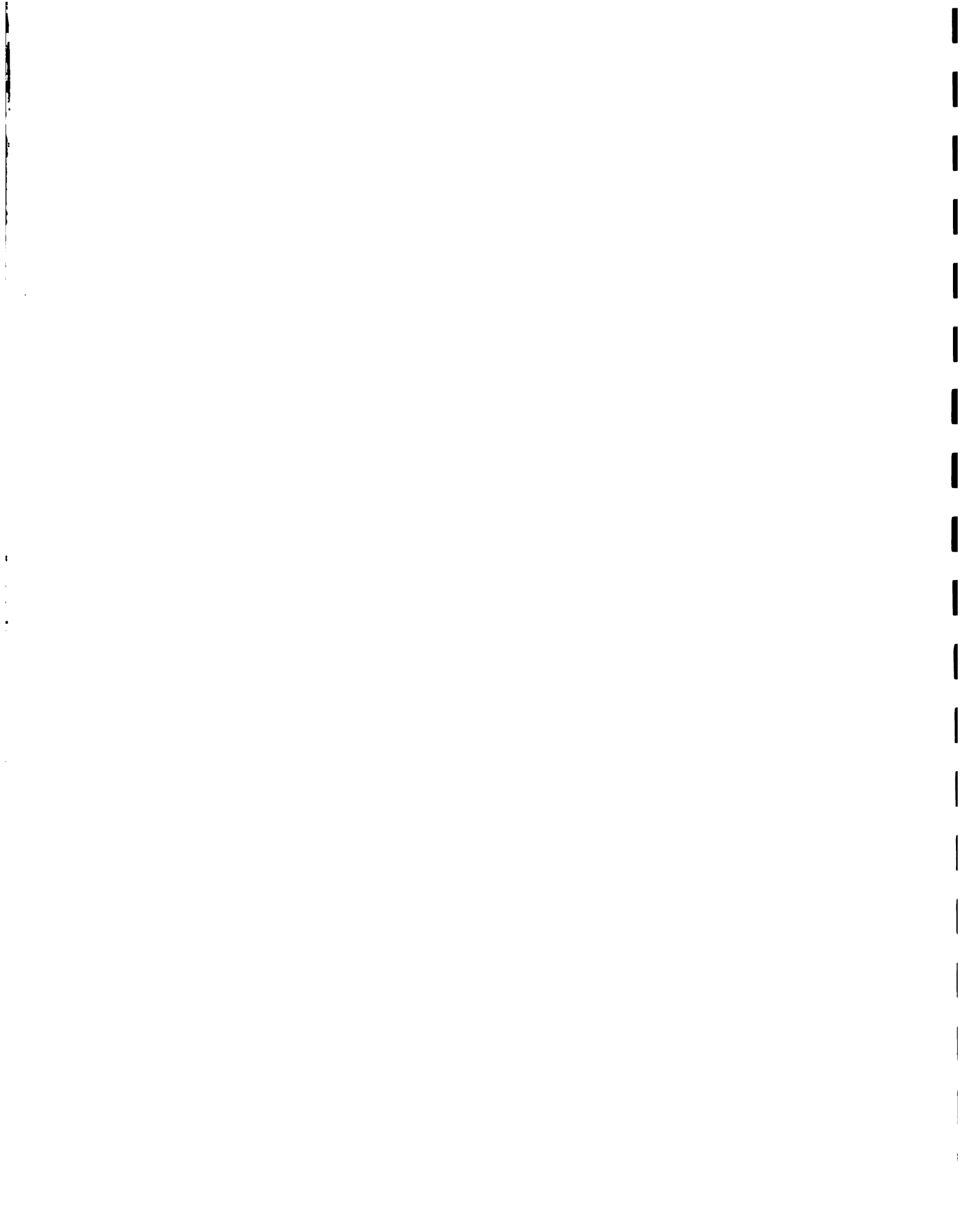
a/ Census Figures
SOURCE: Statistics Office

NOTE: Figures for 1980 are from the Population Census of that year. Figures for other years are estimated from Manpower Surveys, Surveys of Establishments and Annual Inquiries.

MONTSERRAT
TABLE C1.18
CONSUMER PRICE INDEX 1982 - 1988

ITEM	1982	1983	1984	1985	1986	1987	1988
(Percentage Change from Preceeding Year)							
Average	9.8	4.7	5.5	2.7	3.1	3.7	4.1
Food	4.9	0.2	7.2	-0.7	6.0	4.2	5.4
Alcoholic Beverage and Tobacco	5.8	4.5	5.3	1.7	0.9	1.0	1.6
Housing (Rent)		6.9	7.6		2.1	0.1	1.0
Gas, Electricity and Water	20.9	3.3	1.8	-1.2	-5.4	-3.3	3.1
Household and Miscellaneous Items	16.0	8.1	5.3	1.6	-4.6	-6.7	3.2
Clothing and Footwear	15.9	13.0	0.7	8.9	2.2	8.2	-2.7
Services and Other	6.9	3.5	7.4	5.3	2.0	3.3	1.2
End of Period (December)	8.4	7.0	6.1	3.2	0.2	2.7	3.6
Food	2.3	6.9	8.3	-0.2	1.2	4.8	6.3
Alcoholic Beverage and Tobacco	2.3	9.6	1.3	3.4	-3.3	3.3	5.0
Housing (Rent)		13.9	1.0		2.1		4.7
Gas, Electricity and Water	25.0	2.1	-1.9	0.8	-8.6	-1.1	2.2
Household and Miscellaneous Items	9.0	5.1	6.7	1.3	-9.4	-4.9	14.1
Clothing and Footwear	17.8	9.2		14.7	0.6	2.1	0.4
Services and Other	2.9	5.1	8.9	2.3	4.3	2.0	-3.2
(Index (Sept. 1982 = 100))							
End of Period (December)	100.0	107.0	113.5	117.1	117.3	120.5	124.8
Food	97.7	104.4	113.1	112.9	114.2	119.7	125.8
Alcoholic Beverage and Tobacco	100.2	109.8	111.2	115.0	111.2	114.8	120.5
Housing (Rent)	100.0	113.9	115.0	115.0	117.4	117.5	114.3
Gas, Electricity and Water	100.1	102.2	100.3	101.1	92.4	91.4	93.4
Household and Miscellaneous Items	102.3	107.5	114.7	116.2	105.3	100.2	123.0
Clothing and Footwear	104.9	114.6	114.6	131.4	132.2	135.0	135.6
Services and Other	100.3	105.4	114.8	117.4	122.5	124.9	120.9

SOURCE: Statistics Office



**MONTERRAT
TABLE C2.1
LAND USE, 1983**

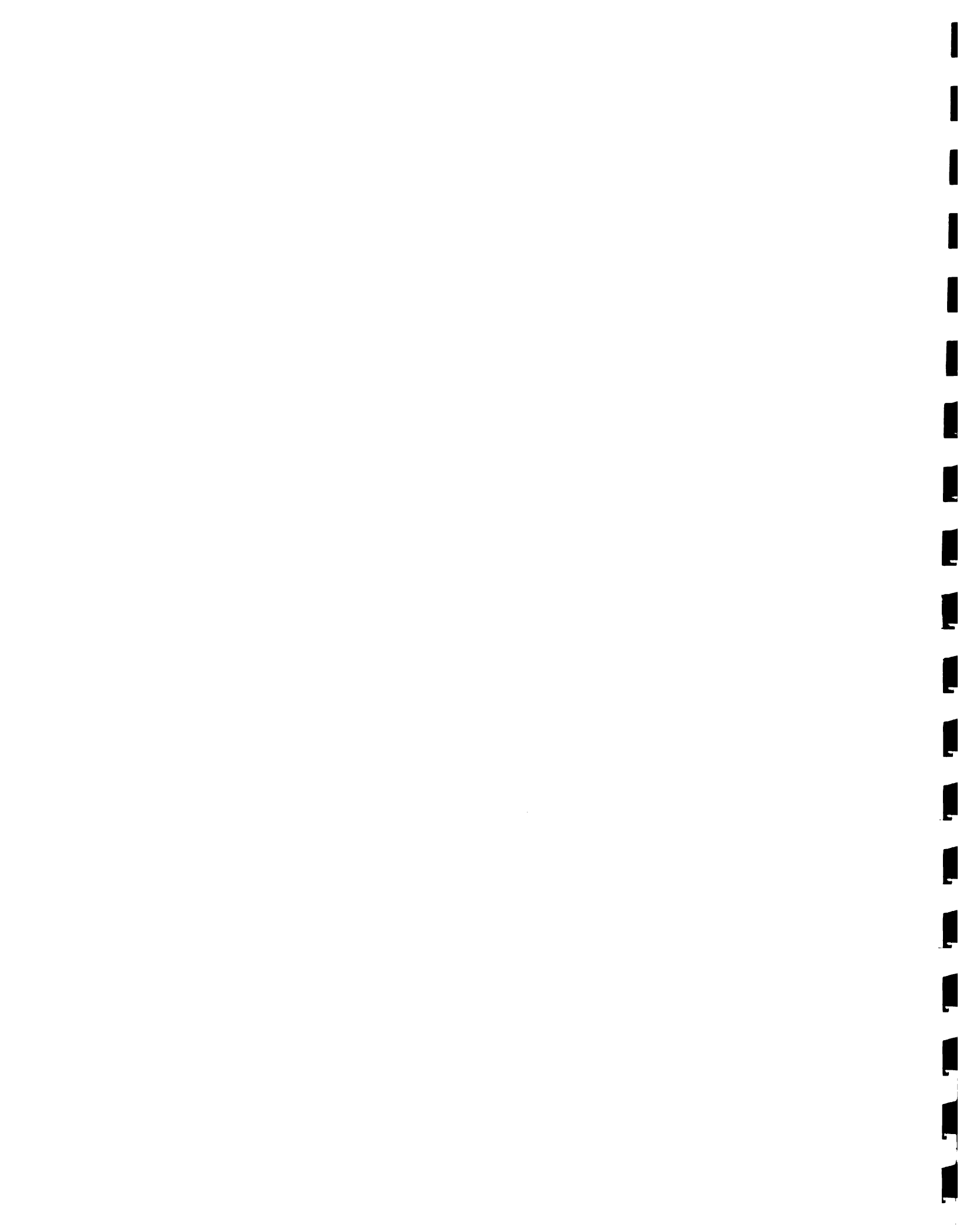
	TOTAL ACREAGE		% OF CULTIVATED
	ACRES	%	
Area Under Farms	1885	100	582
Cultivated Acreage of which:	324	17	100
Cash Crops (Exec. Tree-crop)	113	6	35
Miscellaneous Vegetables	211	11	65
Area in Tree Crops	62	3	19
Grazing Area of which:	1031	55	318
Improve Pasture	120	6	37*
Rough Grazing	911	48	281**
Acreage not used	468	25	144

* Improved pasture is 12% of grazing area

** Rough grazing is 88% of grazing area

**MONTERRAT
TABLE C2.2
NUMBER OF FARMERS BY SIZE OF HOLDING
UNDER 50 ACRES, 1972, 1979 & 1983**

SIZE (ACRES)	1972	1979	1983
0 - 0.99	551	218	170
1 - 4.99	496	413	254
5 - 9.99	66	82	88
10 - 50	34	54	37
Total Farms	1147	767	549
Change from 1972	-	-33%	-52%
Total Farm Acreage	2210	2336	1885
Change from 1972	-	6%	-15%



MONTERRAT
TABLE C2.3
ESTIMATED PRODUCTION OF MAJOR CROPS, 1977 - 1987

	(A) QUANTITY ('000 LBS)									
	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
White Potato	200	80	70	60	60	15	-	55	170	100
Sweet Potato	330	280	310	340	335	273	545	450	255	360
Carrot	90	90	120	140	135	72	210	170	75	90
Onion	50	30	20	25	25	6	10	10	5	15
Tomato	160	160	150	140	140	55	180	105	55	40
Dasheen	65	55	60	60	60	37	40	40	30	30
Cabbage	60	60	80	80	80	50	110	230	50	25
Cucumber	25	25	25	30	30	20	110	50	30	20
String Bean	25	30	30	30	30	12	50	25	30	20
Christophene	20	20	25	25	25	30	30	30	30	30
Tannia	55	55	55	55	55	43	45	45	40	40
Egg Plant	30	30	35	30	30	34	35	35	20	30
Sweet Pepper	10	10	10	10	10	8	45	15	5	10
Banana	130	120	130	140	140	144	145	150	150	150
Lime	80	80	70	70	70	76	100	100	100	100
Peanut	10	10	20	20	20	28	40	30	15	20
Hot Pepper	200	600	300	200	150	50	110	20	5	5
Seed Cotton	60	20	10	75	50	63	-	-	-	5
Mango	100	100	100	120	120	120	120	120	120	125
Live Plants	5	30	35	45	45	41	35	30	30	40

	(B) VALUE (EC\$'000)									
	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
White Potato	70	48	46	39	42	11	-	61	190	115
Sweet Potato	116	98	124	136	151	117	354	338	171	360
Carrot	50	68	90	98	101	94	273	255	134	180
Onion	25	20	14	23	24	7	10	13	8	21
Tomato	64	88	105	112	168	83	270	158	127	100
Dasheen	33	28	33	36	39	39	46	50	45	45
Cabbage	33	36	64	72	96	88	110	403	98	50
Cucumber	10	9	10	12	18	20	110	50	46	30
String Bean	15	20	20	21	24	12	75	38	60	40
Christophene	9	10	13	15	18	30	30	30	35	37
Tannia	22	22	22	25	30	32	45	45	40	40
Egg Plant	6	8	12	15	17	29	35	35	20	37
Sweet Pepper	5	5	6	7	8	12	79	26	15	20
Banana	20	18	26	28	35	72	73	75	80	90
Lime	20	24	28	35	39	61	100	100	100	100
Peanut	15	15	34	38	45	70	116	90	50	20
Hot Pepper	120	360	225	200	150	50	110	20	5	5
Seed Cotton	72	30	20	261	293	379	-	-	-	12
Mango	10	10	15	18	18	24	60	120	120	125
Live Plants	25	150	228	360	405	330	280	248	270	360



MONTERRAT
TABLE C2.4
EGG PRODUCTION, 1977 - 1985

	QUANTITY PRODUCED (doz)	VALUE (EC\$) AT FARM-GATE	FARM-GATE PRICE (per doz)
1977	75520	197862	2.62
1978	70396	214004	3.04
1979	71241	229396	3.22
1980	74416	257176	3.46
1981	71139	267482	3.76
1982	72385	296477	4.10
1983	73182	312215	4.27
1984	80734	344538	4.27
1985	82383	351491	4.27
1986	83033	365633	4.36
1987	86921	398614	4.54

Poultry Meat Production is insignificant, being about 1% of Egg Production up to 1985.

MONTERRAT
TABLE C2.5
MEAT PRODUCTION, 1977 - 1985

	VALUE OF PRODUCTION (THOUSAND EC\$)				EXPORT OF LIVE ANIMALS*
	TOTAL	BEEF	MUTTON	PORK	
1977	284	219	43	22	89
1978	370	273	56	41	31
1979	398	282	61	55	124
1980	561	400	94	67	6
1981	533	371	85	77	110
1982	623	444	98	81	22
1983	643	479	80	84	-
1984	752	554	108	90	5
1985	890	675	115	100	104
1986	994	758	137	99	-
1987	1107	847	152	108	-

* Value EC\$'000. Mostly Live Cattle. Export of slaughter meat is still basically insignificant and sporadic.

MONTERRAT
TABLE C2.6
FRESH FISH SUPPLY, 1977 - 1987

	PRODUCED (LBS) EC\$	IMPORTED (LBS) EC\$	TOTAL SUPPLY (LBS) EC\$	EC\$/LB
1977	270145	11323	281468	1.25
1978	276535	8135	284670	1.25
1979	337334	8964	346298	1.50
1980	639639	12162	651801	2.50
1981	687594	52023	739617	3.00
1982	700794	46765	747559	3.00
1983	708771	46800	755571	3.00
1984	665775	165725	831500	3.25
1985	882356	44000	926356	3.50
1986	860497	64752	925246	3.50
1987	851443	97444	948887	3.50



ST. KITTS

CHAPTER VII

7. GENERAL ECONOMIC BACKGROUND

7.1 Main Characteristics and Evolution of the Economy

7.1.1 Recent Economic Performance

Over the past decade, the economy of St. Kitts & Nevis has shown strong but variant growth, reflecting the importance of the sugar industry and the economy's sensitivity to the implementation of large projects. Real output expanded on average by 6.2% per annum from 1980 to 1989, while real per capita income grew by approximately 4% per year over the same period. At the end of 1989, nominal per capita GDP was EC\$6,364 (US\$2,357) compared to EC\$2,389 (US\$889) in 1980.

Total output grew from about 4% in 1980 to 6% in 1982 and a negative growth rate of 2.4% was recorded in 1983, as a result of the poor performance of the sugar industry and a drought which affected non-sugar agriculture. The economy expanded very much between 1984 and 1987, when the growth in real GDP averaged about 7.1% per annum. Economic growth was slower in both 1988 and 1989 when output increased by 6.7% and 5.1% respectively. The increase in economic activity in 1989 was largely the result of a strong performance of the construction sector and modest growth in manufacturing and the services sector.

7.1.1.1 Sectoral Distribution

The sugar sub-sector still remains the mainstay of the economy despite the relative growth in importance of tourism and the services sector during the last decade. Growth in the agricultural sector is largely indicative of the performance of the sugar industry.

During the period 1977 to 1989, there has been real negative growth of the agricultural sector (see Figure 7.1). With the exception of 1978 and 1979, the trend indicates that the contribution of the sector to national output has consistently declined over the period by almost 54%. The decline during the last decade alone was nearly 50%, from 16.7% of GDP in 1980 to 8.9% in 1989.

The decline in agricultural output reflects to a large extent, the continued weak performance of crop production, particularly sugarcane which accounts for about 51% of value-added in agriculture (see Figure 7.2). Sugar production has trended downwards with fluctuations, from 46,800 metric tons (mt) in 1978

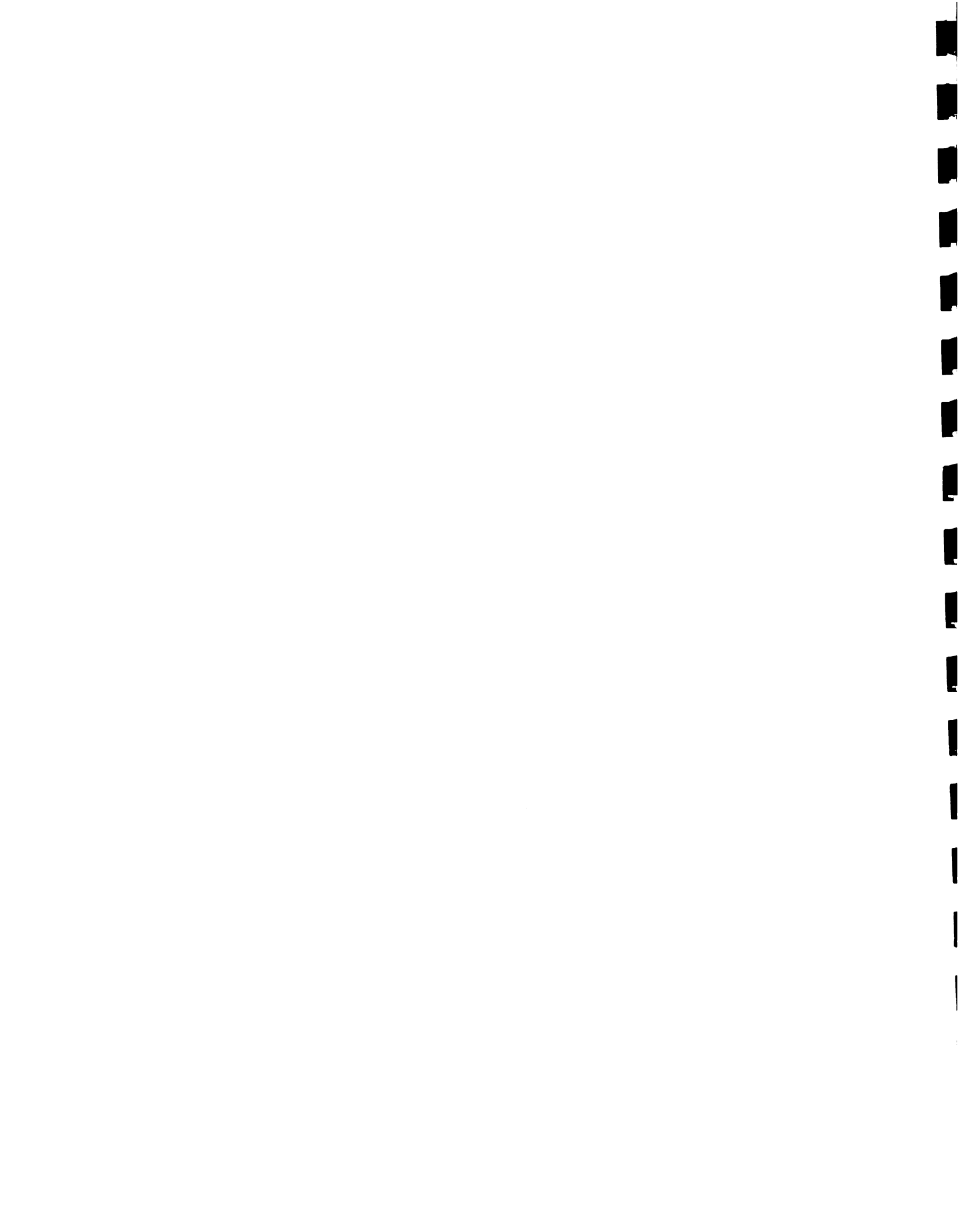


FIGURE 7.1
Total GDP and GDP of Agriculture & Manufacturing in Constant Prices

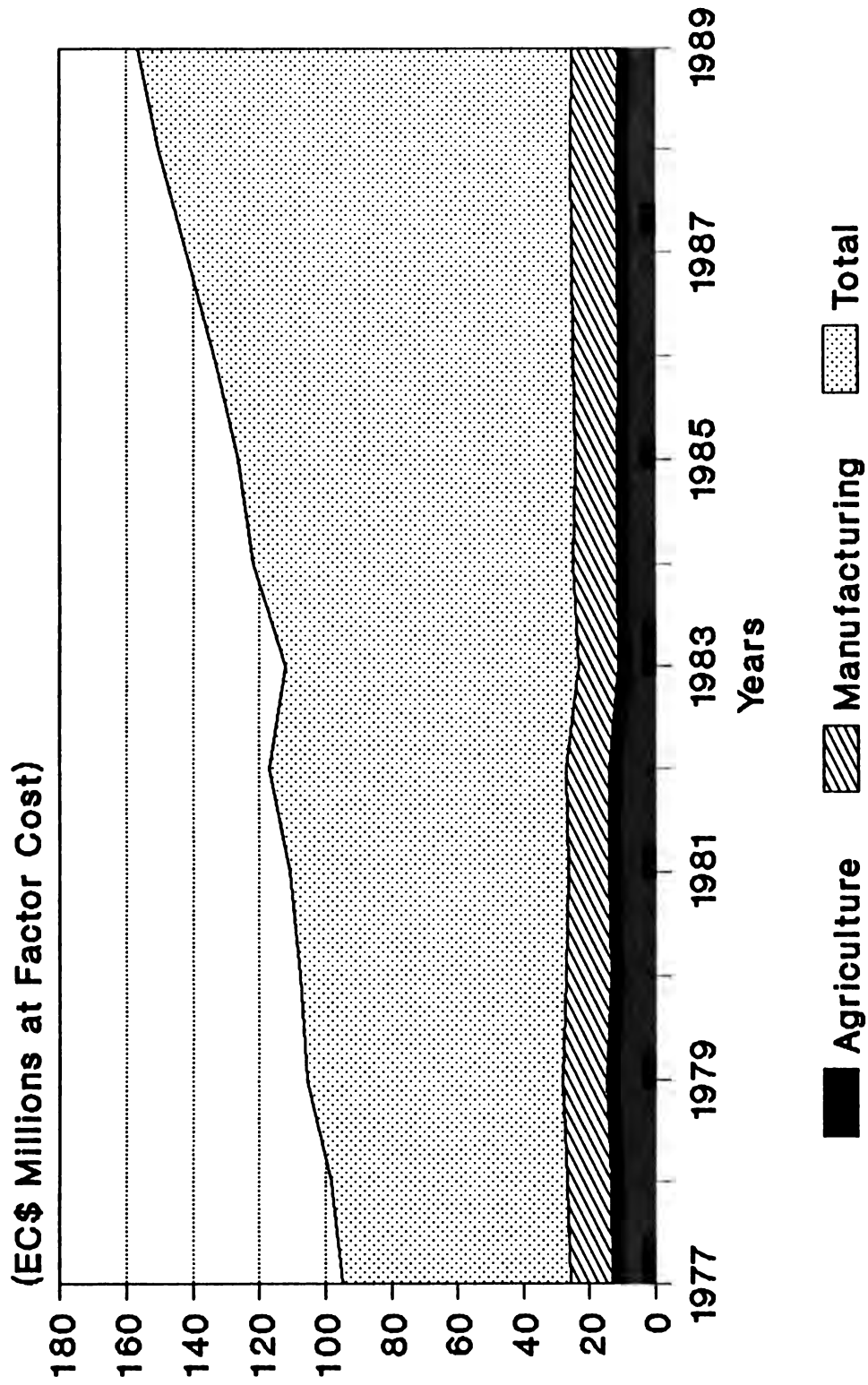
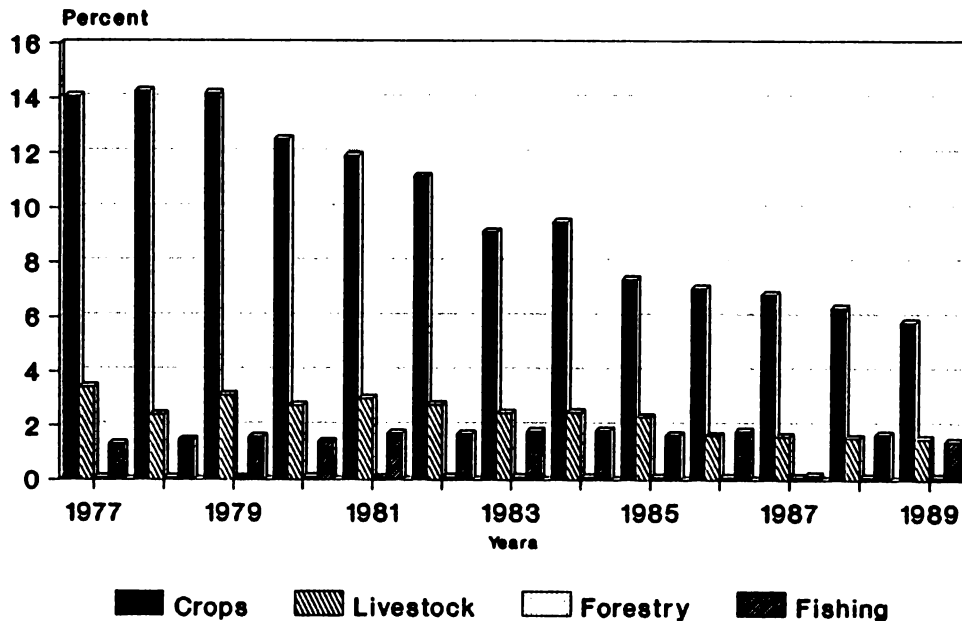




FIGURE 7.2
Agriculture Contribution to GDP
by Sub-sectors (%)



to about 32,400 mt in 1985. The declining trend in production continued from 1986 to 1989, except a modest 1.1% increase in 1988. In 1989, there was a further decline in output by about 3%, partly the result of a reduction in average yield per hectare due to harvesting problems associated with acute labour shortages in the harvesting season and unfavourable weather conditions. The sub-sector's performance was again poor in 1990 with output declining by more than 10%, as a result of damage sustained by the sugarcane crop from Hurricane Hugo in 1989 and the continuing shortages of labour.

The contribution to GDP by the livestock sector has also trended downwards in the last decade. However, non-sugar agriculture has performed better in recent years. Output of fruits and vegetables grew by an estimated 9.3% in 1989 following a decline in 1988, mainly on account of a significant expansion in white potato production. Output of potatoes increased in 1989 by about three-fold over the previous year to nearly 700,000 lbs.

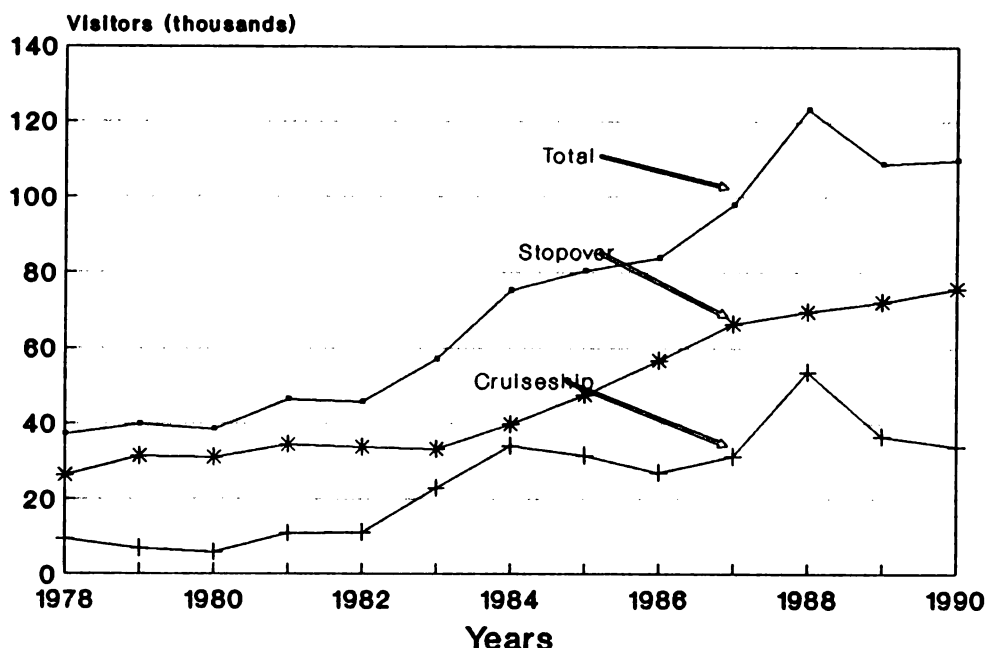
The fishing and forestry sub-sectors has contributed an average of 1.6% and 0.1% to GDP respectively. However, the performance of fishing and related activities declined in 1989 after a positive growth trend in previous years. There were severe damages done to fishing boats and equipment by Hurricane Hugo.

Like the agricultural sector, the relative contribution of the manufacturing sector to GDP has consistently declined, from 18% of



FIGURE 7.3

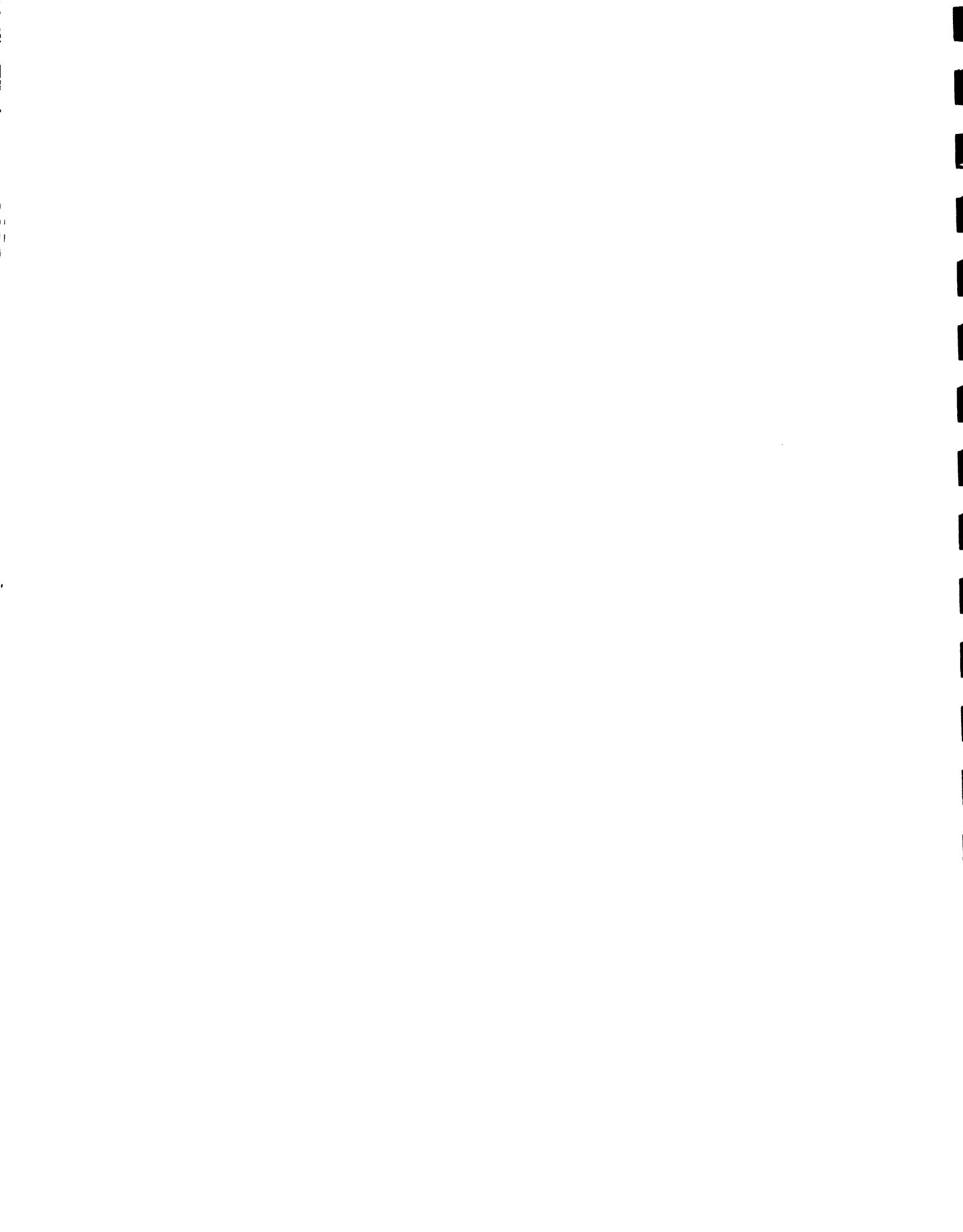
Total Visitor Arrivals and Contribution
by Cruiseship and Stopover Passengers



GDP in 1977 to 10.6% in 1989. However, the sector has experienced a real growth rate of 1.0% per year and its performance has largely been influenced by the developments in the sugar industry. In recent years, the sector's performance has been mixed. Real value-added grew at a slower pace in 1989 of 1.2% compared to 3.4% in the previous year. With respect to non-sugar manufacturing, real output again increased by 4% in 1989 compared to 4.9% in 1988 and 6% in 1987 respectively. This growth reflected expansion in operations of existing plants and establishment of three factories for the production of pasta and snack foods, plastic products and aluminum building materials respectively.

Both the construction and tourist sectors have steadily expanded over the last decade. Real output of the construction sector has increased by more than 15% in the last four years, largely as a result of increased public sector investment in the South-East Peninsula Highway project, construction of a tourist complex downtown and renovations of commercial and residential buildings.

The tourist sector has emerged as a major economic activity in recent years with consistent increases in tourism arrivals (see figure 7.3). Its share of GDP has increased from 3.8% in 1984 to 6.1% in 1988, while real value-added increased at an average rate of about 33% between 1984 and 1987. Growth in 1988 and 1989 slowed considerably and the sector registered a decline of about 1.3%.



There were declines in total arrivals mainly because of the decline in cruise ship visitors. This was largely due to changes in the routes by some cruise ships and financial problems experienced by one line.

The services sector continues to be the largest contributor to GDP. Its performance in recent years however reflects a steady decline, from 23.2% of GDP in 1984 to 19.8% and 18.9% in 1988 and 1989 respectively. Real growth was experienced in 1989 mainly because of growth in the wholesale and retail trade (2.8%), transport (6%) and communications (22.9%).

7.1.2 Trade and the Balance of Payments

The balance of payments of SKN has three main features. First, the balance of payments is treated differently from that of most countries, mainly because the country is a member of the Eastern Caribbean Central Bank (ECCB). As a result, trade in the currency area is treated within the balance of payments. In addition, the monetary arrangements provide for changes in official reserves to be reflected by changes in the country's position with the ECCB and the government's net foreign assets.

Second, the balance of payments reflects the high degree of openness of the economy and its declining dependence on exports of sugar. The trend in the last decade indicates that the total value of imports and exports account for about twice that of GDP. The trade dependence on sugar exports although substantial, has rapidly declined during the period. The contribution of export earnings from sugar to total exports of goods and non-factor services declined by more than 50% in the period, from about 45% in 1980 to less than 20% in 1989. While sugar's contribution to export earnings have been influenced by sharp fluctuations in production and prices, it is the relative decline of sugar in the economy that has largely accounted for its reduced role in foreign trade. Most of the country's external trade is done with the UK and USA which are also the country's main export markets for sugar.

Third, the balance of payments shows large trade and current account deficits. The trade performance since 1980 indicates that the resource balance gradually decreased between 1980 and 1983, improved slightly in 1984 and then sharply deteriorated since 1985. The trade deficit (including non-factor services) has averaged more than 30% of GDP during the period. In the last three years, transfers (both private and public) have contributed substantially to the current account, estimated to be an average of 12.5% of GDP.

7.1.3 Investment and Savings

With the exception of a few years, the volume of investment has traditionally been large during the period 1980-89, accounting

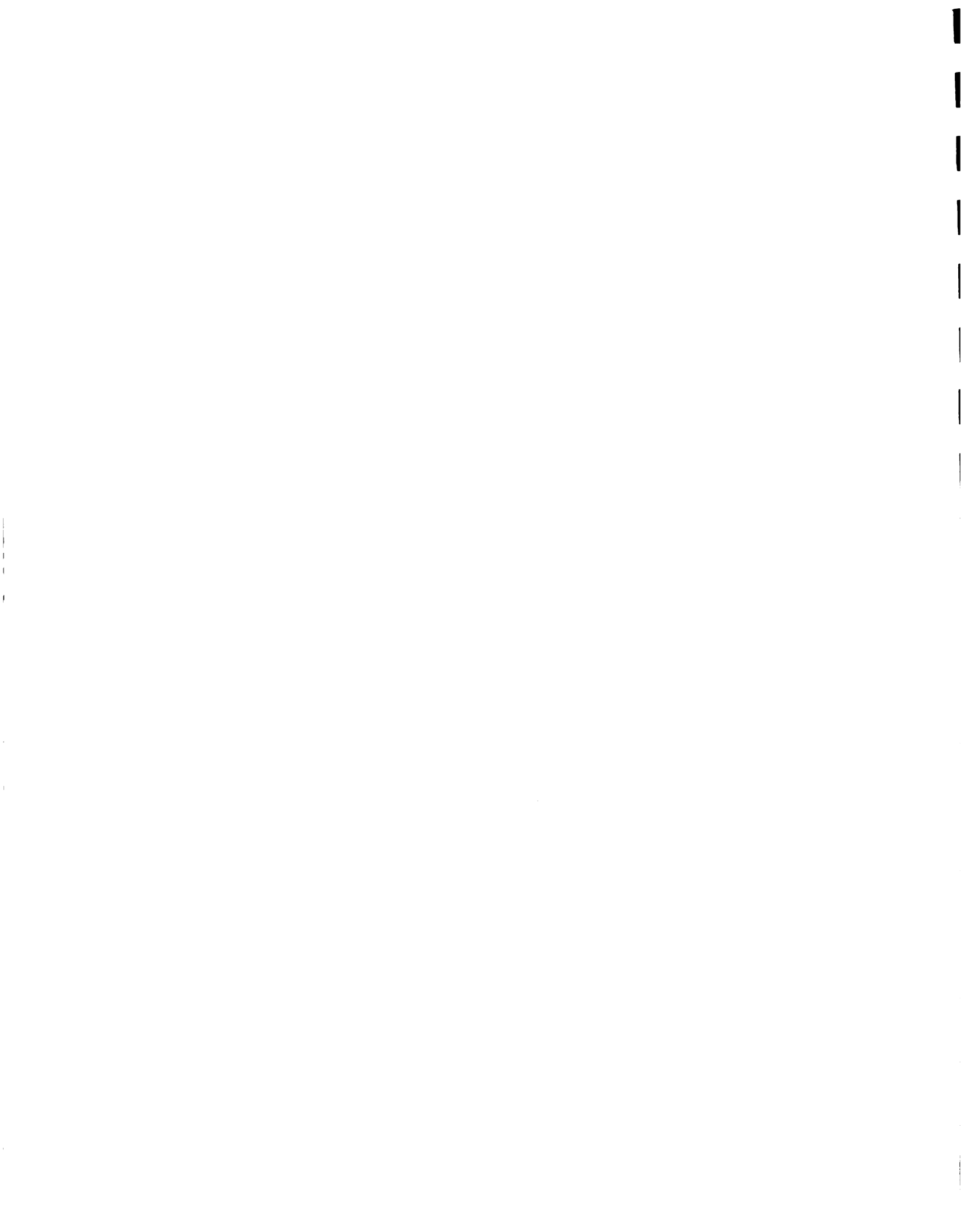
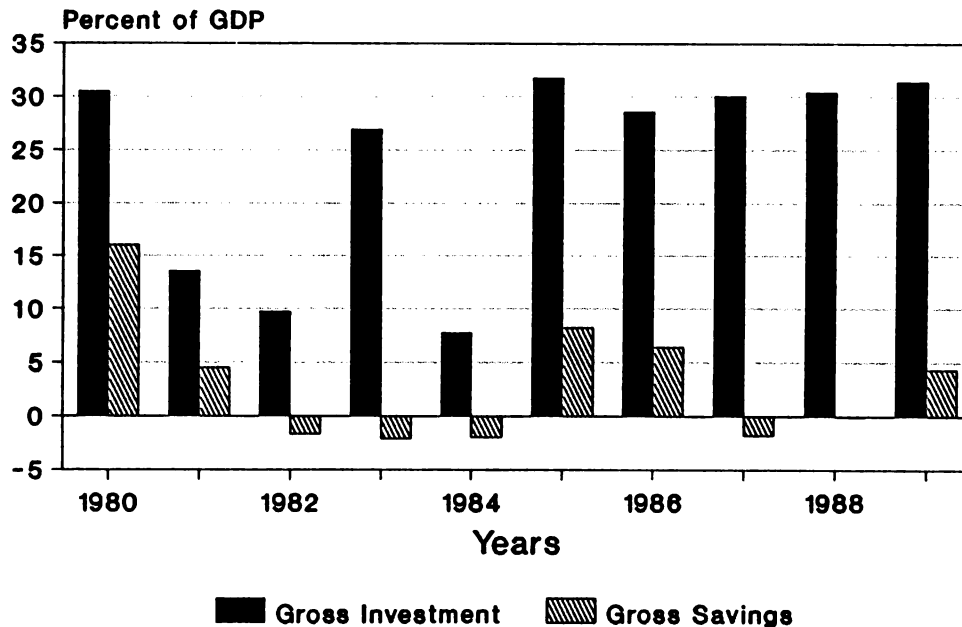


FIGURE 7.4

Gross Domestic Investment and Gross Domestic Savings as a % of GDP



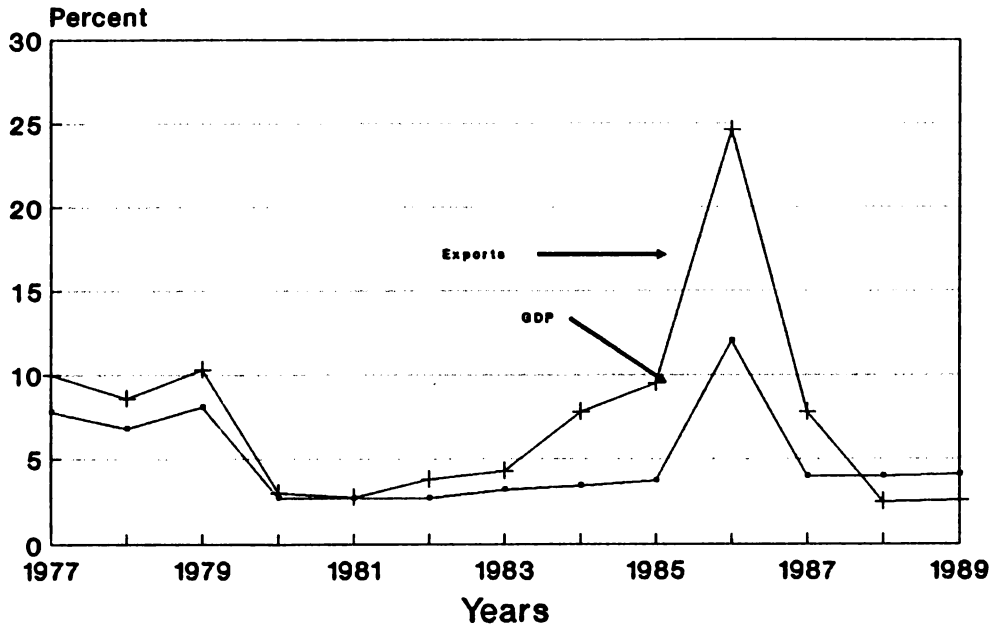
for more that 25% of GDP, of which more than half has been executed by the public sector (see Figure 7.4). In addition, external sources has been the main source of investment finance. However, since 1984, there has been a declining trend in public sector investment, reflecting the worsening of public sector finances. On the other hand, private sector investment has increased in the last few years, mainly because of rehabilitation and expansion of the tourist sector, the South east Peninsula project and other private sector construction activities.

In general, the trend in gross domestic savings have been cyclical during the last decade. Since 1978, domestic savings have gradually declined, becoming negative in 1981, but sizeable transfers from nationals abroad accounted for gross savings being positive that year. Since 1982 however, the transfers from abroad have been insufficient to offset negative domestic savings. To a large extent, the trend in savings reflects the adverse effects of lower export earnings from sugar and expansion in domestic consumption. As result, foreign savings comprising mainly official grants and concessionary loans have been the prime source of investment finance. The availability of concessionary financing in the future from external sources is becoming increasingly limited. As a result, there is the need to improve the rate of domestic savings and impose taxes to curb consumption of luxury items.



FIGURE 7.5

Debt Service
(as a % of GDP and Exports)*



*Export of Goods and NFS

7.1.4 National Debt

The gross external debt of SKN is low compared to most developing countries. At the end of 1989, total outstanding debt was EC\$89.9 million or 69 percent of GDP. Most of this debt is on highly concessionary terms, between 4% and 6% interest rate. Except 1986, debt service payments for amortisation and interests have also been relatively low, amounting to less than EC\$6.0 million per year.

With the exception of 1979 and 1986, the ratio of debt service to exports of goods and services and GDP respectively has been less than 10 percent (see figure 7.5). The primary reason for the substantial increase in the ratio in 1986 has been the charges on outstanding obligations of the government with respect to acquisition of sugar lands in 1975, and an increase in the interest charges on the external debt contracted to pay for the same lands.

7.1.5 Money Supply and Credit

As indicated before, SKN is one of seven members of the ECCB and the country's financial sector is subject to regulations of that Bank. The ECCB is empowered to regulate and oversee the



operations of the commercial banks such as setting reserve requirements and interest rates on deposits and loans. The operations of the ECCB also impose strict discipline on the implementation of monetary policy by member countries. For example, the Bank is obliged by statute to maintain a foreign exchange reserve of no less than 60% of the value of currency in circulation and other demand liabilities and strict ceilings are placed on loans granted to member governments. As a result of ECCB's regulations, a tight monetary policy is maintained in SKN.

During the period of the 1980s, there has been a steady growth of the money supply (which comprise the total monetary liabilities of the banking system) but cyclical changes in private and public sector deposits. Deposit liabilities are largely influenced by the performance of specific economic sectors, namely sugar, construction and tourism. Public sector deposits are predominantly lodged at the government-controlled National Commercial Bank, the funds mainly coming from the national insurance scheme.

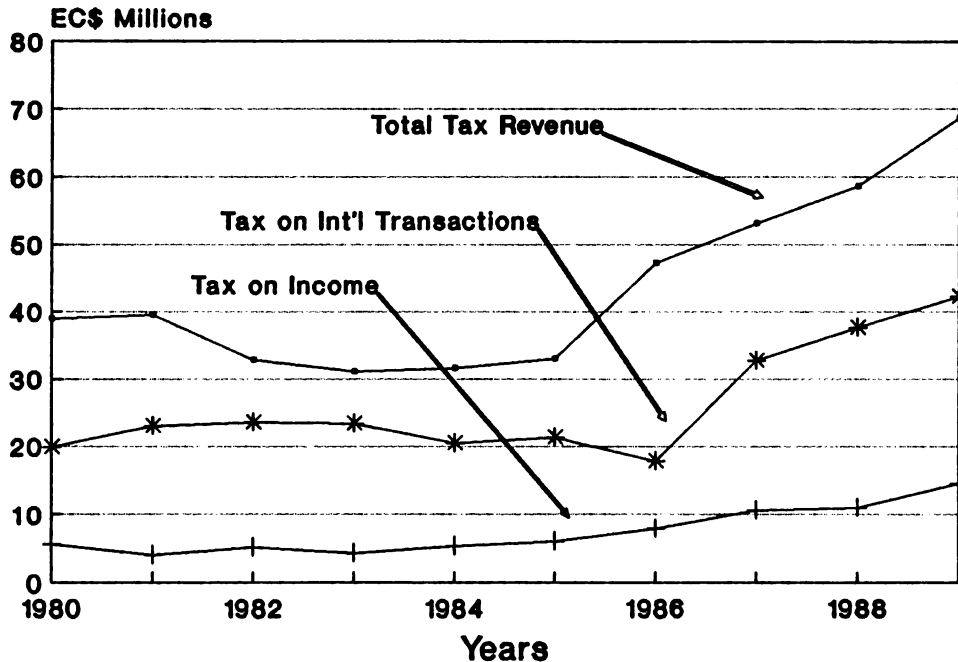
There were two periods of a tightening of the liquidity situation during the last decade. In late 1983 and 1984, there was a liquidity squeeze that caused many local banks to seek longer term private sector deposits. There has also been a further tightening of liquidity in the commercial banking system in recent years. This is indicated by an increase in the ratio of loans and advances to deposits in 1989 and 1990 which is the result of a relatively higher rate of increase in loans and advances. In 1989 and 1990, the rates of growth of deposits were 7.7% and 6.0% respectively while the growth of loans and advances were 11% and an estimated 12.5% respectively. Associated with these developments was a contraction in net foreign assets of the banking system of 2.4% in 1989 and a marginal increase in 1990.

In general, bank credit has increased at a faster rate than the growth in deposits. The growth in credit has largely been influenced by a deterioration of public sector finances and fiscal difficulties of the sugar industry. Growth has also been influenced by changes in consumption by the private sector and the working capital needs of the trade sector, which in turn was largely influenced by growth in manufacturing, tourism and construction and wage increases in both the private and public sectors.

With respect to sectoral distribution of credit, lending to agriculture and manufacturing respectively has averaged less than 10% of total commercial bank credit in the last decade. A large proportion of credit to agriculture has been channelled into the sugar sub-sector. In the last two years, the sectoral distribution of credit indicates a strong demand in the productive sectors, namely agriculture (mainly sugar), tourism and manufacturing. Lending to the productive sector increased by 26% percent in 1990 compared to 30% in 1989.



FIGURE 7.6
TOTAL TAX REVENUE AND REVENUE ON
INTERNATIONAL TRANSACTIONS AND INCOME



7.1.6 Fiscal Policy and Taxation

SKN applies more than 20 different kinds of taxes, with several of them having a number of sub-categories in their application to different commodities or to different enterprises. Tax revenue has accounted for about 75% of total current government revenue. With no taxes on personal income, the government has increasingly relied on indirect taxes for revenue. More than 50% of total tax revenue is provided by international trade and transactions, particularly through consumption tax and import duties (see Figure 7.6).

The dependence on import duties, consumption tax and corporate taxes as a source of revenue makes them very sensitive to tourism and changes in other economic activities. Import duties in particular, is very significant since an estimated 40% of tourist expenditures go directly for payment of imported items. Most consumption taxes are ad valorem rates applied to the c.i.f value on selected imports. The average rate is about 8%. There is also a consumption tax on some domestic services and goods manufactured in St. Kitts and Nevis.

While the government has granted certain exemptions to the agricultural sector (duty free equipment, etc.), the manufacturing and tourism sectors have benefitted relatively more from fiscal concessions. Both domestic and foreign developers in these sectors

are granted a range of exemptions from certain taxes under the **Fiscal Incentives Act**. These include lengthy tax holidays of up to 15 years, exemption of duties on materials and equipment, repatriation of profits and dividends, access to fully developed industrial estates and duty free access to major markets. These incentives have contributed in a large measure to the growth in enterprises involved in electronics assembly, plastics, footwear, apparel, food processing and tourism.

7.1.7 Public Sector Operations

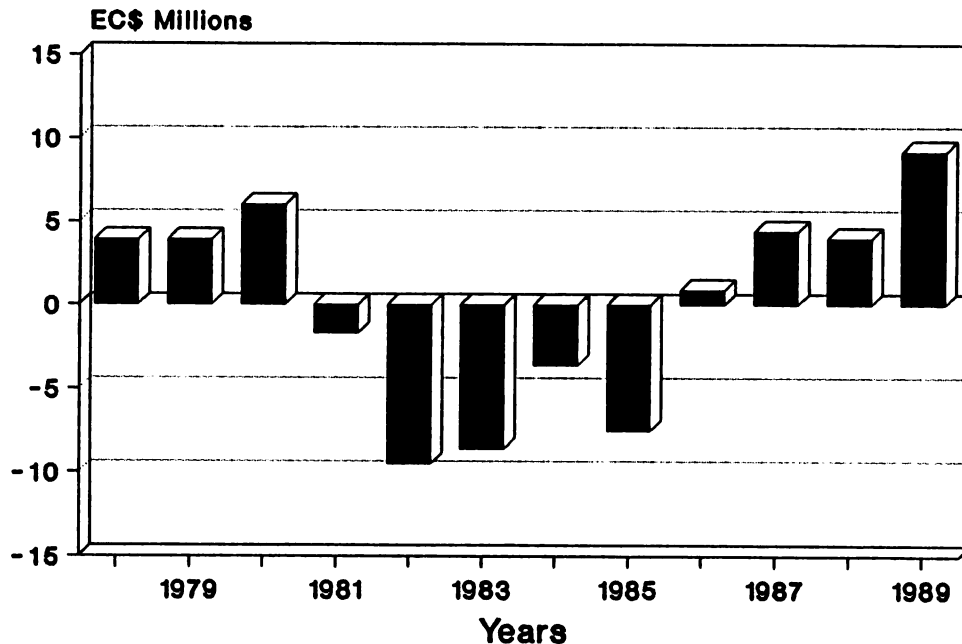
The public sector of SKN is large, accounting for about 45% of GDP. The sector comprises the Central Government, St. Kitts Sugar Manufacturing Corporation (SSMC), Social Security Scheme, Central Marketing Corporation (CEMACO), Frigate Bay Development Corporation, the Port Authority and the St. Kitts-Nevis Development Bank. The Government also controls 60% of the shares of the St. Kitts-Nevis-Anguilla National Bank.

The fiscal performance of the public sector has been largely determined by two main elements: revenues from sugar and wage policy in the public sector. During the first half of the 1980's, the performance rapidly deteriorated as a result of the complete suspension of revenues accruing from the sugar levy and increases in salaries of public sector employees (see figure 7.7). The major cause of the fiscal problem has been the poor performance of the sugar industry (via a reduction in sugar prices) and the government's inability to benefit from the sugar levy. To a large extent The government has been a net contributor to the industry. There was also a 45% increase in public sector wages and salaries in 1981, which contributed to a decline in public sector savings. During this period, the current account balance of the central government declined from a positive 4.5% of GDP in 1980 to 4.8% in 1985. This deficit was largely financed by resources from the domestic banking system, in particular, the government-controlled National Commercial Bank.

Since 1986, the fiscal situation, particularly with respect to central government balances has consistently improved. The current account surplus increased from 0.4% of GDP in 1986 to 1.4% in 1988 and 3.0% in 1989. This was due mainly to a larger increase in revenue collected in this period which was accompanied by a stabilisation in the level of expenditure. Current revenue, as a proportion of GDP, increased from 23% in 1986 to 29.8% in 1989 while there was a marginal decline in expenditure. The higher revenue was a result of an improvement in the efficiency in revenue collection; most components of tax revenue increased and tax yields on international trade and transactions were substantially higher. These factors together with a decrease in capital spending and net lending also contributed to a reduction in the overall fiscal deficit in the last few years.



FIGURE 7.7
Central Government Current Balances
1979-1989



With respect to expenditure, total outlays on wages and salaries increased by 7.1% in 1989 reflecting wage increases to public sector workers. However, this component of expenditure decreased relatively as a percent of GDP. Expenditures on goods and services and interest payments also decreased at slower rates compared to previous years. On the other hand, capital expenditure continued to lag behind that anticipated by the government mainly because of weaknesses in the system for programming such activities. This has resulted in many projects remaining unfunded by the end of 1989. The continuation of work on the South Eastern Peninsula, work on the Bay Road tourism complex and expenditure on electricity generating equipment comprised the main areas of capital spending in 1989.

7.1.8 Employment, Wages and Prices

Agriculture has remained as the single most important employer, accounting for about 25% to 30% of the working population. The service sector, comprising trade, hotels and other services employ another 30%, closely followed by manufacturing which accounts for nearly 20% of the labour force. During the 1980's, the expansion in tourism and construction together with changes in manufacturing were the main factors influencing growth in employment. The tourism sector has rapidly expanded and it is estimated that employment in this sector doubled during the decade.



Table 7.1
Employment by Sector, 1980-1990

Sectors	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Garment Industry	807	887	605	714	786	664	864	671	815	500	439
Electronic Industry	297	481	463	481	559	767	709	764	711	985	964
Beverage	107	113	111	116	110	116	105	111	110	129	174
Hotels & Guesthouses	373	345	392	377	443	467	525	463	522	694	669
Construction	137	153	221	382	225	227	250	270	246	750	636
Sugar Industry	4259	3927	3455	2932	2982	2840	3046	2840	2617	2103	2300
N.E. Workers	680	683	683	655	676	679	656	-	-	670	680
Total	6660	6589	5930	5657	5781	5760	6155	5119	5021	5831	5862
Total	6660	6589	5930	5657	5781	5760	6155	5119	5021	5831	5862

Source: Ministry of Labour, St. Kitts & Nevis.

Table 7.1 shows employment in main sectors of the economy during the last decade. The overall trend indicates that employment has declined during the period, with the largest decline occurring in the sugar and garment sectors. Although the sugar industry remains the largest employer in the country, there has been a decline of almost 50% of labour employed in field and factory operations in the period 1980 to 1990. The available data also indicate a shift towards increased employment opportunities in the buoyant electronic, construction and hotel sectors.

Official data on unemployment is not readily available on SKN, but unemployment and underemployment is estimated to have fluctuated between 10% and 20% during the last decade. However, it is felt that the unemployment rate has decreased in recent years as a result of a significant increase in activities related to construction, tourism and related services and non-sugar manufacturing, with labour shortages even occurring in certain areas. Partial data on employment in 1989 indicates that there were increases of 18% and 5.7% in the hotel and non-sugar manufacturing sectors respectively.

With respect to wages, there are two main features in the rate changes over the last decade. The first is rate increases since 1977 have on average been higher than changes in inflation rates. The second feature is that private sector wages have consistently increased over the period because the labour market has been under intense pressure from rapidly expanding private sector activities, particularly those in tourism and construction.

Wages of public sector workers increased by 40% in 1978 due to a rapid rise in the cost of living. In the 1980's, these were further increased by between 40% and 50% (depending on the income level) in a salary review of 1981, followed by a period of general wage restraint between 1982 and 1985. As a result of wage settlements in 1986 and the need to stem the loss of professional staff from the public sector, average increases of 22.5% and 20%



were made in 1986 and 1988 respectively. In the sugar industry, annual wage increases were between 10% and 15% between 1977 to 1981, but this was decreased to 3% in 1982 as a result of a decline in sugar prices. Special bonuses to sugar workers also declined when sugar prices decreased. Wage increases in this industry have also been relatively less than that of the private sector and this has contributed to labour shortages in the sub-sector.

Table 7.2
Selected Price and Wage Indicators, 1980-1989

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
GDP Deflator*	13.4	10.8	3.6	4.4	3.4	2.1	15.9	5.7	4.0	3.4
Consumer Prices	17.8	10.4	5.9	2.3	2.8	2.7	-0.1	2.6	0.2	6.6
Import Prices	21.7	5.3	-1.7	-2.6	-1.0	-1.1	-2.2	5.7	5.6	5.9
Government Wages	...	40-50	...	...	...	...	22.5	...	20.0	...
Sugar Industry Wages	25.0	10.0	3.0	1.5	2.0	...	4.0	...	5.0	...
Private Sector Wages**	27.5	37.5	12.7	8.3	8.0	6.3	6.5	8.2	7.8	8.3

* For 1985-1989 at factor cost.

** For 1985-1989 represents a weighted average of two firms, St. Kitts Enterprises and St. Kitts Breweries.

Sources: (1) World Bank Document, St. Kitts & Nevis Economic Memorandum, 1985 & 1988.
(2) Ministry of Labour, St. Kitts & Nevis.

As shown in Table 7.2, wage increases in the private sector have averaged more than 6% per annum during the last decade. These increases have had implications on inter-sectoral shifts in labour supply as well as the comparative advantage of St. Kitts and Nevis vis-a-vis other countries in specific areas of production. As indicated before, higher wages in the private sector have resulted mainly from increased private sector activities and pressures on the labour market. The electronics industry in particular, have experienced a shortage of skilled workers in recent years with consequent upward pressure on wages. Data for 1989 from the Ministry of labour indicates that average weekly wages for labourers, semi-skilled and supervisory employees in the tourism and construction sectors were between 30% and 50% higher than those of comparable categories of workers in the garment and electronic industries. Data for 1988 and 1989 also show that average weekly wages for various categories of workers in the garment industry in SKN were 25% and 45% higher than wages of similar workers in Jamaica and Haiti.

Price changes in SKN are largely influenced by international price trends due to the openness of the economy. Compared with most Caribbean countries, the rate of increase in the official consumer price index has been very low and the trend indicates that the rate of inflation has gradually decreased since 1980, remaining at less than 3% during most of the decade (see Table 7.2). Moderate changes in import prices, particularly between 1982 and



1986 has largely contributed to low inflation rates. It is believed though that the rate understates the true value of inflation due to limitations in coverage and weighting. However, increased economic activity and higher average prices in the food sub-index (which is the largest share in the consumer goods basket) in 1989 were accompanied by a sharp rise in consumer prices of 6.6% compared to rates of 2.6% and 0.2% in 1987 and 1988 respectively. The movements in prices during these years also reflect in large part, higher import prices as a result of high inflation rates in major trading partners and pressures of demand on domestic resources.

With respect to price control and import restrictions, the Supply Office of the Ministry of Industry and Trade is responsible for the issuance of import licenses. Regarding agricultural products particularly fresh produce, import restrictions do exist but these are implemented based on the recommendations of the Department of Agriculture.

There are price controls for a number of items but these have not been very effective, particularly in the last few years. The government sets the final prices for sugar, various consumer products, electricity and petroleum products and controls the profit margin of a number of food products including rice, flour and milk which are imported in bulk. However, with the exception of sugar, price control of most imported food items have not been rigidly implemented in recent years.

7.2 Macroeconomic Policy and Agriculture

Macroeconomic policies in SKN have both a direct and indirect impact on the agricultural sector. The principal policy variables which impact agriculture include exchange rate policy, government expenditure policy and trade policy. The implications of these policies on agriculture and resource use are transmitted through changes in inflation rates, real exchange rates and hence relative competitiveness of SKN's goods and services. In addition, the openness of the economy (as well as those of other OECs countries) makes it more sensitive to changes in these variables.

As indicated before, SKN shares a common currency with other OECs countries that is managed by the ECCB. The exchange rate can only be altered by unanimous agreement and the operations of the system provide it with stability. However, although the OECs do not experience similar rates of inflation, sharing a common currency places a limit on the extent to which inflation rates differ. Changes in inflation rates imply changes in the real exchange rate and this in turn affects external competitiveness. SKN can therefore be affected by changes in the real exchange rates as a result of impacts of macroeconomic policies pursued by the OECs countries. In addition, because the EC dollar is linked with

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the US dollar, changes in inflation rates in the OECS vis-a-vis that of the US will impact on the real exchange rate and export competitiveness of SKN.

One feature of the countries is that there has been a persistent excess of aggregate expenditure over total real output in the last decade which has affected the real exchange rate. The World Bank findings indicate that the excess in aggregate expenditure in SKN impacts the domestic price level and will in turn affect the external balance, only if resources do not move into production of non-traded goods¹. In the last five years, the resource gap of SKN has persistently increased with pressures placed on the balance of payments. Domestic prices in recent years have also showed signs of moving upwards which have implications for the competitiveness of the country's exports.

The role of bananas is critical to the external trade position of the OECS countries and to stability of real exchange rates. Although SKN does not produce and export bananas, this commodity has much significance on the OECS as a group due to the possible impact of a sharp fall in its future price. Basically, a sharp fall in the real price and output of bananas would put severe pressure on the balance of payments of banana-producing countries in particular, but also on the sub-region as a whole. Because of the fixed exchange rate regime, the spillover effects will be on the region's holdings of foreign reserves, and ultimately on the stability of the exchange rate system.

The government's tax and expenditure policies have also impacted on the agricultural sector indirectly. By providing attractive incentives to the tourism and manufacturing sectors, these have expanded by partly diverting resources (particularly labour) away from the agricultural sector. The reduced competitiveness of agriculture vis-a-vis tourism, construction and manufacturing is further compounded by the government's wage policy which contributes to labour shortages in the agricultural sector. The upward pressure on wage rates also impact on the export competitiveness of SKN's goods and services including agricultural products.

7.3 National Development Strategy

The economy of SKN has experienced fairly strong economic growth in the last decade, a result of high levels of grants and concessionary financing, fairly high levels of foreign investment and expansion of tourism and construction. Also, as a result of increases in the size of the services and non-sugar manufacturing

¹. World Bank. **Long-Term Economic Prospects of the OECS Countries.** Report No. 8058-CRG, Washington, D.C., February 1990.



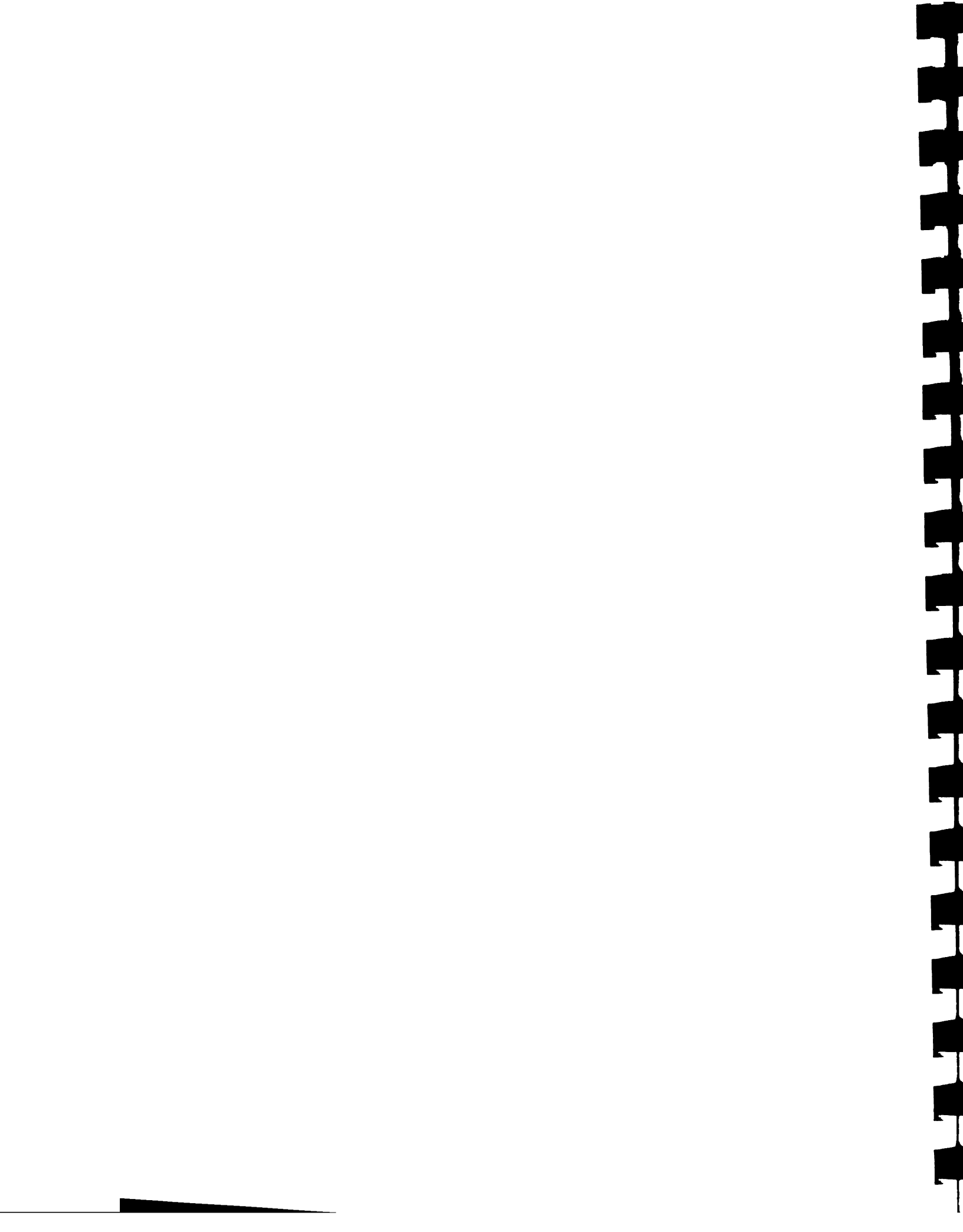
sectors, the economy has diversified to some extent during the period. However, two factors, the high levels of concessionary financing and growth in tourism may not be favourable in the 1990's, mainly because of the scarcity of foreign capital and competition for tourists by other destinations including various Caribbean countries. In addition, the poor performance of the agricultural sector, particularly sugar has dampened economic growth and there is uncertainty about the future of the industry.

Although the manufacturing sector is relatively diversified, it is confronted with a number of problems which can affect its medium term growth. First, the closure rate of firms during the last decade has been high. It is estimated that on average, there is one closure for every two new firms. The sector also relies heavily on the regional market, but economic growth in the various countries together with new trade barriers have affected the sector's export potential.² In addition, high wage rates have contributed to SKN rapidly losing its competitiveness in labour-intensive manufactured products such as garments and electronic products. To address these problems, strategies should be directed at upgrading the sector's technology and increase labour productivity if it is to remain competitive in both regional and extra-regional markets.

The tourist sector has grown rapidly in the last ten years and has made a significant impact on the economy. However, the sector's growth has had some negative impacts on other sectors of the economy. In particular, tourism along with construction has driven up wage rates and created a wage disparity between sectors. This has affected labour availability to other sectors, as well as created pressures on the economic viability of affected enterprises. The rapid growth in tourism has also impacted land prices and the environment. An integrated strategy for developing tourism and other sectors should be pursued to minimise the existing wage disparity between sectors and the negative impacts of tourism on the environment. This strategy should include attracting specific firms which can attract highly skilled labour, improving labour skills and continually upgrading technology in sectors which compete with tourism for labour resources and a land use policy which contributes to sustainability of the environment.

The development challenge for SKN therefore is to surmount the potential problems with appropriate strategies so that economic growth can be sustained in the medium and long term. Efforts should be also directed to rationalise operations of the sugar industry, encourage the growth of private investment in potential growth sectors through public policies and supported by the

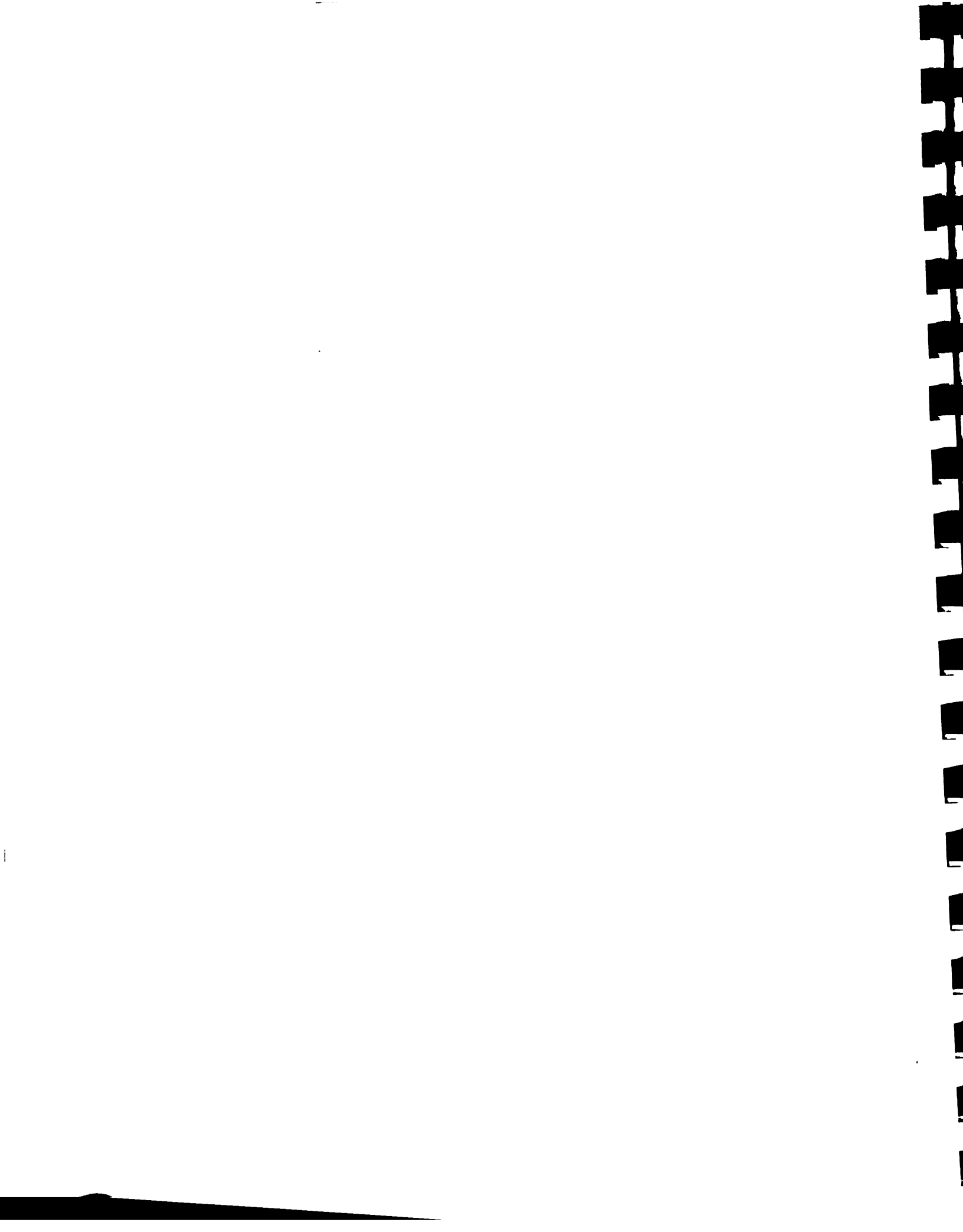
². Implementation of the CET and Rules of Origin in CARICOM should resolve some of these problems.



provision of suitable public infrastructure, increase domestic savings and keeping external debt service to manageable levels.

The Government of SKN has recognised the problems and development challenges for the future. It has attempted to address these by various strategies outlined in its National Development Plan (1986-90) and its annual plan for the economy (as indicated by its budgetary proposals). The principal elements of these strategies include the following:

- (a) The free-market competitive system is to be the basis of the economic structure of the country. While the Government's contribution to the national economy has been substantial, it seeks to minimise its role, keeping it to being a catalyst for economic development.
- (b) Economic diversification is the central focus of the government's policies and strategies. The government's role in the process will be facilitatory and regulatory.
- (c) The economic strategy seeks to provide a more structurally balanced economic base which will be dependent on such sectors as agriculture, tourism, manufacturing and construction. Of these, the first three will be the major thrust of the development programme and the principal sources of foreign exchange earnings.
- (d) The government seeks to enhance mobilisation of both domestic and foreign capital simultaneously through implementation of appropriate policies and programmes. The public sector investment programme (PSIP) will be the main instrument for mobilising capital. The interest rate policy will seek to provide incentives for domestic savings as well to channel capital into priority areas.
- (e) The level of public sector capital spending will be a critical factor in determining growth in construction and distribution.
- (f) The strategy also seeks to minimise the rate of inflation and the size of the government's deficit while increasing employment opportunities, the rate of domestic savings and investment.
- (g) Fiscal and budgetary policies will be used to improve public sector accounts, enhance revenue collection, rationalise expenditures and provide incentives to the productive sectors of the economy.



7.4 Agricultural Development Strategy

As indicated before, the agricultural sector has performed poorly over the last decade. Sugar production, which is the main activity in the sector has declined over the period and the financial viability of the industry has been severely reduced. The industry has been also affected by the buoyancy of tourism and construction sectors which has attracted labour from the sugar sector. A strategy to improve the viability and competitiveness of the industry is critical for its medium and long-term survival. This strategy should include a rationalisation of the industry's management structure and operations through joint ventures, upgrading plant and equipment to increase efficiency, seek alternative uses for sugarcane and achieve financial self-sufficiency in the medium term.

Non-sugar agriculture has remained small but its relative importance in the sector has increased. However, the sector is affected by a number of constraints including the poor performance of the sugar industry and its burden on the national treasury, the existing land tenure and land distribution system, the reduced viability of small farms, inadequate infrastructure and weak institutional support including marketing and sectoral planning.

The government has embarked on an agricultural development strategy (1986-91) to address the constraints of the sector and reactivate its role in the economy. The main thrust of the strategy is to effect structural adjustments in the sector through acceleration of the process of agricultural diversification. The principal elements of this strategy include:

- (a) Pursuit of a programme of agricultural diversification with major emphasis on food crop production and the development of fisheries, livestock and forestry.
- (b) An improved land-use and land tenure policy to address problems of insecurity and other constraints to production will be the basis for development of the sector.
- (c) Increased production and productivity have been targeted for all areas of agriculture with the aim of achieving self-sufficiency and increased import substitution for both crop and livestock products. This is to be achieved through improved husbandry practices and irrigation and water-delivery systems.
- (d) Improvement of the marketing system and marketing policy to facilitate production and disposal of agricultural products. The Central marketing Corporation will be strengthened, public market facilities will be upgraded and marketing outlets will be established in outlying



areas. In addition, efforts will be made to provide crop forecasting, production monitoring and to conduct market surveys both domestically and in neighbouring countries to identify market opportunities.

- (e) An upgrade of the physical infrastructure, particularly roads to facilitate transportation of inputs supplies to farms and farm produce to markets.
- (f) An improved incentive scheme to stimulate and encourage increased crop, livestock and fisheries production through the granting of duty free concessions, provision of loan facilities and granting concessionary credit through the Department of Agriculture.
- (g) Strengthen institutional support to the agricultural sector at the national, regional and international levels. This includes strengthening the Department of Agriculture to improve the delivery system of its services, planning and coordination with other sector-related and national institutions and increased involvement of regional and international institutions in the agricultural development process.



CHAPTER VIII

8. THE AGRICULTURAL SECTOR

8.1 The Environment

8.1.1 Geographic Location

The islands of St. Kitts and Nevis lie in the Northern part of the Leeward group of the Lesser Antilles in the Eastern Caribbean. They became an independent state in association with Britain in 1967 and achieved full political independence in 1983. St. Kitts and Nevis are separated by a Strait, known as the Narrows, a channel of about 2 miles in width.

8.1.2 Physiography

St. Kitts and Nevis with a total area of about 269 km² are entirely of volcanic origin with no known mineral deposits. The topography is characterised by a central mountain range surrounded by undulating plains ending in limited coastal flatlands. The fertility makes them suitable for sugar production and agriculture. However, water is not available in needed amounts all year and this is a constraint to intensive non-sugar crop production.

The soils are volcanic and susceptible to erosion. The major soil types are protosols and lactosols; the former is composed of beach sand and volcanic ash and have rapid drainage, are moderately fertile and predominant on sugar estates. The latter are mature soils of clay formation and are used for food crops, pasture and fruits. Unlike most areas, the sugar estates are rock free and the topography permits field size conducive to mechanisation. Although the soils are well drained and fairly fertile, fertilizers are required in areas that have been under production for many years.

Most of the land is subject to soil loss. Many fields have moderate to steep slopes and are exposed to heavy rains (114 to 127 cm) in the major crop growing areas. Erosion is contained fairly well on sugarcane lands because the crop is contoured and provides good protective cover. Gullying is causing some damage to both islands and farmers frequently plant crops on such land.

8.1.2.1 St. Kitts

St. Kitts (17°N, 62°W), the larger of the two islands, has a total length of 23 miles and its area is 68 sq. miles (176 km square). The island is roughly oval in shape with a narrow band of land extending like a handle from the south-eastern end. The main part of St. Kitts consists of a rugged mountain range, whose highest point is 3,792 feet (1156 m). A branch of the range encloses a spacious and fertile valley on the southeastern seaboard wherein lies the capital, Basseterre. This valley and the circle



of land formed by the skirts and lower slopes of the mountains constitute most of the arable and cultivable land of the island. The higher slopes are covered with short grass affording good forage while the upper slopes are covered with natural forests.

St. Kitts is of volcanic formation and most of its beaches are of black volcanic sand. There are old erosion gullies known as ghauts in the island which deeply intersect the pediment and rapidly drain away surface runoff from the mountains to the sea.

8.1.2.2 Nevis

The island of Nevis (17°N and 62°W) is located to the SE of St. Kitts. Nevis is 35 sq. miles (90 km. square) in area and ellipsoidal in shape, with a maximum length (north to south) of about 8 miles and a maximum width of about six and a half miles. The island is also of volcanic origin and arose from the same submarine bank as St. Kitts. The island is dominated by a central peak which rises in an almost perfect cone to 3,232 feet (985 m).

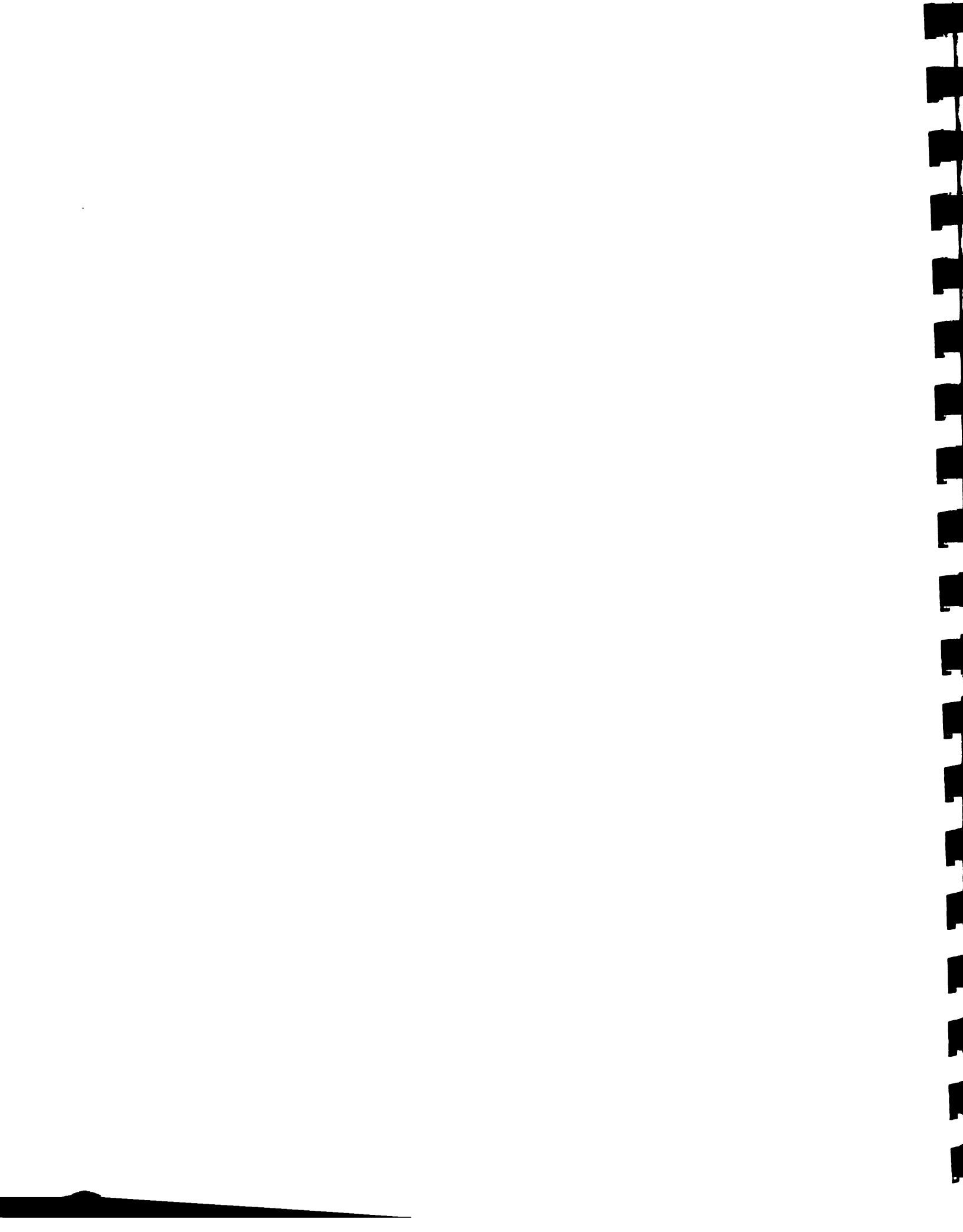
The upper slopes of the mountain (above 1,100 feet) are well-wooded. Whereas the soil of St. Kitts (except in the mountains) is light and porous, that of Nevis is stiff clay with volcanic boulders.

The top soil in Nevis has been eroded more or less completely from much of the shoal area, due to lack of soil conservation measures after the end of the cultivation of cotton and sugarcane. Soil erosion and consequent loss of top-soil have been due to combined effects of the abandonment of previously intensively cultivated land (sugar estates), clearing of forest for charcoal production and cultivation, high run-off from the relatively impermeable slopes and heavy over grazing.

8.1.3 Climate

The climate of St. Kitts and Nevis is sub-tropical and maritime with a marked dry season in the period January to April. It is usually mild with temperature ranging from 17 degrees celsius to 33 degrees celsius. The islands lie on the path of the north-east trade winds and the climate is influenced by a steady cooling breeze throughout the year. The prevailing winds are mainly easterly with velocities of 18 to 25 km per hour. Stronger winds may occur in the "hurricane" season July to September. The central core of volcanic mountain peaks also influences the climate and the soils of the Islands.

There are two rainy seasons in St. Kitts and Nevis. During the months of April to June, the average rainfall is about 9.9 cm per month and in the period August to October the mean monthly rainfall is about 12.7cm per month.



Rainfall increases proportionally with altitude and the annual rainfall, the intensity of storms and the length of the dry season are variable. Owing to the almost continuous cloud cover on the mountains, evaporation is low and the relative humidity is 100 percent, practically every night during the rainy season from August to November.

Precipitation is highly variable from year to year with an annual average of 137 cm. Annual rainfall increases with height above sea level. Along the coastal areas below elevations of 250 feet (75 m), the annual average rainfall is 130 cm. This increases with elevation and at places 600 meters above sea level the rainfall reaches 203 cm per year; above 600 meters it could be as high as 305 cm per annum.

In Nevis, average relative humidity varies from 70% in March to about 78% in September to November and down to 50% in the dry season. Average rainfall is about 125 cm with a wide annual range.

8.2 Resource Base

8.2.1 Population and Labour Force

SKN has a population of around 47,500 (mid-1989), of which 38,000 are in St. Kitts and 9,500 in Nevis. The population of St. Kitts is scattered in 43 villages comprising nine parishes of the island. It is estimated that more than 25% of the population is concentrated in and around the urban and sub-urban areas of the island's capital, Basseterre. An estimated 55% of the population of Nevis lives in the capital, Charlestown and its suburbs.

Compared to most Caribbean countries, population growth in SKN has been slow during the last two decades, averaging less than 1.0% per annum with negative growth rates being recorded in some years. For example, both SKN and St. Lucia had roughly the same population in 1891: by 1980, St. Lucia's population had almost tripled while that of SKN experienced a slight decline. Although the birth rate is fairly high, growth has been mainly affected by mortality rates and out-migration which have been exceptionally high (estimated at 27 deaths per thousand live births and 30 per 1000 respectively) in the last two decades¹. These two factors have contributed to a decline in mainly the 0-14 and 35-59 age groups respectively. Out-migration has been influenced by both "pull" and "push" factors such as economic opportunities abroad, high fertility levels and poor economic prospects at home.

With the exception of information on the sugar industry, data on the labour force in general and specifically on the agricultural

¹. The country is one of the few in the world to have a constant population in the last 100 years.



sector is not easily available. However, recent estimates suggest that the agricultural sector employs between 25% and 30% of the labour force, with the sugar industry being the single largest employer of labour, both in the agricultural sector as well as in the country. High rates of migration, particularly of the 35-50 years age group has been responsible for the relatively low rate of natural increase in the labour force, estimated at about 0.75% per annum in recent years.

Data available from the agricultural censuses of 1961, 1975 and 1986 indicate that total farm employment has declined by more than 50% in the last 30 years (Table 8.1). Furthermore, the decline in females employed has been more rapid than the overall reduction of labour in the sector. The reduction in the agricultural labour force is largely attributed to the decline of employment in the sugar industry and rapid expansion of the construction and tourist sectors. It is estimated that total employment in the industry (field and factory operations) declined by more than 50% alone from 1980 to 1989.

Table 8.1
Farm Employment in St. Kitts and Nevis

	1986	1975	1961
Total Number of Persons Employed on Agricultural Holdings	9,868	16,433	19,381
Males	6,124	9,531	...
Females	3,744	6,902	...
Hired Labour	3,294	4,491	7,472
Males	2,346	3,152	4,842
Females	948	1,339	2,630

Sources: Agricultural Census of 1986, 1975 and 1961

8.2.2 Land Area

Data on land use in SKN (except for sugarcane cultivation) is not very reliable; much of what is available is largely based on estimates provided by the agricultural census. The World Bank indicates that total farm land in 1971 was 24,515 hectares. The last agricultural census of 1986 shows that about 21,000 hectares of land is under agriculture including crop production, pasture, grassland, woodland and forests and other land. This represents very little change over the 1975 census data and a 15% increase since the previous census of 1961.

Table 8.2 compares land utilisation in SKN in 1975 and 1986. While there has been little change in the area under permanent crops, a significant reduction in land under temporary crops and



forests and woodland has occurred, mainly as a result of the expansion of the tourist sector and expansion in urban and sub-urban areas.

Table 8.2
Land Use in St. Kitts and Nevis, 1986 & 1975*

	1986		1975	
	Hectares	%	Hectares	%
Permanent Crops	1,004	11.3	983	8.1
Temporary Crops	4,105	46.3	6,046	49.8
Fallow	698	7.9	472	3.9
Pasture	1,623	18.3	1,066	8.8
Forests & Woodland	964	10.9		
Other land	474	5.3	650	5.3
Total Farm Land	8,868	100.0	12,146	100.0

* Excludes grassland.

Source: Agricultural Census of 1986 and 1975.

8.2.3 Arable Land/Land Capability

Based on a land use survey in 1966 (table 8.3), Lang and Carroll classified land according to suitability for agriculture. They concluded that about 26 percent was high quality agricultural land and 45 percent was fair. A small proportion of good land can be found in Nevis due to its topography and rocky conditions. However, a more recent reclassification may reveal less good land for agriculture due to loss of land for housing, roads and other development.

Table 8.3
Land Classification of St. Kitts and Nevis, 1966

Classification	St. Kitts	%	Nevis	%
Good Agricultural Soil	5,844	35.12	858	9.31
Fair Agricultural Soil	5,700	34.25	6000	65.10
Land suitable only for Forest	2,800	16.83	1120	12.15
Settlements and Sub-divisions	1,040	6.25	400	4.34
Poor Land	1,256	7.55	838	9.09
TOTAL	16,640	100.00	9216	100.00

Sources: (1) Department of Agriculture, St. Kitts

8.2.4 Roadways and Water Resources

The road system of SKN basically consists of a single, paved road girding each island, with dirt, gravel and a few feeder roads radiating out of it. In St. Kitts there are about 12 miles of streets in Basseterre and a further 70 miles of roads in and around the island while in Nevis, there are about 68 miles of road. The



unpaved roads, particularly feeder roads are a serious constraint to the movement of people and products in and out of the agricultural areas. Some of these are poorly designed and subject to erosion.

Agriculture in both islands, particularly intensive crop production is highly dependent on irrigated water. However, irrigation facilities are not adequate to meet the demands of agriculture as well as to satisfy non-agricultural uses.

8.3 Structural Characteristics

Sugar has historically been the backbone of the economy. It was cultivated in both islands, but was abandoned in the early 1960's. A process of economic diversification started in the mid-1970's and has been taking place since then although the economy is still highly dependent on sugar. This diversification has taken place through the expansion of non-sugar agriculture (mainly cotton, vegetables, and livestock), through the establishment of new assembly-type industries such as electronics, garments, and electric equipment and through the expansion of tourism.

Several agricultural enterprises occur in both islands ranging from permanent crops and annual crops to livestock and potential forestry. Permanent crops include pawpaw, coconut, breadfruit, guava, plantain, mango, citrus, and soursop. Any of these crops can be found scattered in a plot or concentrated in household gardens. Only coconuts are grown on a large scale by privately-owned estates in Nevis.

Most annual crops are grown on a rainfed and irrigated basis. These include cereals (maize), rootcrops (yam, eddoe, dasheen, tannia, cassava, sweet potato), other (sugarcane, ginger, cotton, peanuts and pineapple) and vegetables (pumpkin, string beans, carrots, tomatoes, okra, onion, etc.). Only sugarcane, peanuts and cotton (in Nevis) are grown on pure stand basis.

There are some differences in the structure of the sector in both islands. In St. Kitts, the government-owned estates comprise more than 60% of total cultivable land; in Nevis, it is less than 10 percent. Because of the government's control of land in St. Kitts, the existing land tenure pattern is considered a serious constraint to increased agricultural production. This constraint does not exist in Nevis.

8.3.1 Number of Farms and Holdings

The farming sector is dominated by small farmers with most farms having an area of less than 1 hectare (2.5 acres). The agricultural census of 1986 estimated that there were 3,429 holdings in SKN, with 65% being St. Kitts and 35% in Nevis. This reflects a 3% less in the total number of holdings (with land) recorded by the census of 1975. Estimates from the last census



further show that more than 90% of farms in SKN are less than 2.02 hectares (5 acres), with 81.2% alone having an average size of less than 1.2 hectare (see Table 8.4)². The number of small farms in 1986 in this category was about the same as that recorded in the 1975 census, but the number of larger holdings (10.2 or more hectares) have been reduced significantly. This is particularly so in Nevis where larger government-controlled holdings have been redistributed in smaller plots to farmers.

Table 8.4
Number of Farms by Size Groups (1986)

	Number of Farms*			
	St. Kitts	Nevis	Total	Percent
Less than 1.2 hectare	762	492	1,254	81.2
1.2 - 2.02 "	104	74	178	11.5
2.03 - 3.01 "	29	33	62	4.0
3.02 - 4.01 "	1	11	12	0.8
4.02 - 10.1 "	6	10	16	1.0
10.2 and more	9	13	22	1.4
Total	911	633	1,544	100.0

Does not include landless holdings and "large" farms.
Source: Agricultural Census, 1986.

8.3.2 Land Tenure

Most of the agricultural activity, particularly in St. Kitts is undertaken on government-owned lands which are sugar estates acquired during the 1972-75 period. St. Kitts has a highly skewed land ownership with 23 properties or 1.0% of the island's agricultural holdings and comprising more than 75% of total land under government control (see Table 8.5). About 95% of the total holdings are operated by individuals, mainly small farmers while 3% are operated through a partnership. Small farms with less than 2.0 hectares (5 acres) comprise 75% of the total holdings in St. Kitts but control only about 6% of the land.

²: Large farms are differentiated from total holdings in the census because of certain criteria. A farm is considered "large" if at least 0.2 hectare (0.5 acre) is cultivated by cash crops or with more than 50 fruit bearing trees.



Table 8.5
All Holdings by Parish and Type of Organisation (%)

Island	Total Holdings	Private			Government	Not Stated
		Individual	Partnership	Corporation		
St. Kitts	2,218	94.4	3.2	0.0	1.0	1.4
Nevis	1,211	97.0	0.9	0.3	0.3	1.4
Total	3,429	95.3	2.4		0.1	1.4

Source: Agricultural Census of 1986

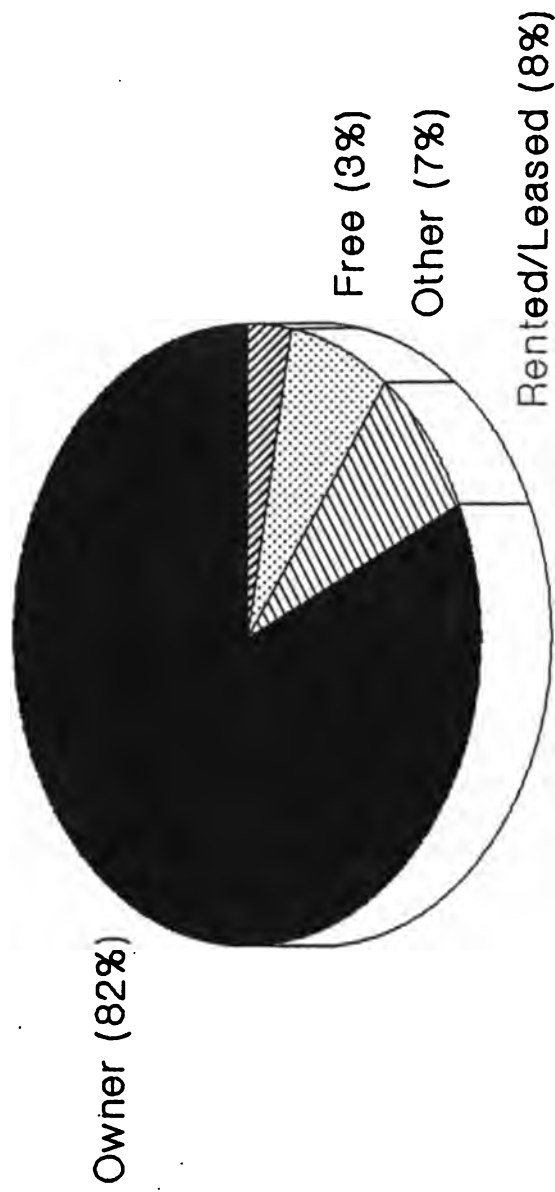
Land ownership is less concentrated in Nevis with the government controlling less than 10% of total land. The government started acquiring estates since 1933 and the last was taken over in 1968. Since then, some of these have been redistributed through leasing and sale to smaller farmers in 3-acre plots. However, most of the large estates are still government-owned or controlled.

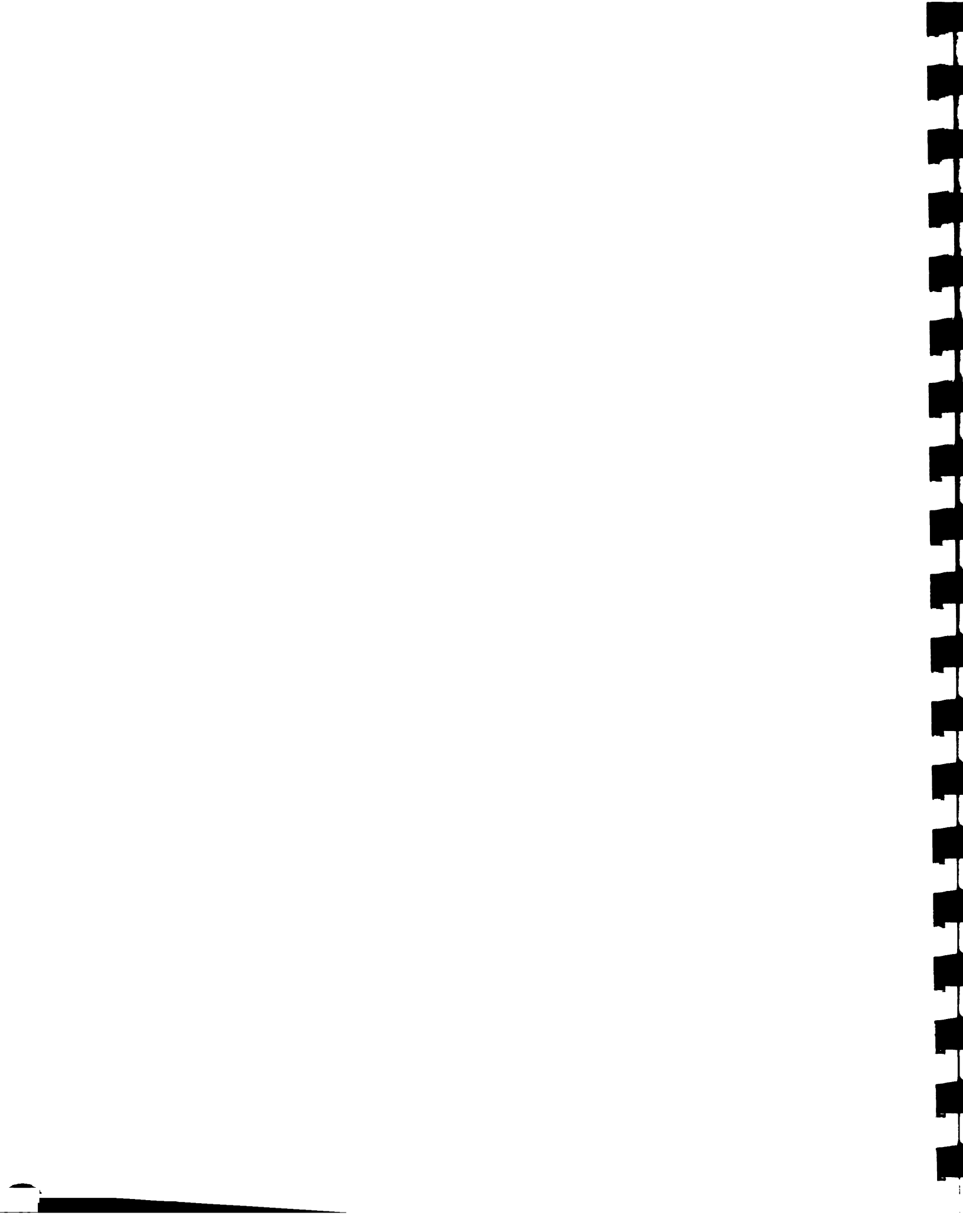
The pattern of land tenure in SKN is characteristic of small farm agriculture where there is a combination of plots that are owned, leased or rented. Furthermore, the land distribution situation indicates that there are differences in the types of agriculture found on the two islands. Data from the 1986 agricultural census shows that 53% of total agricultural holdings (82% of the total area) are owned, 27% (8% of area) are rented or leased, 17% (3% of area) are operated under no specific tenurial arrangement and 2% are under other forms of tenure (see Figure 8.1). The data also shows that of the total holdings that are rented or leased, about 90% involves direct cash payment for renting or leasing. There is also evidence that a relatively larger number of farmers in Nevis opt for payment in kind compared to farmers in St. Kitts. Furthermore, the land tenure situation seems to have changed very little since the previous agricultural census of 1975, except that a small number of holdings are categorised as "being landless" in 1986.

As indicated above, the land tenure situation between the two islands is contrasting. In St. Kitts, only 36% of the island's holdings are freehold compared with 65% in Nevis. It is common for small farmers, particularly in Nevis to possess a small plot of an hectare or so as freehold, then lease a few additional hectares from government for farming and graze cattle on communal pasture or on government land and estates.

In both islands, farmers often request leases for land from the government. However, a central registration of leases of government lands appears to have been abandoned several years ago and information available on the lease of such lands is very insufficient.

FIGURE 8.1
Land Tenure in St. Kitts and Nevis, 1986





The current land tenure system and land use policy are serious constraints to agricultural development in SKN. Almost all the agricultural land in St. Kitts is owned by the government and there is an absence of an adequate institutional arrangement for granting leases to farmers. A major inadequacy is that the current system does not give farmers formal land rights and this constrains them to access credit and it is not conducive to make continuous improvements in land quality and/or land management. On the other hand, government-owned land in Nevis is being redistributed through long-term leases and sales to farmers and there are signs of greater interest in farming. It is therefore critical that the land tenure problem be solved in St. Kitts in order to proceed with the diversification effort.

SKN also lacks a comprehensive land use policy. The growth in tourism and construction has not only diverted lands away from farming but has also impacted on land prices and the environment.

SKN has become increasingly dependent on tourism and any future growth of this sector should be incorporated into a planned strategy for the medium and long term development of the country's land resources. The susceptibility of land to erosion and the need to preserve sustainability of the environment are additional factors for a more comprehensive land use policy.

8.3.3 Degree of Fragmentation of Holdings

Table 8.6 shows the degree of fragmentation of agricultural holdings in SKN. The data indicates that there is more fragmentation of holdings in Nevis compared to St. Kitts. About 32% of the land holders in Nevis farm 2 to 3 plots compared with only 8% in St. Kitts. The higher degree of fragmentation in Nevis is partly due to the shortage of good agricultural land in a particular location and the relatively higher concentration of land in larger farms in St. Kitts.

Table 8.6
All Agricultural Holdings
by Size and Number of Parcels

Size of holding	Total Holders	Total Parcels	Number of Holdings Consisting of			
			1 Parcel	2 to 3 Parcels	4 to 5 Parcels	6 to 8 Parcels
Under 1.2 hectares	2040	1048	811	109	1	0
1.2 ha & 2.02 ha	108	172	61	43	3	1
2.02 ha & under 3.04 ha	33	72	8	23	0	2
3.04 ha & under 4.1 ha	3	5	1	2	0	0
4.1 ha & under 10.1 ha	6	13	3	2	1	0
10.1 ha & Over	28	39	21	7	0	0
Total: St. Kitts	2218	1349	905	186	5	3
Under 1.2 hectares	1024	1390	677	294	16	0
1.2 ha & under 2.02 ha	101	238	27	55	17	2
2.02 ha & under 3.04 ha	37	91	11	17	7	2
3.04 ha & under 4.1 ha	12	48	0	5	4	3
4.1 ha & under 10.1 ha	13	30	6	5	0	2
10.1 ha & Over	24	49	12	9	2	1
Total: Nevis	1211	1846	733	385	46	10

Note : Because some holdings were "landless", the number of parcels is smaller than the number of holdings.

Source: Agricultural Census of 1986

8.3.4 Age Distribution of Farmers

Table 8.7 shows the percentage distribution of farmers by age group for SKN in 1986 and 1975. Like most eastern Caribbean countries, the average age of farmers in SKN is more than 45 years; about 63% of total farmers are above 45 years of age. This is partly because small-scale farming is seen as a post-retirement activity, and partly because many small farmers are either present or former employees of the sugar industry who have been granted the use of land after many years of satisfactory service. It is estimated that one-half of the "large farmers" in St. Kitts are more than 55 years of age.

Despite the relatively larger proportion of younger farmers in 1986 (compared to 1975), the age of farmers reflects the failure of non-sugar agriculture to attract young people to farming. It is partly indicative of the use of labor intensive methods in current farming practices and the low returns to agriculture vis-a-vis other occupations.



Table 8.7
Proportion of Farm Operators by Age Groups,
1986 and 1975 (%)

Age Group	1986	1975
< 25 years	4.7	-----
25 - 34	15.6	12.4*
35 - 44	14.7	10.9
45 - 44	15.5	23.4
55 - 64	18.9	26.6
65 years & over	28.9	26.6

* Data for 1975 represent all operators less than 35 years of age.

Source: Agricultural Census of 1986 and 1975

8.4 Institutional Structure

8.4.1 General Administration

The administration of the agricultural sector in SKN is unique because the country is a federation of two islands, each having its own administration. The agricultural sector in St. Kitts is administered by the Department of Agriculture (DOA), which is under the responsibility of one (of two) Permanent Secretary in the Ministry of Agriculture, Lands, Housing and Development. Similarly, in Nevis, there is a Department of Agriculture in the Ministry of Agriculture, Lands, Housing, Labour and Tourism. Regular coordination takes place between the two administrations, mainly at the Director's level³.

There are several national, regional and international institutions actively involved in efforts to foster and develop the agricultural sector in St Kitts and Nevis. While some of these institutions have been relatively effective in carrying out their mandates, the absence of an inter-institutional framework to coordinate their diverse activities has led to some measure of duplication of efforts and inefficiencies in the use of scarce resources. Among the local institutions are: the National Assembly, Ministries and their Department of Agriculture and other Ministries including Communications, Works and Public Utilities; Trade; Industry and Legal Affairs; Education, Health and Community Affairs; St Kitts Sugar Manufacturing Corporation (SSMC); Credit and Marketing Institutions. Among the Regional International Institutions are CARDI and CARDATS in the area of research and the CDB, FAO/UNDP, CIDA, BDD, OAS, USAID, EEC and IICA with respect of technical cooperation and development programme activities.

³. There is usually a meeting between the Minister of Agriculture, Permanent Secretary and Director of Agriculture of St. Kitts with their counterparts from Nevis once per year.



8.4.2 National Administrative Structure

The Federation of St Kitts/Nevis is governed under the system of Parliamentary democracy with a non-executive Governor General as Head of State, ably assisted by a Deputy Governor General based in Nevis.

Executive power is exercised by a Prime Minister and a Cabinet of Ministers responsible for specific functional areas of Government namely:

- 1) Finance, Foreign Affairs and Home Affairs - the Prime Minister
- 2) Labour and Tourism held by the Deputy Prime Minister
- 3) Agriculture, Lands, Housing and Development
- 5) Education, Youth and Community Affairs, Communications, Works and Public Utilities
- 6) Trade and Industry
- 7) Legal Affairs - Attorney General
- 8) Health and Women's affairs

The ministerial structure is shown in Figure 8.2

The constitution of the Federation of St Kitts and Nevis provides for a National Assembly and a Nevis Island Assembly. The administration of Government activity in the two states is carried out by separate civil service structures based in Basseterre, St Kitts and in Charlestown, Nevis.

The Nevis Administration is structured into three ministries: (see Figure 8.3)

- 1) The Ministry of Finance, Education, Health and Home Affairs (portfolio of the Premier)
- 2) Ministry of Agriculture, Lands, Housing, Labour and Tourism
- 3) Ministry of Communications, Works, Public Utilities and Transport

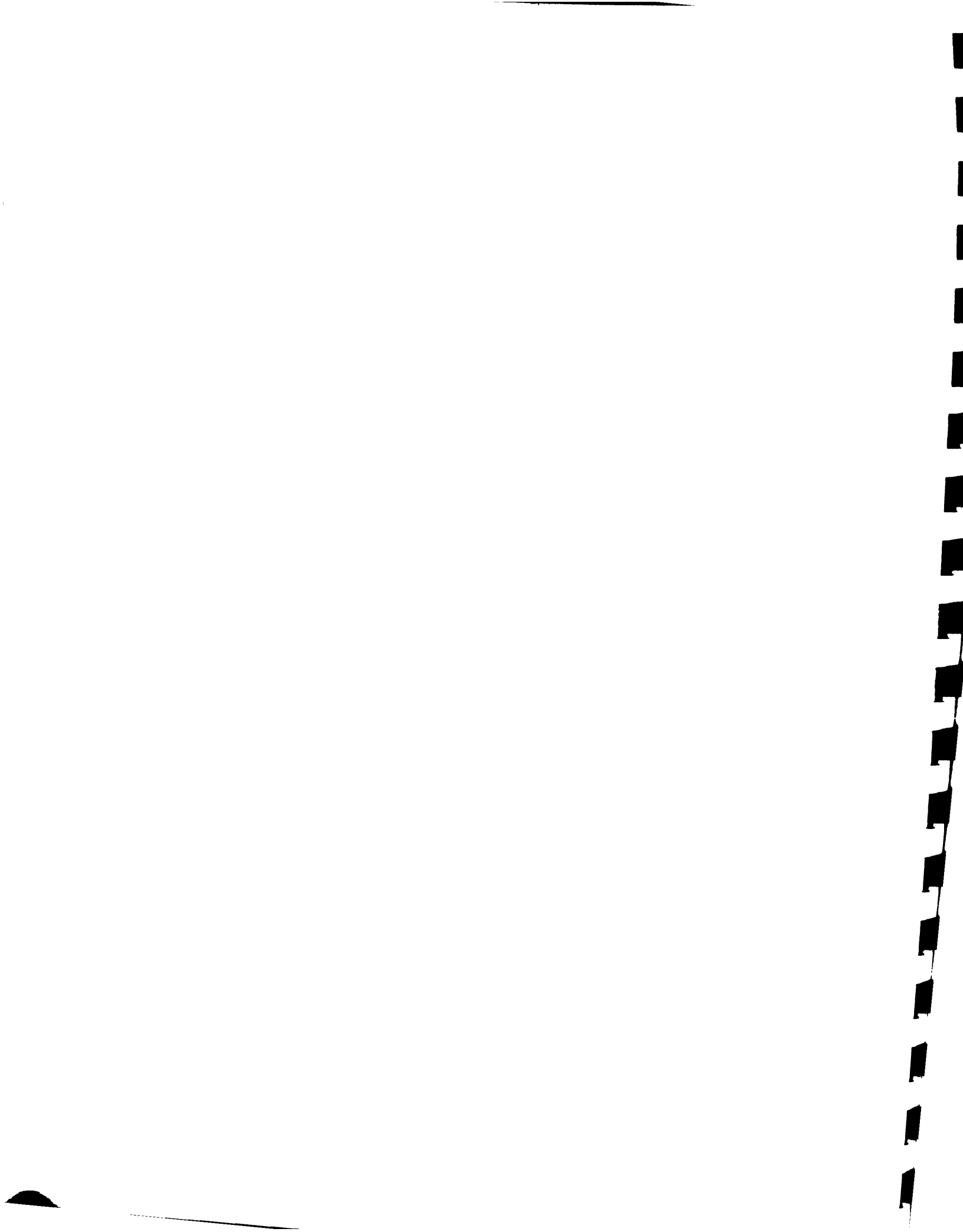


FIGURE 8.2

GOVERNMENT OF ST. KITTS-NEVIS
MINISTERIAL STRUCTURE

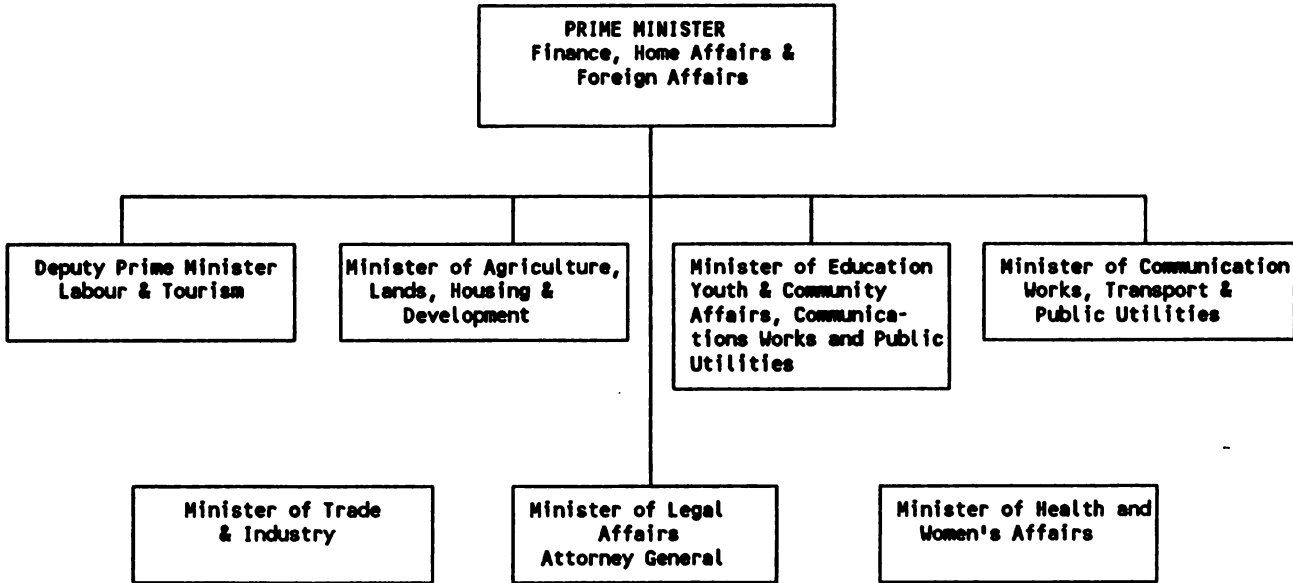
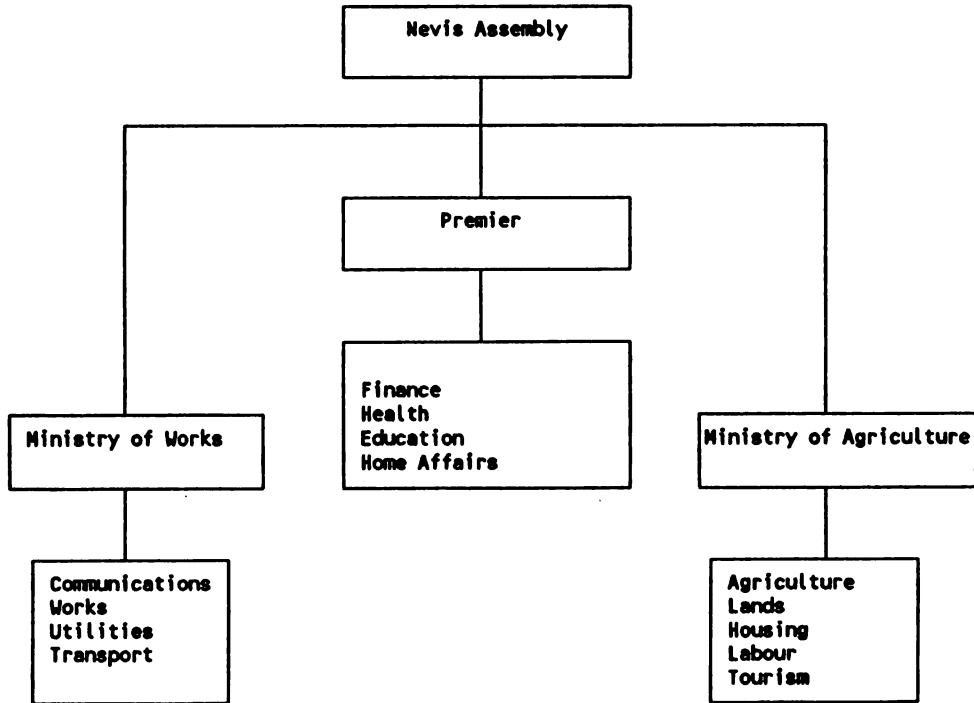
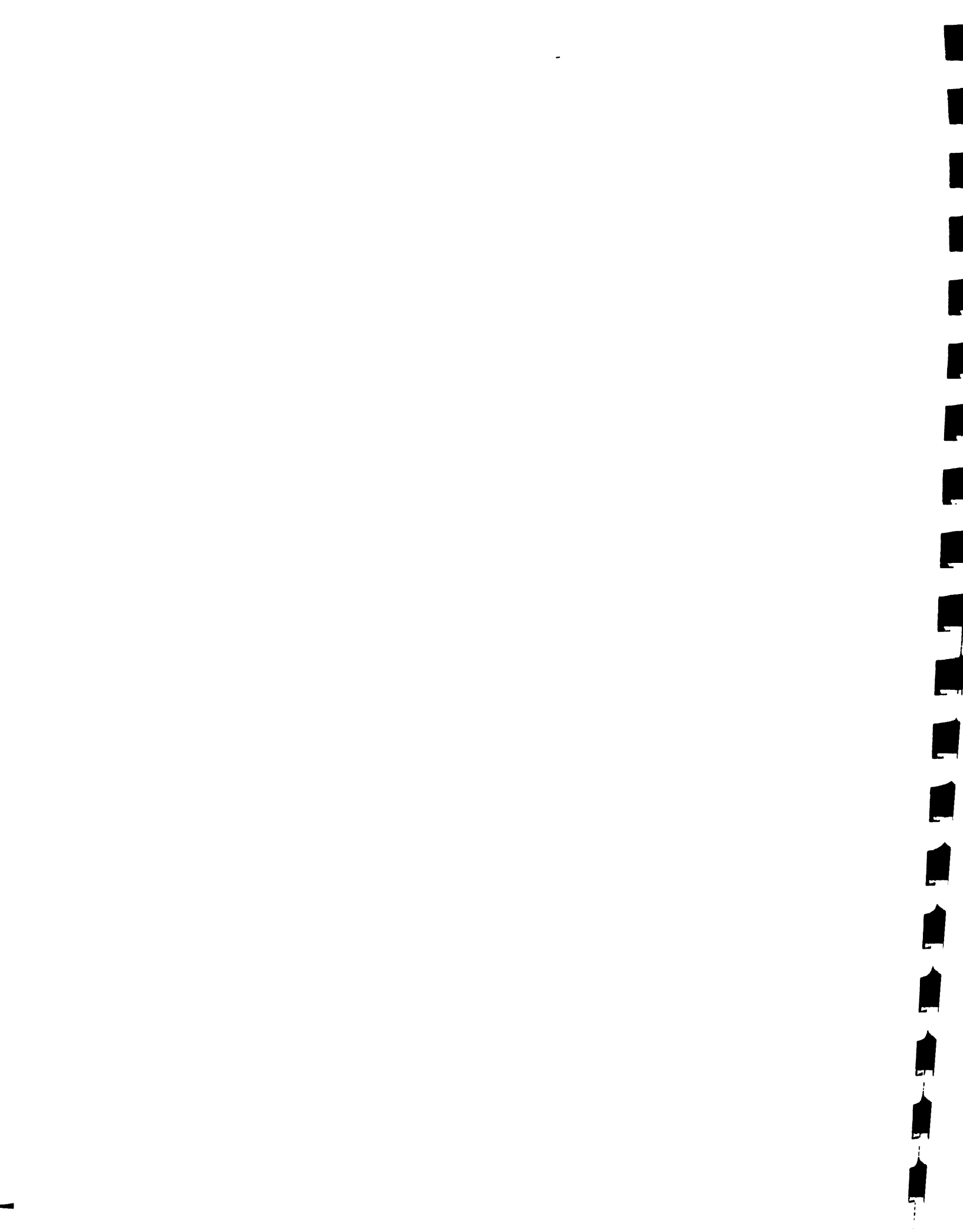


FIGURE 8.3

NEVIS ISLAND ADMINISTRATION
MINISTERIAL STRUCTURE





The functional areas for which the Nevis Island Assembly has power to make laws set out in Schedule 5, Section 117 (1) of the 1983 Independence Constitution. Among these areas are agriculture and infrastructure. There is close co-ordination between the Basseterre based and the Charlestown based administration on all matters of mutual interest. All contracts between foreign Governments or funding agencies and Government entities are handled through the appropriate Federal Ministry in Basseterre. Informal modifications of this procedure in respect of Nevis based projects have however been occasionally implemented on a case by case basis.

8.4.3 Analysis of Agricultural Institutions - St Kitts

8.4.3.1 Public Sector Institutions

The Department of Agriculture (DOA)

The DOA is the lead institution for agricultural development in St. Kitts. It is headed by a Director of Agriculture and it provides support services and coordinate activities in the sector through its seven technical divisions (see Figure 8.4). These include the Livestock, Research, Extension, Engineering, Forestry, Cooperative and Fisheries Divisions. Because of the lack of capital, most of the Department's programmes are supported by regional and international agencies such as CARDI, CDB, World Bank, UNDP and OAS.

There is no formal mechanism or institutional responsibility to plan for the agricultural sector, either within the narrow confines of the Ministry of Agriculture or the Planning Unit of the super Ministry of Agriculture, Lands, Housing and Development. This results mainly from the small size of the DOA and its relationship with the Planning Unit of the Ministry. Each Division has a work plan and each is required to contribute to formulation of the development plan. Submissions are made to the Director of Agriculture and then to the Permanent Secretary. The process is similar for formulation of the Department's annual budget.

There are several constraints to effective agricultural planning in St. Kitts, most of these being institutional. Although the Planning Unit has responsibilities for planning in all areas covered by the super Ministry (including the agricultural sector), it does not satisfy the planning needs of the sector, i.e., the Unit is not actively engaged in agricultural planning. Given the importance of agriculture and the strategy to increase its role in the economy, a formal mechanism to plan for the sector is needed. The absence of an institutional planning mechanism also contributes to the existence of other constraints including weak budgeting practices and very little programme and project monitoring and evaluation. Furthermore, there is lack of an organised information system to support sectoral planning and programme development in the DOA.

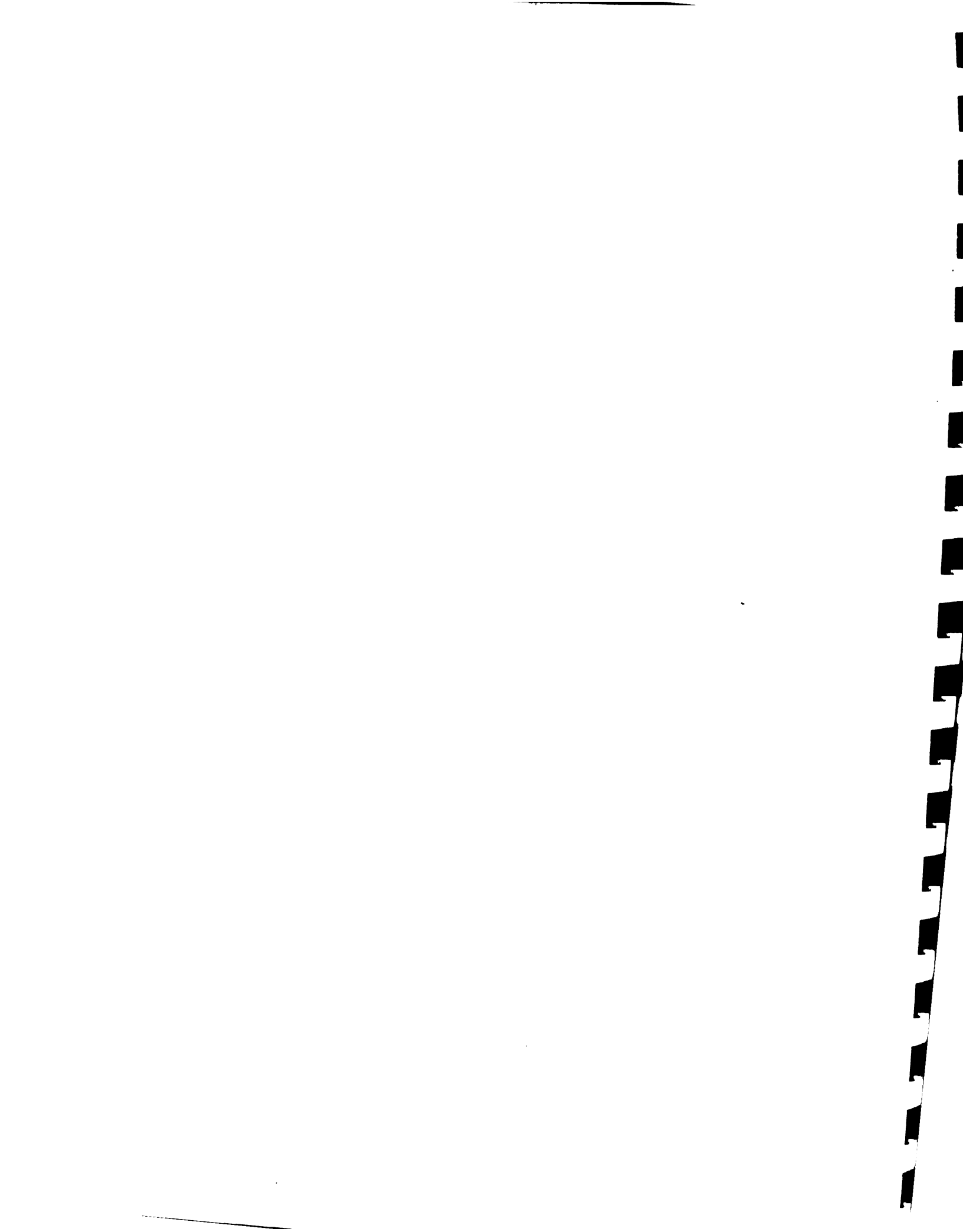
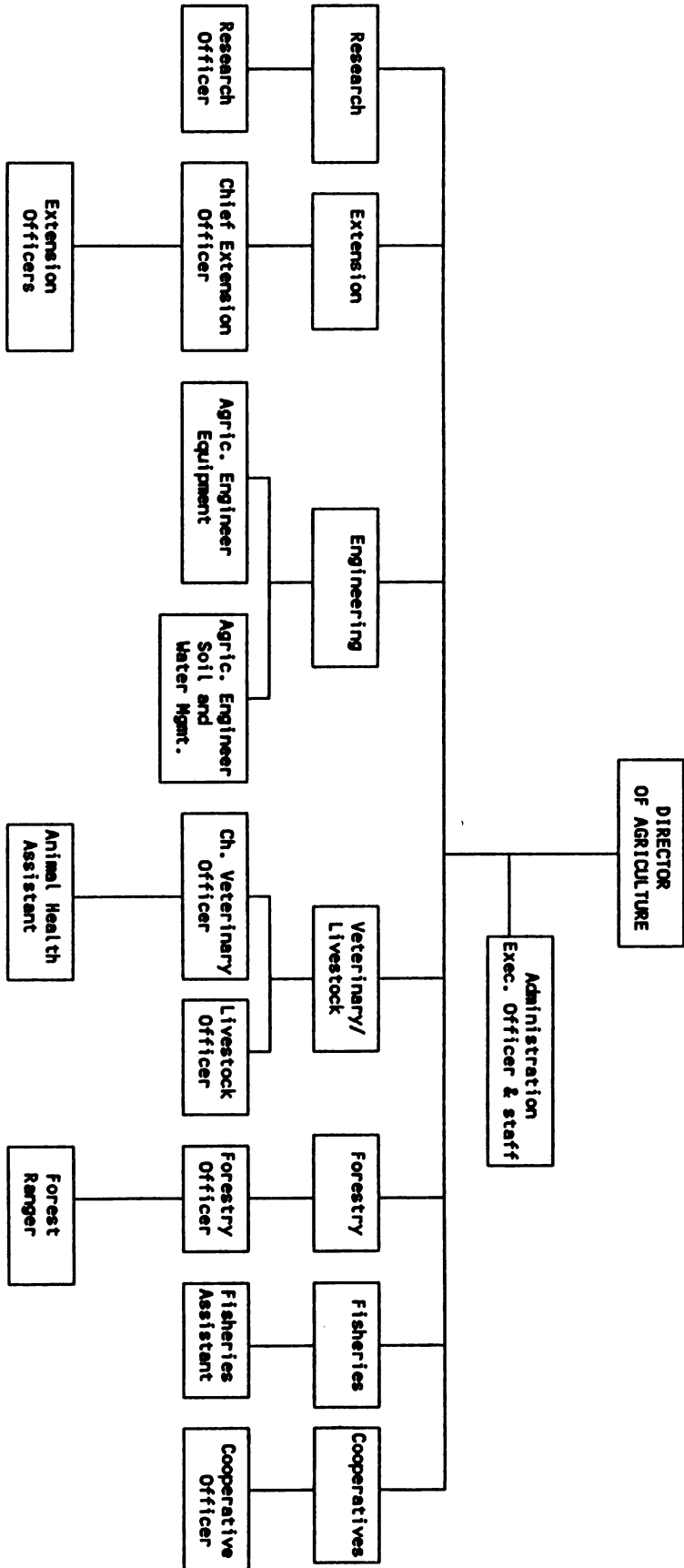


FIGURE 8.4
 STRUCTURE OF THE DEPARTMENT OF AGRICULTURE, ST. KITTS





As in most other DOAs in the Organization of Eastern Caribbean States, the number of professional staff in all Divisions is extremely small. For meaningful technology-led research (Nickel, 1988) the number of qualified personnel is even more exiguous.

The Crop Research Division (CRD) is headed by a Crop Research Officer with a Master of Science (MSc) degree in Agronomy. He supervises two full-time Agricultural Assistants, each holding a Diploma in Agriculture (Dip). A part-time graduate, with a Bachelor of Science (BSc) degree complements the CRD professional team.

The Veterinary Services and Livestock Division is headed by a Veterinarian and depends on a sole professional, the Livestock Officer (with a MSc degree in Animal Science) to develop modern technology for livestock production. The remaining staff (one Animal Health Officer and four Assistants) look after animal health services to livestock farmers.

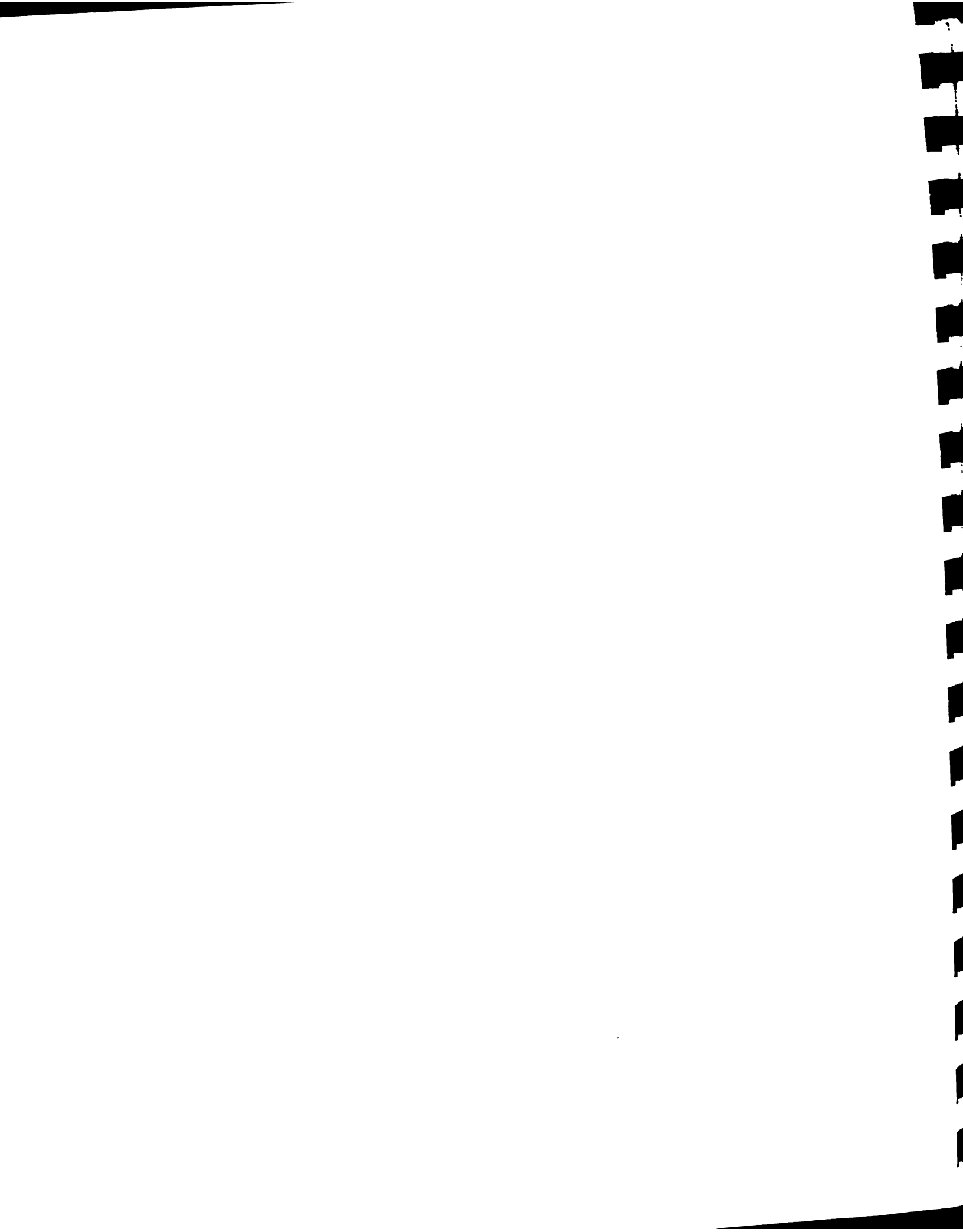
The Extension Division is headed by a Chief Extension Officer with a BSc degree in Agriculture, assisted by five undergraduate (Dip) Extension Officers. It transfers crop and livestock production technologies to farmers in the state's six Extension Districts.

The Co-operative Division is responsible for the supervision and monitoring of co-operatives. As of December 1990 there were 26 active co-operatives registered in St. Kitts and 12 dormant ones credit unions (3), handicraft (2), rabbit production (1), meat production (1), fishing (1), consumer (2), building (1), savings (1)]. This large number of dormant co-ops is an indication of the ease with which co-ops can be registered.

The Co-operative Division had one Co-op Officer up until February 1991. Presently there are two but the Head of the Division will soon be leaving for a six month training course in Nova Scotia, Canada. Both the Head and the Co-op Officer carry out the same functions. Their primary responsibilities are to promote, regulate, monitor and assist co-operatives in their efforts to achieve their goals and objectives.

The primary problems of this Division are:

- very limited man-power to carry out responsibilities in dealing with the 26 co-ops in St. Kitts;
- uncertainty of transportation which must be shared with other Divisions;
- very limited promotional and training materials, e.g. literature, videos, projectors;



- limited technical skills in project identification and formulation;

The Fisheries Division is a one-man operation. This limited staff is a constraint for the timely and adequate collection of data and proper monitoring of the eight landing sites. Extension activities include: education of fishermen in conservation measures of sea life; maintenance of outboard motors and fishing gear; safety on the sea; fishing techniques; first aid; recording of fishing activities; updating the listing of registered boats and identification of fish species. Project activities have included such things as: the modernization and expansion of the fish market at Charlestown; establishment of a fisheries data base system (OECS); trial production of Tilapia nilotica (OAS); monitoring of coastal changes (UNESCO), and a Sea Food Survey (OECS). Approximately 105 fishing boats are based at eight different landing sites. In 1989 Nevis exported 12,036 lbs of fish and 7,803 lbs of lobster to the following islands: St. Croix (94% of the fish and 60% of the lobster), Montserrat (1% of the fish, 26% of the lobster), Guadeloupe (1% of the fish, 13% of the lobster), Tortola, St. Thomas and St. Eustatius.

The primary problems of this Division are:

- too small size of staff to adequately provide the necessary facilitating service;
- limited budget for training purposes;
- limited skills in project identification and formulation;

Considering the diversity of technological needs for agricultural diversification and subtracting professional time spent on administrative or otherwise non-technical duties, the human resource base for technology development and transfer in the DOA is clearly overstretched. To compound this constraint, precious work time is diverted by the professional staff to ad-hoc non-programmed training, meetings and other non-essential activities. Deepening or spreading dissatisfaction was also expressed by key DOA professional staff, especially at the middle management level, about their work environment.

Yet the DOA has contributed significantly to technological modernization of agriculture in St Kitts. Its annual reports since 1986 were not available for this Assessment Mission but the observed results of its TDT activities in vegetable (especially white potato) production have been highly successful. Performance in livestock development is less impressive, due in great measure to the widespread incidence of the tick-borne disease dermatophiliasis that decimated the livestock population during the 1980's.



The St. Kitts Sugar Manufacturing Corporation

The SSMC primarily develops and transfers technologies to support its own sugar cane production and diversification ventures. It has however shown less than enthusiastic interest about getting into non-sugar based agriculture (Nurse et al, 1989). But considering that it controls most of the arable land in St Kitts, agricultural diversification as targeted in the MOA's stated policy (Nat. Dev. Plan St Kitts/Nevis, 1986-1990) cannot proceed effectively without its direct or indirect support.

The SSMC conducts TDT through its Agronomy and Research Department (ARD). It also runs jointly with CARDI, the Integrated Pest Control Unit (IPCU), within the purview of ARD.

The Manager of IPCU has a Doctor of Philosophy (PhD) degree in Agronomy and is assisted by nine undergraduate professionals (mostly at the Dip level). CARDI assigns to IPCU one graduate (BSc degree) professional in Entomology, but she is due to leave SSMC soon. No replacement was identified to the Mission.

The ARD's performance has been positive on technical modernization of sugar cane development, although several external conditioning factors (such as low rainfall and equipment breakdown) have negatively impacted on cane and sugar yields lately. Performance in non-sugar commodities (peanuts yam, cabbage, white potato, sweet potato, pineapple, mango, citrus, coffee and others) has been less satisfactory, apparently due to insufficient support from SSMC's management.

The Trading and Development Corporation

The TDC sells agricultural inputs including agro-chemicals, equipment and small tools. Thereby it facilitates and influences the adoption of technologies by farmers. It has maintained functional and operational, albeit informal, linkages with the DOA's technology development and transfer units.

The Central Marketing Corporation (CEMACO)

CEMACO dates from the 1973 Central Marketing Corporation Act. It is based in Basseterre, St. Kitts and does not maintain any staff or facilities in Nevis. A small (10 x 10 x 8 ft) cool room build in downtown Charlestown is used only periodically by the DOA Extension/CARDATS marketing programme.

CEMACO is managed by a General Manager who is directly responsible to a Board of Directors appointed by the Minister of Agriculture. The General Manager oversees a staff of



almost 40 persons including 6 at the supervisory level who have responsibilities for areas of Accounts, Depot, Wholesale, Retail, Despatch and Farm Coordination, respectively.

The ACT creating CEMACO gives it a broad range of marketing functions similar of other marketing boards in the region. In effect it is responsible for almost anything related to marketing, i.e.

- to stimulate, facilitate and improve the production, marketing and processing of agricultural produce;
- to develop/secure favourable arrangements for the purchase, handling, distribution, transport, shipping, marketing and sale of agricultural produce;
- to make recommendations on matters related to the production and marketing of produce;
- to collect, analyse and disseminate statistical data on agricultural and livestock production and marketing;
- to assist and advise producers and agricultural and fishing co-operatives in the selection and marketing of their produce;
- to provide training in harvest and postharvest handling;
- to supply producers with farm inputs;
- subject to the approval of the Minister of Agriculture, it has regulatory powers such as:
 - . licensing/registering of producers/wholesalers;
 - . prescribing standards and controlling exports;
 - . issuing licenses to export produce, and
 - . regulating imports of produce.

The ACT stresses the execution of the above functions in benefit to the producer. In practice, it is generally agreed by farmers, intermediaries and professionals alike, and supported in the literature, that CEMACO is having little impact in most of the areas mentioned above. It is commonly heard and seen in the literature that the main functions of CEMACO are related to import, wholesale and direct retailing operations. In its own words "selling of grocery items rather than marketing of locally-grown agricultural produce brought



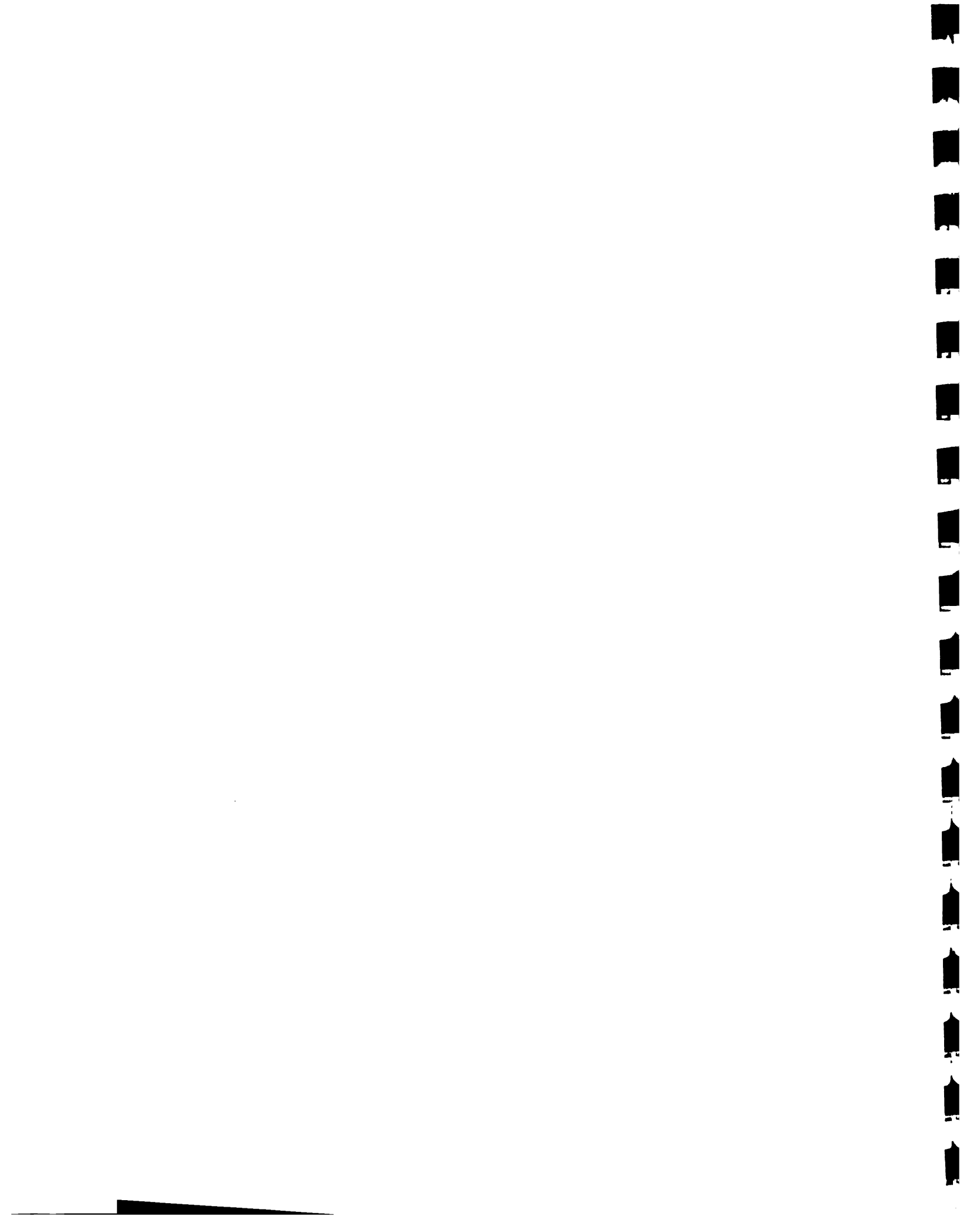
profitability to the Organization" (page 7, Annex 8A, Volume 3, St. Kitts and Nevis Agricultural Diversification Study). To its benefit, and unlike many marketing corporations in the region, CEMACO does cover its expenses and turns a profit due to its import/retailing operations.

In 1990, CEMACO made overseas purchases totaling \$4.6 million, distributed as follows: poultry chilled (\$2,011,444), dry goods (\$1,899,656), fruits & vegetables (\$356,217), liquor (\$163,766), white potatoes (\$102,256), and agricultural inputs (\$53,972). Of the category fruits & vegetables, cabbage represented 18%, carrots 16%, apples 16%, tomatoes 11%, bell peppers 7%, celery 5%, lettuce, broccoli and cauliflower 8%, grapes 3%, oranges 2% and others 15%. Of the category agricultural inputs, 65% were seeds and 35% tools and equipment.

In respect to domestic purchases of fresh produce, CEMACO seems to have reached its peak in 1982 when it purchased 457,482 lbs of 36 different items. The major items were peanuts (56%), sweet potatoes (16%) and cucumber (6%). The remaining 22% was distributed among 33 different products. As a result of high product and financial losses, CEMACO began to scale down its purchases of fresh produce and presently buys primarily to supply its two retail outlets. Since 1982 annual purchases of local produce has been on the decline, reaching as low as approximately 150,000 lbs (35 items) in 1990. Since 1985 the value of CEMACO's purchases of local produce has ranged from 3-8% of the value of annual turnover.

The primary problems of CEMACO are:

- CEMACO is mandated to carry out a series of functions for which it does not have the necessary staff and infrastructure; these functions were defined based on felt needs 18 years ago and are not necessarily the same as the felt needs of today;
- CEMACO is perceived as not responding to the needs of the farmer and therefore not fulfilling its responsibilities;
- there is no clearly defined national agricultural marketing policy which can serve to guide CEMACO in its development activities;
- present staff is inadequate to provide the necessary facilitating services in assembly and export;



- human and financial resources are very limited for information gathering and dissemination, and training in such areas as postharvest handling;
- management has limited skills in project identification and formulation;

Agricultural Credit Institutions

Credit to the agricultural sector is made by commercial banks and the government-owned Development Bank of St. Kitts and Nevis (DBSKN). Credit is also provided by a non-government organisation, the Foundation for National Development (FND), Agricultural Cooperatives (mainly in Nevis) and a Cooperative Credit Union. The FND provides financial as well as technical assistance services to mainly small farmers who are unable to access institutional credit because of lack of collateral.

The DBSKN and FND lend to other activities in the economy but they are the primary sources for agricultural credit. Both institutions maintain branch offices in Nevis. The principal sources of finance for the DBSKN has been lines of credit from external agencies such as the European Investment Bank and the Caribbean Development Bank (CDB), with most coming from CDB. The DBSKN has also borrowed money from the government and the Social Security Scheme. With respect to the FND, funding has been provided by various donors including the Canadian International Development Agency (CIDA), the US Agency for International Development (USAID), the European Community (EEC), Foundation for International Training (FIT). The FND also obtains financial support from incomes derived from its services and contracted activities and from local donations.

The lending policies of the DBSKN and FND are somewhat different. The DBSKN borrows from CDB at 4% interest rate and charges 11% to all borrowers. The collateral requirements of the Bank include a bill of sale on vehicles and equipment, land title or a guarantor (two are needed for loans above \$10,000). However, the Bank is constrained in its lending activities to agriculture because it lacks capable officers with sufficient training in agriculture to appraise projects and loan requests from the sector. In the case of the FND, the interest rate charged on all loans is 7.5% and the maximum loan period is 5 years. The FND also acts as a guarantor for loans to its clients when they are required to borrow from commercial banks. The Foundation's collateral requirements include bill of sale, mortgages, certificate of title as well as guarantors.

Figure 8.5 shows that total lending to the agricultural sector has been very small compared to total bank credit to all sectors of the economy. In general, credit to agriculture as



a proportion of total commercial bank credit has been less than 1.0% between 1981 and 1986 and has marginally increased in recent years. Even the loan portfolio of the DBSKN which is the main source of medium and long term lending to the sector has been small, amounting to less than 8% in any one year since it started operations in 1981. A large proportion of the Bank's loans has been channeled into housing development and to finance the expansion of industry and tourism. Within agriculture, fishing has been the main recipient for the Bank's funds but food crops, mainly vegetable production have become important in the last few years (see Figure 8.6). Similarly, the FND's loan portfolio indicates that a small proportion of its loans have been lent to agriculture. Food crop farmers, particularly those cultivating white potatoes have been the main recipient of its loans in the agricultural sector recently.

Sufficient credit funds have been available for agricultural financing but lending opportunities have been limited. The constraints affecting agricultural development are the main factors which have limited lending opportunities in the sector. Poor roads and infrastructure and lack of markets for agricultural products have constrained farm production and affected the "credit worthiness" of farmers. Other interrelated factors include (a) the predominance of part-time farming which can be financed from other sources; (b) lack of security of tenure and (c) the age of farmers. Together, these factors have contributed to a lower opportunity cost for resource use in agriculture.



FIGURE 8.5
Loans to Agriculture by
St. Kitts & Nevis Development Bank

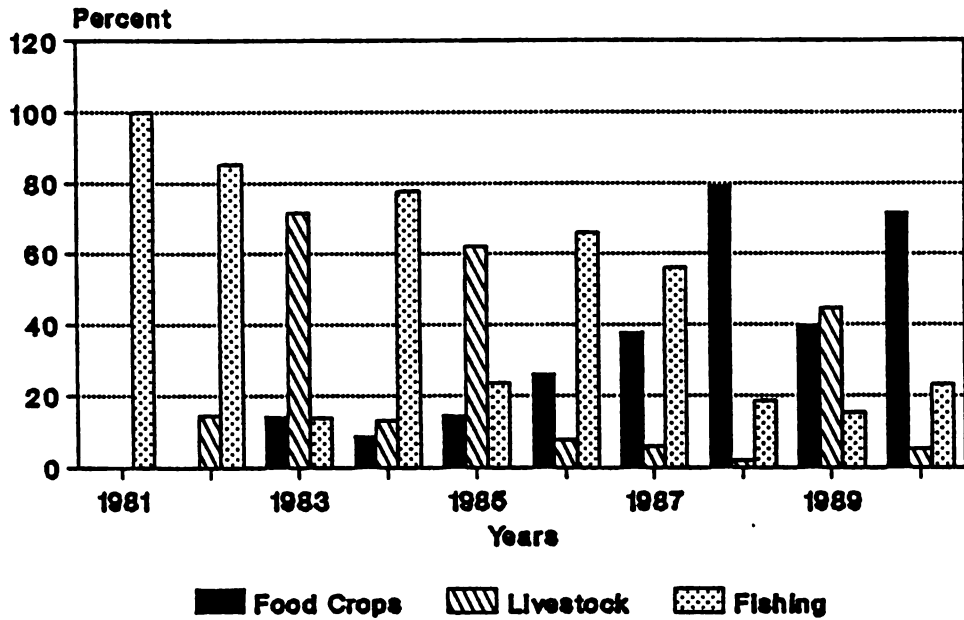
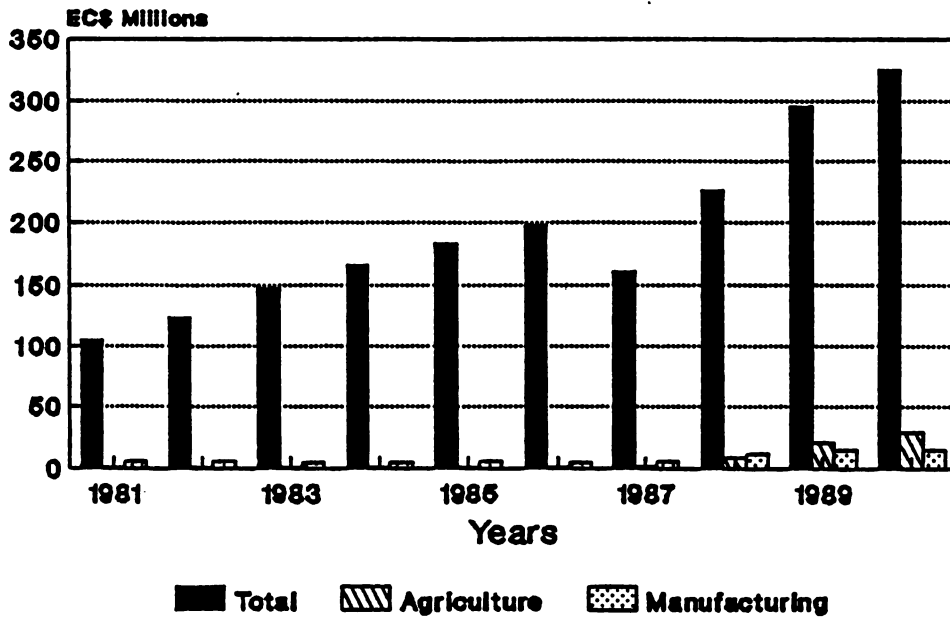


FIGURE 8.6
Commercial Bank Credit and Contribution
to Agriculture and Manufacturing



8.4.3.2 Private Sector Institutions (Identification, Structure, Function, Constraints)

There are a few private sector organizations in St. Kitts which directly or indirectly impact upon agricultural development. These are the following:

a) S L Horsfords & Co Ltd

S L Horsfords & Co Ltd plays a role similar to that of TDC to facilitate the adoption of technologies by farmers. Its functional and direct operational linkages with the DOA seem weaker than TDC's. Nevertheless it has contributed to technology modernization of the agricultural sector in St Kitts, through the sale of inputs and equipment.

b) St. Kitts Horticultural Society

c) Chamber of Commerce and Industry is the local agent for the Small Enterprise Assistance Project. In 1990, the Chamber co-ordinated and funded technical assistance and training worth over EC\$85,000.

d) Foundation for National Development approved 171 loans worth EC\$1.2 million in 1990. Services, agriculture and retail sectors dominated the portfolio. An extensive range of training workshops benefitted over 190 small and micro-entrepreneurs. The Foundation opened new offices in Nevis in 1990.

e) The St. Kitts-Nevis Small Business Association continues to identify and support small businesses in the two islands.

f) Cooperatives

There are a total of 26 active co-operatives in St. Kitts. Some of the main one are:

i) School related Co-operatives

19 of which sixteen (16) are within the primary and two (2) are within the secondary school system. One is a secondary level society (APEX) which provides school supplies and uniforms.

ii) Credit Unions

There are two active credit unions in St. Kitts. (The Police Co-operative Credit Union Limited and the St. Kitts Co-operative Credit Union Limited).



iii) Fishing Co-ops

There are three functioning fishing co-ops in St. Kitts in addition to one which is dormant. The active co-ops are Capis Terre Fishermans Co-op (29 members), Sandy Point Fishermans Coop (23 members) and Old Roads Fishermans Co-op (17 members).

All three co-ops are interested in two basic services, i.e. marketing of their members fish and retailing of fishing supplies.

iv) Consumer Co-op

St. Kitts Sugar Manufacturing Corporation Employees Co-op.

v) Home Industries Co-op

The St. Paul's Cottage Industries Co-op grew out of the Youth Skills Training Project (OAS, USAID, Government of St. Kitts/Nevis).

g) Farmers Organizations

Perhaps as a result of the high level of dependency of the agricultural sector of St. Kitts on plantation agriculture and in particular the cultivation of sugarcane, there has been little activity in the organization of farmers. Over the years farmers have held several meetings to discuss the prospect of establishing an organization and at one point a Farmers Union was formed. For lack of leadership and organized support all attempts at farmer organization have been unsuccessful. There is presently a general feeling among a small group (10) of commercial farmers that a farmers organisation would be beneficial to them, particularly in the area of domestic and export marketing.

The problems giving rise to the desire of some farmers to form an organization are the following:

- strong competition from imported fruits and vegetables;
- restrictions on imported items are often imposed too late so that glut situation cannot be avoided;
- inability or uncertainty of getting land preparation services on a timely basis from the small farm equipment pool;

- difficulty in obtaining the best quality seeds and other farm inputs on a timely basis;
- no centralized point for assembly, grading and short-term storage of produce.

8.4.3.3 Regional, Bilateral and International Institutions

The Caribbean Agricultural Research and Development Institute (CARDI)

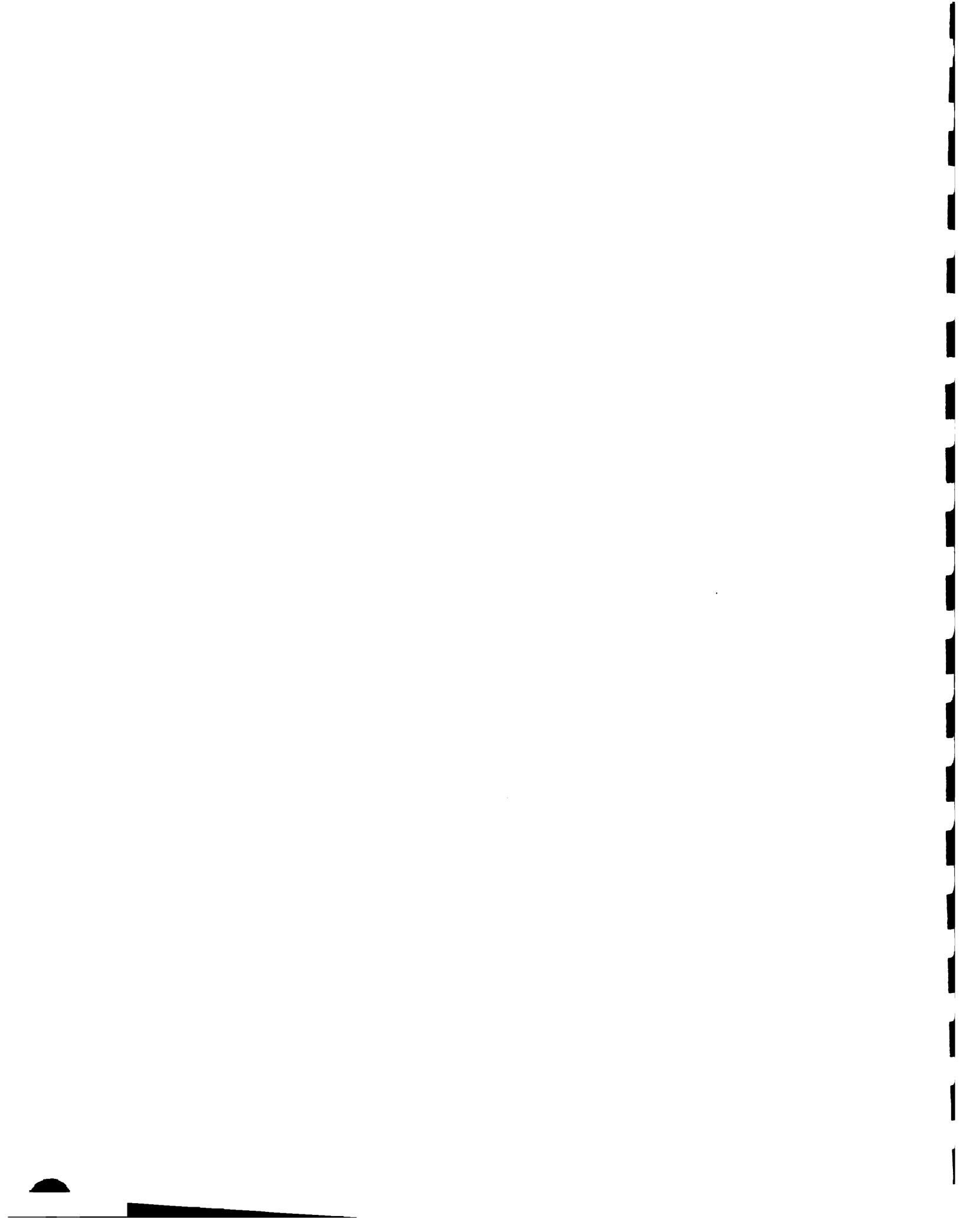
CARDI for all practical purposes is the institutional arm of the DOA for applied Research. And due to the small size of the professional staff of the DOA's Crop Research Division, CARDI is also expected by the DOA to play a major role in technology generation and adaptation. Former activities undertaken by the now phased-out Caribbean Agricultural Rural and Development Advisory and Training Services (CARDATS) in support of technology transfer, have been transferred to CARDI.

But CARDI's own professional staff size in St Kitts is small relative to the assigned responsibility. A livestock Specialist, (with a MSc degree in Animal Science), is its Administrative Representative in the Federation. In St Kitts he is assisted by one graduate (MSc degree) Agronomist and one undergraduate (Dip) Technician in Livestock. One graduate (BSc) degree) Entomologist and one undergraduate (Dip) Assistant employed by CARDI are assigned to the IPCU. Both the graduate Agronomist and Entomologist will leave their posts by the middle of this year.

In spite of such staff constraints, valuable technological contributions have been made by CARDI to agricultural development in St. Kitts. They have resulted in significant progress especially regarding insect and disease control in vegetable and root crops and improvement of small livestock (sheep and goat) production management (through CARDATS).

The University of the West Indies

The University of the West Indies (UWI) does not have resident TDT professional staff in St Kitts. However, through the USAID funded Agricultural Research and Extension Project (AREP), the UWI representative based in Antigua and Barbuda provides technical assistance to the DOA's Extension Division. The major contribution of AREP, as a follow-up to the former Caribbean Agricultural Extension Project, also run by UWI and funded by USAID, has been to induce more effective functional and operational linkages between the research/development (CRD, CARDI) and transfer (AED) structures in the TDTS.



The Agricultural Technical Mission of the Republic of China (Taiwan)

The ROC Mission has been providing technical and financial assistance to the DOA in technology development for vegetable production and training of professional staff in crop and livestock husbandry. Its current professional staff includes one retired professor in Entomology (with a PhD level degree) and three Assistants (at the Dip level). They presently concentrate their work mainly on vegetable and fruit tree crop production.

The ROC has significantly contributed to technological modernization of vegetable production in the State, as observed during field visits by this Assessment Mission.

Other External Technical or Financial Supporting Entities

The agricultural sector of St. Kitts has benefitted from the technical or financial assistance provided by a large number of other external institution or agencies, either directly or through intermediaries.

The ADCU's USAID-funded Tropical Produce Project (TROPRO) has facilitated the participation of the DOA's research and extension staff in regional training activities. Through both the OECS Vegetable and Yam (Food Crop) Development Projects Networks, sponsored by ADCU, the French Mission for Cooperation in the OECS (FMC) and IICA, the sector has accessed technological information and materials from INRA-AG and IRAT/CIRAD, especially regarding new tomato varieties and yam cultivars tolerant to anthracnose.

The OAS has supported agro-forestry development through its Forestry Development and Resource Management Project. Directly or through UNDP-funded projects, FAO has technically supported agricultural development in various areas including nursery management and production technology for fruit tree crop development. Financial and technical support from BDD covers fruit tree crop production and animal health.

Other funding agencies including CIDA, EDF, CDB, IFAD and CTFC have contributed one way or another to agricultural development in St Kitts. Just as this Assessment Mission was about to conclude, UNDP approved for funding an Agricultural Diversification Project for St Kitts and Nevis, to be administered by FAO, immediately.

8.4.4 Analysis of Agricultural Institutions - Nevis

The major institutions or agencies involved in agricultural development in Nevis are mostly the same as in St Kitts excepting SSMC, CEMACO, and HCO among the most important.

8.4.4.1 Public Sector Institutions

The Department of Agriculture

Administrative and technical responsibilities for agriculture in Nevis is under a Department of Agriculture which is headed by a Director. The Department is one of five ministerial departments under the Ministry of agriculture, Lands, Housing, Labour, Tourism and Development.

The Department of Agriculture in Nevis has 17 professionals distributed between 7 Divisions or sections as follows:

- Administration Division (2) plus Secretary and 2 clerks;
- Extension Division (5);
- Co-operative Division (2) plus VSO volunteer;
- Livestock Division (5);
- Small Farmers Equipment Pool and Engineering Unit (1);
- Abattoir (1) and;
- Fisheries Division (1)

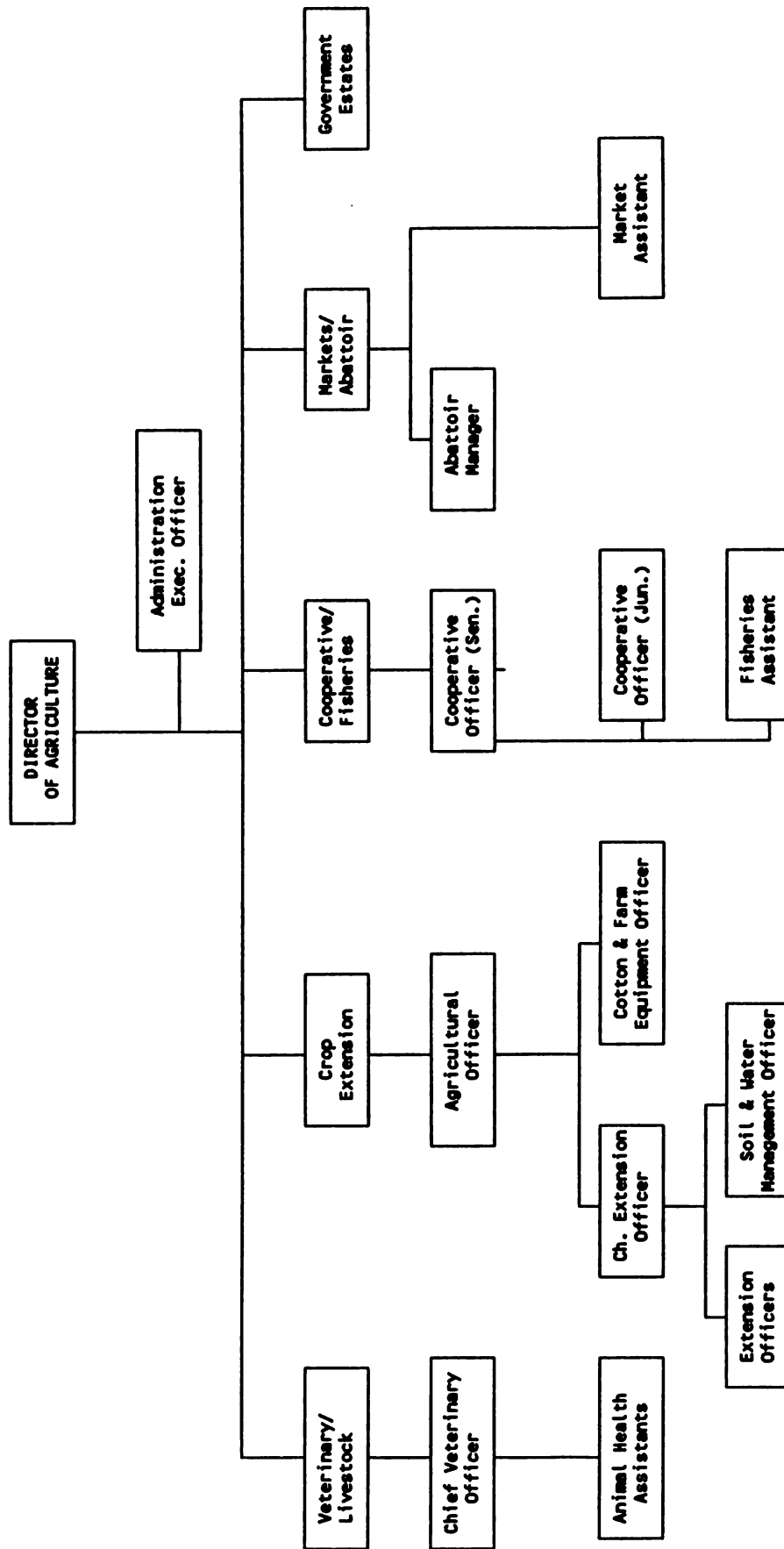
The Animal Production Unit is headed by a graduate (BSc degree) Livestock Officer, assisted by three undergraduate (Dip) Animal Production Extension Agents who also provide health services livestock farmers.

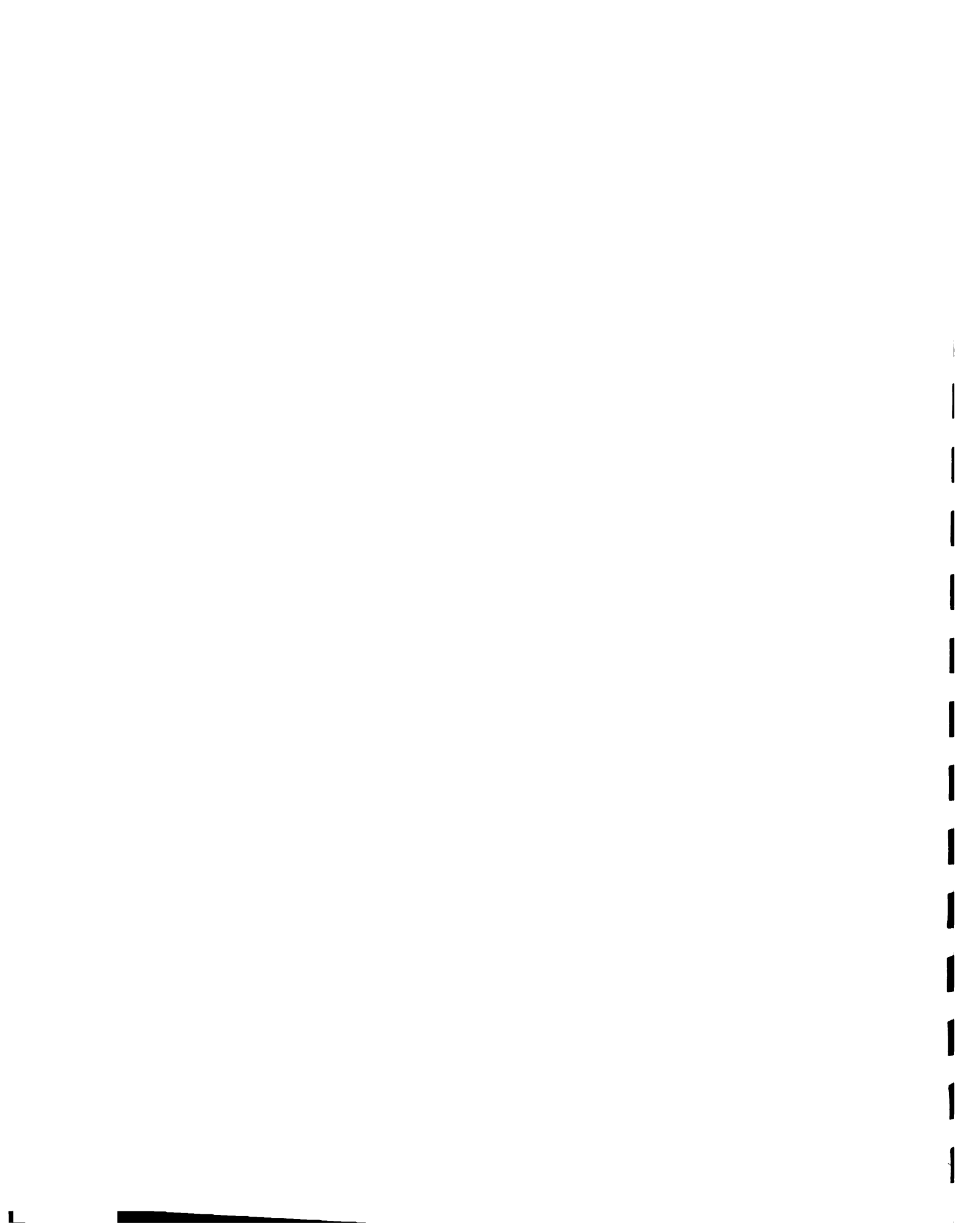
The Co-operative Division has two officers - a Senior Co-op Officer and a Co-op Officer. They receive support from one VSO volunteer assigned to the specific area of beekeeping. They work closely with other Units of the Department and monitor closely the activities of the Co-op Societies on the island. The two DOA staff persons have divided their responsibilities as follows: The Head of the Division concentrates on adult groups in the areas of promotion, education, supervision/monitoring and auditing and bookkeeping. The Co-op Officer concentrates his activities more with the 12 school co-operatives. He works with teacher



FIGURE 8.7

STRUCTURE OF THE DEPARTMENT OF AGRICULTURE, NEVIS





guides and head teachers in such things as coordination of school supplies and supervision of savings programme. The two Officers work closely together, filling in for each other as the need arises.

The Officers of the Co-operative Division work with both pre-co-operatives and co-operatives to ensure that the various societies abide by the provisions stipulated in the Co-operative Societies Ordinance, as well as the Statutory Rules and Orders made thereunder. The Officers place emphasis on auditing the financial records of the diverse groups, verifying accounts and assisting in the preparation of final accounts.

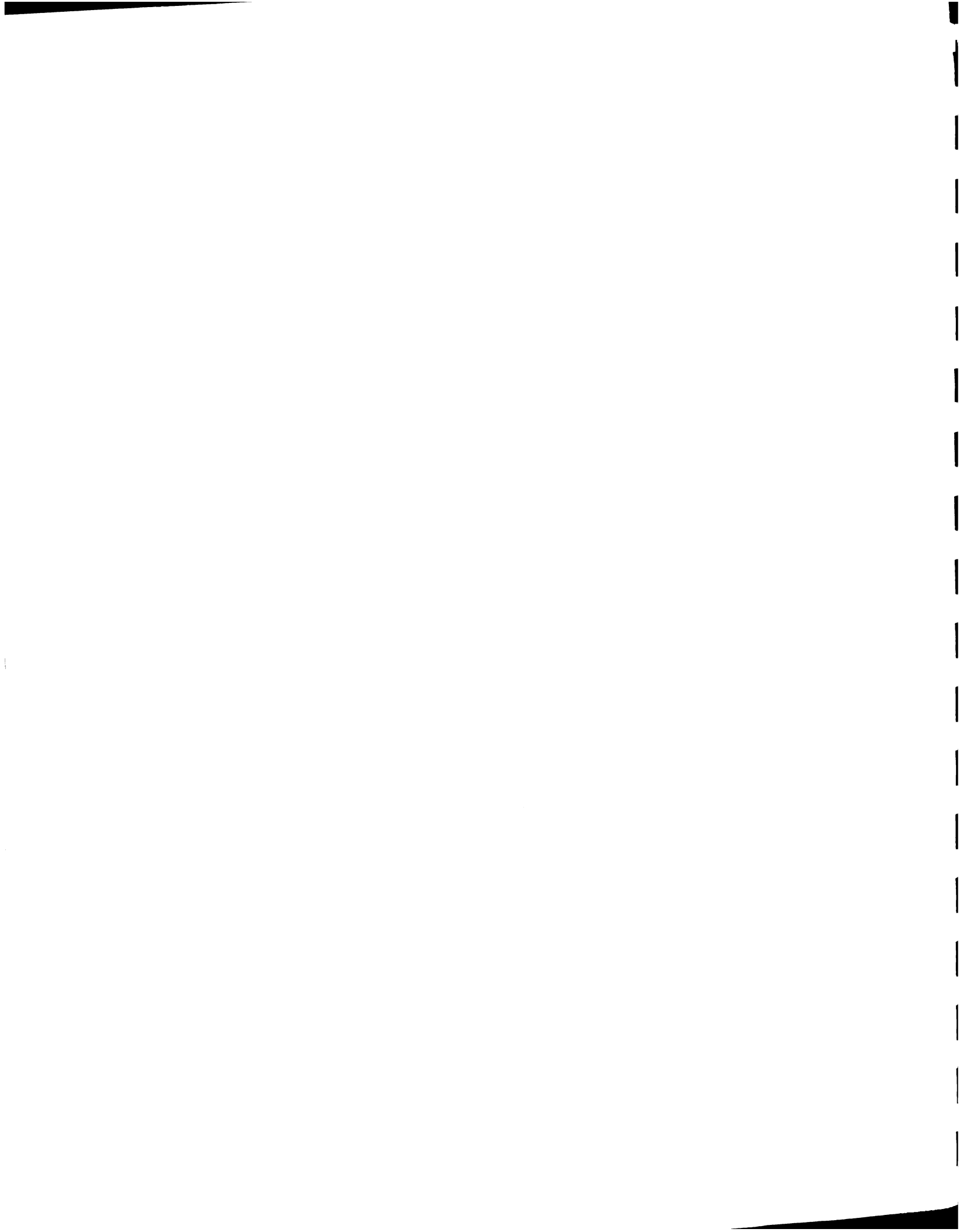
The primary problems of this Division are:

- too small staff to adequately service the 21 co-operatives in Nevis;
- limited budget for training purposes;
- limited skills in project identification and formulation, and
- lack of training materials and equipment.

8.4.4.2 Private Sector Institutions

There are a few private sector organizations in Nevis which directly or indirectly impact upon agricultural development. These are as follows:

- a) The Nevis Horticultural Society exists but is not very active.
- b) The Nevis Historical and Conservation Society.
- c) The Anglican Young People's Association is active. It has Committees of young people in various villages throughout Nevis which promote diverse development activities. DOA Extension Officers coordinate some of their agricultural development activities with these Committees.
- d) Nevis Association for Agricultural Workers in Extension
- e) The Foundation for National Development has an office in Nevis.
- f) Cooperatives



Co-operative type organisations are relatively abundant in Nevis. In fact, one of every three Nevisians belong to some form of co-operative society. Sixty-five percent of the total are members of credit unions. Over 700 young people are members of 12 school co-operatives. There is one artists co-op, two co-ops which deal with handicrafts, one fishing co-op, one co-operative of bee keepers and four farmers co-operatives or pre-co-ops.

The reason for the relatively large number of persons belonging to some form of organisation in Nevis may be partially explained by the fact that Nevis left monoculture over 60 years ago and has therefore had more time to learn the benefits of working together towards common goals. More specifically, it is felt that greater effort has gone into the promotion of co-operatives in Nevis. Another factor of significance is that a number of Peace Corps and VSO volunteers have actively promoted and supported cooperatives in Nevis. Not to be overlooked is the fact that several regional, international and NGOs have provided technical and financial assistance to a number of co-ops in Nevis over the past 15 years.

Some of the major cooperatives operating in Nevis are as follows:

- (i) Nevis Co-op Credit Union
- (ii) School Co-operatives
- (iii) Nevis Handicraft
- (iv) New Castle Pottery
- (v) Nevis Fishermen's Co-op
- (vi) Nevis Beekeepers
- (vii) Nisbett Plantation farmers
- (viii) Potworks Farmers Co-operative
- (ix) Cades Bay Farmers
- (x) New River Farmers Co-operative

8.4.4.3 Regional, Bilateral and International Institutions

The same external regional, bilateral and international institutions or agencies identified for St Kitts support agricultural development in Nevis.

CARDI has only one professional in Nevis. He holds a MSc degree in Entomology and works closely with the DOA's. He assists the Crop Division in all its technology development and transfer activities and provides technical support to livestock production management. CARDI/CARDATS project in Nevis is also actually involved in extension and marketing activities at Cades Bay, Potworks and Nisbett.

The ROC Mission has no resident staff in Nevis but provides training and other forms of technical assistance to professionals in the State.



8.5 Analysis of Sector Performance

8.5.1 Crops

8.5.1.1 Food Crops Sub-sector

Kittian and Nevisian farmers cultivate a wide range of food crops which include white potato, sweet potato, peanut, yam, pumpkin, pigeon pea, banana, plantain, tannia, dasheen, eddoe, cassava and corn. In Nevis, dasheen is cultivated only by a few subsistence farmers. Production of upland rice in St. Kitts (in the mid-1980's), although initially showing encouraging results, was discontinued due to inadequate and unreliable rainfall, and high labour cost.

In St. Kitts, white potato is cultivated almost exclusively by commercially oriented farmers who are generally young and enterprising, and control relatively large acreages (10-20 acres). Cultivation of four other food crops (sweet potato, peanut, yam and pumpkin) is quite popular among commercial as well as semi-commercial and subsistence farmers. Cultivation of the other food crops is undertaken mainly by subsistence farmers; a commercial banana plot at Wingfield Estate must be noted as an exception.

In Nevis, recent attempts at commercial production of white potato have not been very successful. However, commercially oriented Nevisian farmers, generally with less than three (3) acres, have been cultivating sweet potato, peanut and yam. Cultivation of the other food crops appears to be the domain of the semi-commercial and subsistence farmers of Nevis.

Domestic production data of food crop commodities for St. Kitts and Nevis are presented in Tables 8.8 and 8.9, respectively. While farm gate prices and market prices for these commodities are presented in Tables 8.10 and 8.11, respectively.

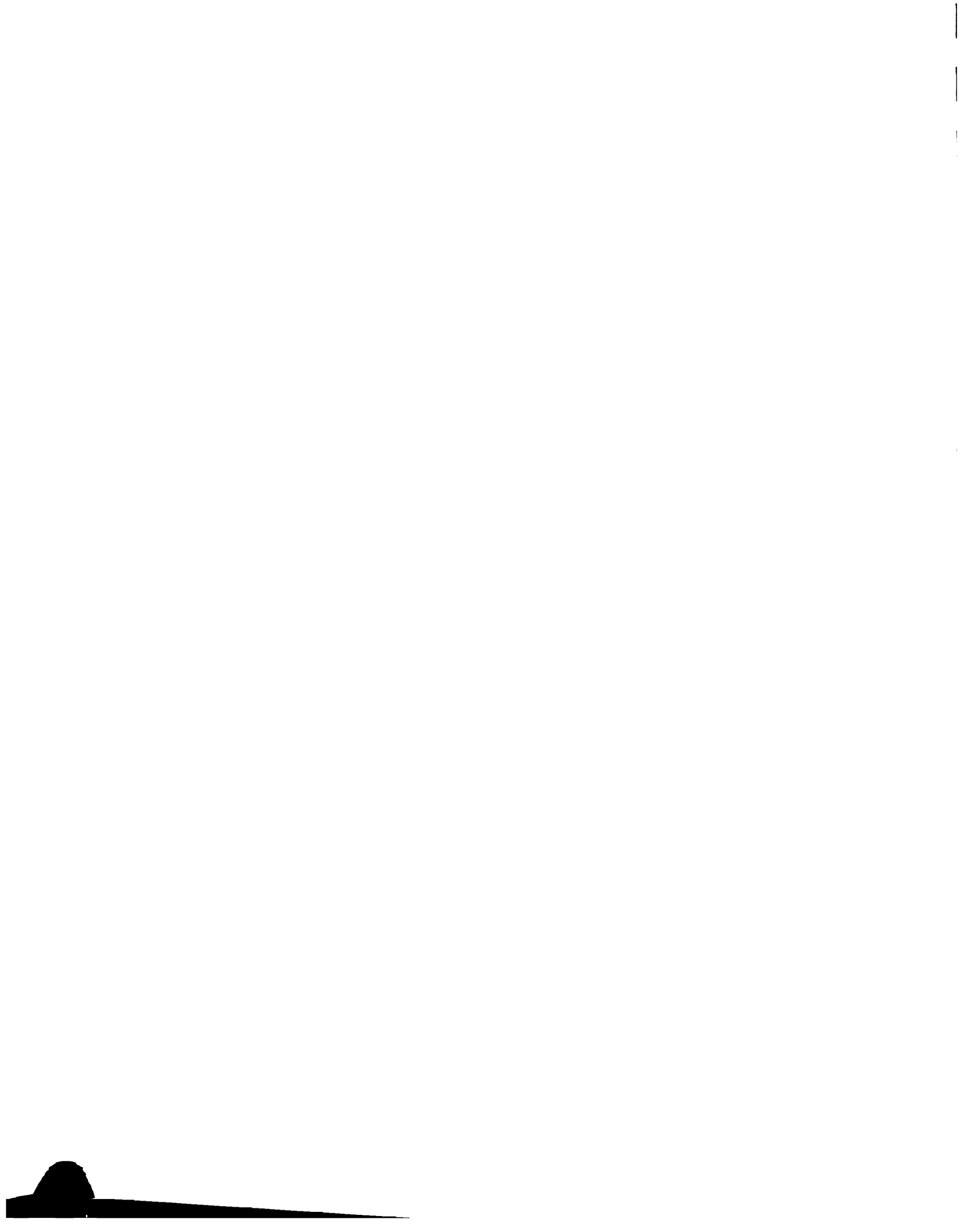


Table 8.8
Domestic Production (Metric Tonnes) of Food Crop Commodities
in St. Kitts and Nevis, 1979-1988

COMMODITY	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Banana	190.63	180.74	165.84	151.10	139.34	137.36	8.79	115.38	129.12	129.12
Cassava	9.34	9.34	8.24	8.24	6.59	6.04	5.93	8.24	0.77	4.95
Corn	3.57	2.20	2.47	2.47	2.20	3.85	3.96	0.55	0.66	0.66
Dasheen	21.43	21.43	21.43	22.53	38.90	14.29	14.45	11.87	14.56	17.03
Eddoe	20.88	20.88	21.98	21.98	26.43	19.51	19.23	15.38	15.38	17.03
Peanut	247.25	245.82	245.45	162.09	177.82	70.88	74.18	36.26	39.29	43.96
Pigeon Pea	23.22	20.08	21.10	21.10	4.45	NA	2.75	1.65	2.20	3.41
Plantain	10.99	11.54	12.03	13.19	116.65	11.84	9.59	4.12	4.56	6.76
Pumpkin	99.22	101.16	125.76	136.73	NA	84.73	92.86	73.63	80.77	80.77
Sweet Potato	423.34	329.16	381.45	381.45	263.74	208.79	208.13	288.46	318.68	197.80
Tannia	14.84	15.38	15.38	15.38	11.54	14.18	13.74	14.29	17.58	15.66
White Potato	-	-	-	-	-	-	-	19.51	42.58	134.07
Yam	183.66	150.77	127.42	105.44	102.17	74.73	74.95	32.97	28.57	43.96

NA means 'Not Available'

SOURCE: Central Planning Unit, Basseterre, St. Kitts

TABLE 8.9
FOOD CROP PRODUCTION IN NEVIS (1987-1989)

COMMODITY	PRODUCTION		
	1987	1988	1989
Sweet Potato	3.63	4.08	4.54
Peanut	4.54	5.44	4.54
Yam	13.61	21.32	22.68
Pigeon Pea	0.36	0.36	0.54
Tannia	1.36	1.59	1.59
Dasheen	0.68	0.45	0.45
White Potato	8.75*	1.00	4.31

*Based on data from Central Planning Unit, St. Kitts

Source: "Agriculture in Nevis" Nevis Country Environmental Profile, 1989.

Table 8.10
Farm Gate Prices of Food Crop Commodities in St. Kitts and Nevis
(EC\$/lb), 1979-1988

COMMODITY	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Banana	0.35	0.35	0.40	0.40	0.25	0.40	0.40	0.60	0.60	1.00
Cassava	0.50	0.50	0.55	0.60	0.25	0.25	0.25	0.25	0.25	0.50
Corn	1.00	1.00	1.10	1.15	1.00	1.00	0.50	1.00	1.00	1.00
Dasheen	0.60	0.65	0.65	0.70	0.50	0.98	0.98	1.10	1.10	2.50
Eddoe	0.60	0.65	0.65	0.75	0.50	1.00	1.06	1.35	1.35	2.00
Peanut	2.30	2.40	2.55	2.70	3.00	2.50	1.85	3.50	3.50	3.50
Pigeon Pea	0.80	0.85	0.85	0.90	0.90	NA	0.80	2.50	2.50	2.50
Plantain	0.50	0.50	0.55	0.60	1.00	0.40	0.80	2.00	2.50	2.50
Pumpkin	0.70	0.70	0.75	0.80	0.70	0.75	0.75	1.50	1.50	1.50
Sweet Potato	0.25	0.25	0.30	0.30	0.35	0.45	0.45	1.25	1.25	1.25
Tannia	0.60	0.60	0.64	0.70	0.75	1.10	1.10	1.00	1.00	2.50
White Potato	-	-	-	-	-	0.85	0.88	0.90	0.90	1.00
Yam	0.75	0.75	0.80	0.85	0.52	NA	NA	1.00	1.00	2.00

NA means 'Not Available'

SOURCE: Central Planning Unit, Basseterre, St. Kitts

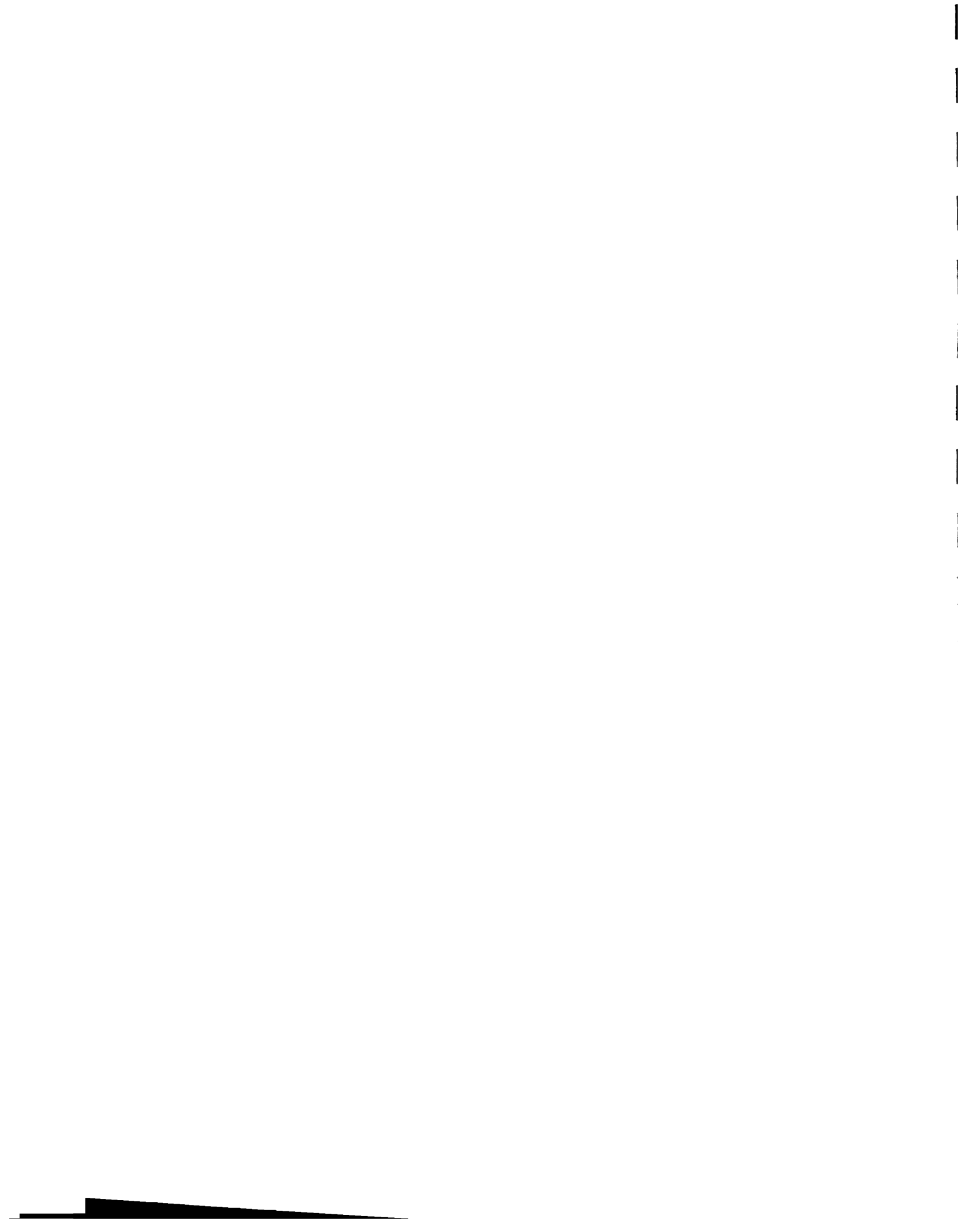


Table 8.11
Market Prices of Food Crop Commodities in St. Kitts and Nevis
(EC\$/lb.) 1979-1988

COMMODITY	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Banana	0.78	0.78	0.89	0.89	0.56	0.89	0.89	1.33	1.33	2.22
Cassava	1.11	1.11	1.22	1.33	0.56	0.56	0.56	0.56	0.56	1.11
Corn	2.22	2.22	2.44	2.56	2.22	2.22	1.11	2.22	2.22	2.22
Dasheen	1.33	1.44	1.44	1.56	1.11	2.18	2.18	2.44	2.44	5.56
Eddoe	1.33	1.44	1.44	1.67	1.11	2.22	2.36	3.00	3.00	4.44
Peanut	5.11	5.33	5.67	6.00	6.67	5.56	4.11	7.78	7.78	7.78
Pigeon Pea	1.78	1.89	1.89	2.00	2.00	NA	1.78	5.56	5.56	5.56
Plantain	1.11	1.11	1.22	1.33	2.22	0.89	1.78	4.44	5.56	5.56
Pumpkin	1.56	1.56	1.67	1.78	1.56	1.67	1.67	3.33	3.33	3.33
Sweet Potato	0.56	0.56	0.67	0.67	0.78	1.00	1.00	2.78	2.78	2.78
Tannia	1.33	1.33	1.44	1.56	1.56	2.44	2.44	2.22	2.22	5.56
White Potato	-	-	-	-	-	1.89	1.91	2.00	2.00	2.22
Yam	1.67	1.67	1.78	1.89	1.16	NA	NA	2.22	2.22	4.44

NA means 'Not Available'

SOURCE: Central Planning Unit, Basseterre, St. Kitts

8.5.1.2 Vegetables Sub-sector

In both St. Kitts and Nevis, the Department of Agriculture (DOA) is concentrating much effort and resources towards the development of the vegetable subsector. Commercial farmers consider vegetable production a most profitable undertaking, and as such vegetable crops are an important component in the mixed cropping activity of the semi-commercial and subsistence farmers.

Based on available production figures, the most important vegetable crops produced in St. Kitts are tomato, carrot, cabbage, sweet pepper, watermelon, cucumber, snap beans and lettuce. The DOA in St. Kitts also emphasizes onion production but farmers do not appear very enthusiastic towards the crop. In Nevis, according to the DOA Work Plan, the priority vegetable crops include cucurbits, solanaceous crops, brassicas and onion. The DOA in Nevis plans to develop the production of other vegetable crops (snapbean, okra, eggplant and carrot) to satisfy increasing local demand.

A few exotic vegetable crops were introduced into St. Kitts by the Republic of China (ROC) Technical Mission which established a 3-acre demonstration/training farm on the island in 1983. These crops include asparagus, honey-dew melon, broccoli, cauliflower, butternut squash and zucchini.

Vegetable production figures for period 1979-88 are presented in Table 8.12



Table 8.12
Vegetable Production in St. Kitts and Nevis, 1979-1988

COMMODITY	PRODUCTION (mt)									
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Cabbage	34.29	30.77	39.84	32.97	27.75	34.34	32.24	30.22	25.82	15.38
Carrot	17.86	17.45	16.93	17.03	19.23	16.76	18.68	32.42	45.60	74.18
Cauliflower	-	-	-	-	2.75	3.85	3.79	2.91	2.35	2.94
Cucumber	12.29	-	1.43	-	19.23	28.19	31.87	50.60	51.65	54.95
Lettuce (heads)	-	-	-	-	25000	12000	24500	30000	33000	45000
Onion	12.83	12.08	11.70	12.80	0.29	4.67	7.42	3.85	4.12	7.69
Snap Beans	-	-	-	-	-	-	2.75	12.47	14.29	17.03
Sweet Pepper	8.86	6.13	10.27	10.54	7.63	9.88	10.99	14.84	14.95	15.93
Tomato	24.80	23.98	28.48	29.58	24.73	30.77	31.87	65.93	74.18	89.01

SOURCE: Central Planning Unit, St. Kitts

8.5.1.3 Fruit Tree Crops Sub-sector

Despite the potential of the twin-island Federation to grow fruit trees, only one commercial project exists in St. Kitts, and four to five small private orchards in Nevis. Coconuts are the exception for Nevis where large scale orchards can still be found. The St. Kitts based Wingfield Fruit Project, owned and administrated by the St. Kitts Sugar Manufacturing Corporation (SSMC), has three main orchards of mangoes, avocados, and citrus. Regrettably however, most of the trees show signs of neglect.

Many fruit species can be found growing and bearing well i the numerous ghauts of St. Kitts. Most of the trees found in these ghauts were either planted by sugar workers and their families or grew voluntarily from seeds which fell from the original trees planted. Among these fruit trees, mangoes (Mangifera indica), coconuts (Cocos nucifera, and breadfruits (Artocarpus altilis) are the species most commonly found. Nevertheless, a considerable amount of other fruit trees such as pawpaws (Carica papaya), citrus (Citrus spp.), soursop (Annona muricata), sugar apple (A. squamosa) and golden apple (Spondia cytherea), can be found growing and bearing well.

In Nevis, scattered or sometimes small orchards of tree crops are spread over the entire island. Large scale coconut orchards still occupy a significant area, but the trees show signs of neglect. This is probably due to the low price of and difficulties encountered in selling the copra. The rapid expansion of the construction industry is mainly responsible for the significant reduction in acreages of coconut plantation found today. Fruit trees of mangoes, breadfruit, pawpaws, soursop, tamarind (Tamarindus indica), guineps (Melicoca bijuca), plums (Spondias spp.) and cashew (Anacardium occidentales) are found throughout the island growing and bearing well, despite the minimum, if any, care provided.



The present land tenure system in St. Kitts, where more than 95% of the land is owned by the state, has been identified as one of the main reasons for the lack of private commercial fruit tree orchards. Farmers are reluctant to plant fruit trees or do any long term investment under the present short term rental agreement with government (SSMC). Although a comprehensive long term land lease programme was planned in the 1986-1990 National Development Plan, the long awaited law necessary to ensure its implementation has not yet been passed. In Nevis, where the government own 30% of the lands, the main constraints seem to be the extreme dry condition, the limitation of water for irrigation, the scarcity of labour, the limited market and a low farmer interest due to the lack of promotion programmes such as demonstration plots and incentives.

In most countries of the Caribbean, there is a tradition of planting a few fruit trees in almost every home. This tradition has contributed not only to reduce normal city noises, beautify the cities and purify the air, but has also proven to be an excellent source of vitamins and mineral for the family at a very low cost. It is noticeable that this tradition is not as popular in Basseterre as it is in other Caribbean countries. This was quite noticeable especially in new housing development areas. The lack of promotion programmes to motivate residents to plant fruit trees in their back garden or yard, as well as a severe shortage in the supply of planting materials are among the two major causes for this situation. However, it is also recognized that there is a limitation on the land area available for cultivation as well as water for irrigation purposes. On the other hand, in Nevis almost every house has a few fruit trees in their backyard, despite being drier than St. Kitts.

For both islands the rapid expansion of the tourism sector has created additional demand for fruits in the hotels and open new market possibilities for local production of fruit crops.

Statistics on the production, yield, import and export of fruits are limited for St. Kitts and Nevis. However, the last census in 1987 gives some estimates of the production and sales from farmers' holdings. These are presented in Tables 8.13 and 8.14 for St. Kitts and Nevis, respectively.



Table 8.13
Production and sale of permanent crops
during a twelve month period 1986/9187
(St. Kitts)

TYPE OF TREE CROP	UNIT	HARVESTED	SOLD
Coconut - Dry	No.	35458	2113
Coconut - Jelly	No.	7743	415
Coconut - Copra	Tons.	7	0
Sweet Orange	No.	46437	4500
Grape Fruit	No.	83172	13586
Avocado (Pears)	Lbs.	139161	34790
Mango (Grafted)	No.	167828	78958
Mango (Others)	No.	101474	10540
Lime or Lemon	Lbs.	85367	26621
Other Citrus	No.	26669	460
Breadfruit	No.	42364	9411
Sugar Apples	Lbs.	8594	60
Guineps	Bnch.	19744	2068
Coffee Beans	Lbs.	126	0
Banana & Plantain	Lbs.	34101	17012

SOURCE: St. Kitts and Nevis Agricultural Census 1987

Table 8.14
All holdings by production and sale of permanent Crops
during past twelve months
(Nevis)

TYPE OF TREE CROP	UNIT	HARVESTED	SOLD
Coconut - Dry	No.	22193	760
Coconut - Jelly	No.	120047	69140
Coconut - Copra	Tons.	4558	4548
Sweet Orange	No.	18436	5514
Grape Fruit	No.	14038	5592
Avocado (Pears)	Lbs.	27450	6978
Mango (Grafted)	No.	91237	13191
Mango (Others)	No.	424629	29840
Lime or Lemon	Lbs.	223029	90688
Other Citrus	No.	39785	5413
Breadfruit	No.	61226	4590
Sugar Apples	Lbs.	55164	4904
Guineps	Bnch.	126701	11466
Coffee Beans	Lbs.	707	0
Banana & Plantain	Lbs.	11089	2422

SOURCE: St. Kitts and Nevis Agricultural Census 1987

8.5.2 Livestock Sub-sector

In St Kitts and Nevis, up to 1989, Livestock remained the second most important agricultural economic activity. Of the 11.59% agricultural contribution to total Gross Domestic Product (GDP) at constant prices in 1989, the livestock sub-sector actually represented 1.99%. This is substantially less than that contributed by sugar (5.96%) but higher than fishing (1.87%), crops (1.64%) and forestry (0.13%).

The 1987 agricultural census shows that of the 2218 farm holdings in St Kitts and 1211 in Nevis approximately 50.5% (1,119 holdings) in St Kitts and 3.1% (37 holdings) in Nevis were wholly livestock enterprises utilizing mainly traditional subsistence production systems. The remaining holdings, 1099 (49.5%) in St. Kitts and 1174 (96.9%) in Nevis, were involved in mainly crop production but inclusive of livestock (mixed holdings).

The main livestock of economic importance found in St Kitts and Nevis are cattle, sheep, goats, pigs, poultry and rabbits. Other species are donkeys, horses, deer and monkeys. Monkeys are of growing concern in spite of their research resource potential, because of their increasing role in crop damage and as hosts for pests.

The Tropical Bont Tick, (*Amblyomma variegatum*) was recognized in St Kitts and Nevis in 1978. The incidence of acute dermatophilosis, a skin infection caused by the bacteria, (*Dermatophilus congolensis*) associated with the bont tick, increased dramatically following infestation with this tick. The bont tick is also an important vector of the rickettsia, (*Cowdria ruminantium*) the causative agent of Cowdriosis or Heart-water disease of ruminants which can result in high cattle mortality. Wherever the bont tick and its associated diseases are found producers have experienced high losses in livestock production. It has been estimated that at least one third of the cattle population in St Kitts and Nevis have been affected by Dermatophilosis. Losses have been particularly severe in fenced beef herds and this has forced some farmers to discontinue cattle production completely. Sheep and goats are also affected by bont tick but to a less extent than cattle.

These losses have contributed to the decline in economic performance of livestock, but to some extent, with the growing emphasis on tourism, have forced some interest in pig and poultry production.

The magnitude of the problem is demonstrated in the historical trends in livestock numbers in the Federation for cattle, sheep, goats and pigs as presented in Table 8.15 below.

Table 8.15
Livestock Population - St. Kitts and Nevis

COUNTRY	YEAR	CATTLE	SHEEP	GOAT	PIGS
St. Kitts	1984	5831	9254	7223	6885
	1987*	2627	1606	1896	1640
	1990**	400	803	958	-
Nevis	1984	1908	11135	6445	2839
	1987*	720	5165	3521	5000
	1990**	700	8000	8000	3000

* Census

** Estimate by D.O.AS.

As in many West Indian islands, livestock production in St Kitts/Nevis has played a secondary role to export crop development. The admitted neglect to the livestock subsector is manifested in the mounting costs for importation of livestock products in spite of the obvious interest and involvement of people in livestock production.

Livestock meat and meat product imports for St Kitts and Nevis as shown in Table 8.16 was valued at EC\$21.4 million in 1989 and EC\$25.0 million if fish products are included.

Figures for domestically slaughtered animals in the Federation for peropd 1981-89 are shown in Table 8.17. The table shows an animal slaughter of approximately 1000 cattle, 4000 sheep and goats and 2000 pigs. This slaughter rate has remained fairly constant over the last ten year period, but has resulted in a depletion of cattle stocks in St Kitts and Nevis. Furthermore government owned livestock stations in Nevis have suffered from reduced productivity for a number of reasons. This has continued to frustrate the efforts of the Department of Agriculture in the development of this vital sub-sector. The factors mainly responsible for the decimation of the cattle industry are as follows:

- (i) effects of Dermatophilosis;
- (ii) consumer demand; and
- (iii) the low cattle productivity under traditional subsistence production systems.

Table 8.16
Volume and Value Livestock Product Imports
(a) Value - EC\$ (b) Quantity (kgs)

PRODUCT	1985		1986		1987		1988		1989	
	QUANTITY	VALUE	QUANTITY	VALUE	QUANTITY	VALUE	QUANTITY	VALUE	QUANTITY	VALUE
Meat of Swine	25240	107907	37893	162320	N/A	N/A	38365	281397	37652	290356
Whole chicken /parts	1368895	2896893	1808082	4311276	N/A	N/A	1705713	4281791	1687063	4739682
Other whole poultry and parts	19864	85111	23785	111593	N/A	N/A	43377	184750	39071	143712
Meat and bovine animals	61351	455364	68989	497772	N/A	N/A	89349	971187	56704	511275
Meat of Sheep	3616	35926	3680	31345	N/A	N/A	21752	172238	36484	263151
Meat of Goat	-	-	960	9188	N/A	N/A	9912	63006	7031	42827
Pig trotters	32299	49066	30061	52602	42638	92023	66429	117138	60205	322438
Sub Total		3630357		5176096		92023		6071507		6313441
Meat and Edible Meat offal soaked in brims, salted etc.	65850	303284	130147	526282	96000	508405	134166	612916	117014	577386
Preserved Meat and edible meat offal	309455	1624748	414454	204778	391219	2657624	469470	2604461	331508	9594302
Milk and Cream	2161958	2985897	1003237	2256025	699227	1801965	1340812	3417784	937999	3362584
Butter	12660	42504	42170	205109	29338	192632	28881	69244	26102	192587
Cheese and Curd	83481	440013	142482	977398	152223	1026582	131131	1072530	152028	1353557
Eggs, fresh or dried	9259	38535	256	8733	3257	16762	289	12364	12135	52783
Sub Total		5434981		4178325		6203970		7789299		15133199
Fresh fish	5100	82634	10682	134178	13967	154645	29147	278706	110960	147577
Dried or Salted Fish	221816	962952	168605	902124	87394	616795	160162	1113206	156118	1327940
Crustaceans and molluscs	1860	62311	2121	50185	11520	294915	10068	249928	7827	135645
Prepared/Preserved crustaceans	81526	494775	-	482953	108719	796847	110027	888388	98334	698563
Sub Total		1602672		1569440		1863202		2530228		3579725
TOTAL		10668010		10923861		8159195		16391034		25026365

US\$ 1.00 = EC\$2.7

Table 8.17
Animal Slaughtered in St Kitts-Nevis 1981-1989

YEAR	CATTLE	SHEEP	GOATS	PIGS
1981	1018	2546	1749	2232
1982	1031	2568	1896	2189
1983	950	2392	1870	2326
1984	1003	2368	1881	2082
1985	966	3096	1781	2016
1986	963	3096	1827	2016
1987	930	2702	1665	1882
1988	1000	2535	1414	2227
1989	866	2444	1146	2198
Average	970	2610	1692	2113

Source: Public Health Department - St Kitts



TABLE D1.1
Population Trends, 1976-1988

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Total Population (end of year)	42,881	43,284	43,014	43,050	43,963	44,923	45,300	44,130	43,205	42,290	43,700	43,610	44,380
Crude Birth Rate (per 1000)	26.9	24.4	21.3	24.4	26.7	25.6	29.0	24.1	25.3	23.7	23.0	21.8	21.3
Crude Death Rate (per 1000)	9.7	10.1	9.7	10.7	11.3	10.1	11.2	10.6	10.9	10.2	10.5	10.6	10.5
Rate of Natural Increase (per 1000)	17.2	14.3	11.6	13.7	15.4	15.5	17.8	13.6	14.4	13.5	12.5	11.2	10.8
Total Births	1,320	1,212	1,059	1,211	1,170	1,137	1,307	1,093	1,115	1,026			
Total Deaths	476	503	466	529	493	450	503	478	481	441			
Natural Population Increase	844	709	593	682	677	687	804	615	634	585			
Net Migration	(534)	(306)	(863)	(646)	(418)	273	(427)	(1,747)	(1,559)	(1,500)			
Net Population Increase	310	403	(270)	310	259	960	377	(1,132)	(925)	(915)			
Infant Mortality Rate (per 1000)	33.3	42.1	41.5	49.5	53.0	45.7	42.8	41.2	27.8	30.2	39.7	22.7	24.4
Neonatal Death Rate	...	...	...	...	...	29.0	26.0	20.1	18.8	20.3	28.8	16.9	14.8
General Fertility Rate	...	...	...	...	...	121.6	114.3	111.7	110.8	105.3	105.9	102.2	95.0
Total Fertility Rate	...	...	...	...	...	3.3	3.0	3.0	3.0	2.9	3.0	2.9	2.9
Gross Reproduction Rate	...	...	...	...	...	1.6	1.4	1.4	1.5	1.4	1.5	1.4	1.4
Expectation of Life at Birth (yrs): Male	...	...	...	...	...	...	64.1	66.1	64.9	66.0	65.5	65.3	65.9
Female	...	...	...	...	...	...	68.5	69.8	68.5	69.7	69.9	70.8	71.0

N.B. Total population for 1986-1988 are mid-year estimates.

Sources: (1) World Bank Document, St. Kitts & Nevis Economic Memorandum, April 10, 1985 and 1986.
(2) Planning Unit, Ministry of Agriculture, Lands, Housing and Development.



TABLE D1.2
Gross Domestic Product by Economic Activity, at Factor Cost
in Current Prices, 1977-1989
(ECS Millions)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Agriculture	13.10	12.18	13.64	16.51	13.83	20.31	16.19	19.22	16.44	21.84	25.97	27.52	27.70
Sugarcane	8.31	6.95	7.25	9.80	5.34	11.40	7.54	10.85	7.22	11.57	13.29	14.09	13.39
Crops (other)	1.42	1.62	2.28	2.23	2.45	2.28	1.70	1.36	1.68	2.90	4.52	4.49	4.79
Livestock	2.39	2.36	2.53	2.62	3.43	3.48	3.47	2.91	3.15	2.51	3.00	3.09	3.26
Forestry	0.05	0.06	0.08	0.09	0.11	0.12	0.12	0.13	0.16	0.18	0.20	0.23	0.25
Fishing	0.93	1.19	1.50	1.77	2.50	3.03	3.36	3.87	4.23	4.88	4.96	5.62	6.01
Mining & Quarrying	0.20	0.26	0.24	0.32	0.33	0.41	0.45	0.38	0.45	0.50	0.64	0.86	1.08
Manufacturing	12.54	13.24	12.79	15.74	17.88	18.66	17.55	22.62	21.94	32.83	35.37	44.25	47.38
Sugar	8.60	7.26	7.22	7.87	9.16	9.00	7.22	9.59	7.51	10.35	9.73	10.96	11.70
Other	3.94	5.98	5.57	7.87	8.72	9.66	10.33	13.03	14.43	22.48	25.64	33.29	35.68
Electricity & Water	0.61	0.71	0.81	0.88	1.11	1.43	1.36	1.60	1.78	4.40	2.96	2.71	2.85
Construction	6.59	5.49	8.12	10.58	10.85	13.60	14.96	12.82	15.05	16.68	21.32	28.74	35.81
Wholesale & Retail Trade	7.01	8.25	9.80	12.99	14.09	16.53	18.27	20.69	23.95	27.96	32.99	35.36	38.19
Hotels & Restaurants	1.42	3.28	4.79	4.49	5.39	4.30	4.35	7.35	11.82	16.15	21.73	21.93	24.06
Transport	3.81	4.60	5.06	6.54	8.89	10.35	11.63	13.65	14.98	17.41	19.98	22.03	24.01
Road Transport	2.90	3.65	4.11	5.36	7.69	8.66	9.11	9.48	10.13	11.47	11.87	12.73	13.37
Sea Transport	0.41	0.51	0.50	0.62	0.76	1.19	2.00	3.58	4.17	4.85	6.17	6.74	7.64
Air Transport	0.50	0.44	0.45	0.56	0.44	0.50	0.52	0.59	0.68	1.09	1.94	2.56	3.00
Communications	2.05	2.72	2.78	3.46	6.53	7.10	4.79	5.89	6.16	8.88	9.84	18.48	19.50
Banks & Insurance	3.79	4.01	4.58	5.25	5.84	8.56	8.18	11.09	11.89	19.29	17.18	22.50	24.26
Real Estate & Housing	5.26	5.31	6.51	6.66	7.48	7.82	8.13	8.45	8.98	9.52	10.00	10.61	11.44
Government Services	11.75	15.97	18.25	19.20	26.64	28.55	29.93	36.08	37.33	41.23	44.64	49.54	54.49
Other Services	3.55	3.53	3.97	5.20	6.57	7.30	7.83	8.40	9.01	9.65	10.13	10.53	11.42
Imputed Service Charge	-2.48	-2.93	-3.48	-4.36	-3.99	-6.18	-7.13	-8.92	-8.02	-13.16	-12.94	-16.80	-19.92
Total	69.20	76.52	87.86	103.46	121.44	138.74	136.49	159.32	171.76	213.18	239.81	278.26	302.27
Growth Rate	n.a.	10.58	14.82	17.76	17.38	14.25	-1.82	16.73	7.81	24.12	12.49	16.03	8.63

Sources: (1) O.E.C.S. National Accounts Digest, 1985.
(2) ECLAC Document, Selected Statistical Indicators of Caribbean Countries, 1990.

TABLE D1.3
Gross Domestic Product by Economic Activity, at Factor Cost
in Constant Prices, 1977-1989
(ECS Million)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Agriculture:	13.10	13.70	14.86	13.44	14.09	14.09	11.50	11.99	11.72	11.53	11.97	12.06	11.59
Sugar Cane	8.31	8.54	9.07	8.03	7.97	8.25	6.52	7.05	6.21	6.15	6.15	6.40	5.96
Crops	1.42	1.62	2.09	1.99	2.05	1.74	1.25	1.17	1.34	1.53	1.83	1.50	1.64
Livestock	2.39	2.43	2.41	2.21	2.54	2.49	2.11	2.06	2.38	1.79	1.88	1.94	1.99
Forestry	0.05	0.05	0.06	0.07	0.07	0.08	0.08	0.08	0.09	0.10	0.11	0.12	0.13
Fishing	0.93	1.06	1.23	1.14	1.46	1.53	1.54	1.63	1.70	1.96	2.00	2.10	1.87
Mining & Quarrying	0.20	0.15	0.18	0.23	0.24	0.28	0.31	0.26	0.29	0.32	0.37	0.43	0.51
Manufacturing	12.54	13.15	13.31	13.53	12.15	13.17	11.72	13.15	12.44	13.46	13.23	13.68	13.85
Sugar	8.60	8.23	8.39	7.34	6.83	7.59	5.92	6.54	5.67	6.01	5.33	5.39	5.23
Other	3.94	4.92	4.92	6.19	5.32	5.58	5.80	6.61	6.77	7.45	7.90	8.29	8.62
Electricity & Water	0.61	0.71	0.74	0.88	0.94	1.00	1.01	1.07	1.16	1.27	1.36	1.50	1.54
Construction	6.59	4.94	6.09	7.72	7.99	9.49	10.44	8.72	9.81	10.30	12.47	14.47	16.93
Wholesale & Retail Trade	7.01	7.75	8.32	9.36	9.20	10.18	10.95	12.29	13.81	14.50	15.81	16.91	17.38
Hotels & Restaurants	1.42	2.21	2.78	2.61	2.91	2.50	2.48	3.68	4.64	6.22	7.59	7.66	7.56
Transport:	3.81	4.03	3.94	4.58	4.85	5.03	5.13	5.39	5.79	6.35	7.03	7.52	7.97
Road Transport	2.90	2.93	2.82	3.41	3.57	3.75	3.81	3.96	4.19	4.36	4.74	5.07	5.32
Sea Transport	0.41	0.43	0.42	0.47	0.52	0.55	0.58	0.61	0.68	0.90	1.04	1.10	1.21
Air Transport	0.50	0.67	0.70	0.70	0.76	0.73	0.74	0.82	0.92	1.09	1.25	1.35	1.44
Communications	2.05	2.15	2.35	2.57	4.44	4.38	4.51	5.09	5.67	7.39	8.19	11.53	14.17
Banks & Insurance	3.79	3.63	4.06	4.28	4.19	4.96	5.04	5.56	5.84	6.42	6.74	7.08	7.43
Real Estate & Housing	5.26	5.31	5.40	5.50	5.57	5.62	5.71	5.80	6.03	6.21	6.33	6.46	6.62
Government Services	11.75	13.07	14.95	15.69	16.58	17.75	18.50	22.40	23.52	23.33	24.39	24.64	24.81
Other Services	3.55	3.31	3.37	3.75	4.29	4.50	4.72	4.95	5.20	5.46	5.68	5.51	5.68
Imputed Service Charges	-2.48	-2.64	-3.10	-3.59	-3.06	-3.25	-3.30	-3.63	-3.81	-4.19	-4.40	-4.83	-5.07
Total	69.20	71.47	77.25	80.55	84.38	89.70	88.72	96.72	102.11	108.57	116.76	124.62	130.97
Growth Rate		3.28	8.09	3.92	5.11	6.30	-1.09	9.02	5.57	6.33	7.54	6.75	5.10

Sources: (1) O.E.C.S. National Accounts Digest, 1985.

(2) ECLAC Document, Selected Statistical Indicators of Caribbean Countries, 1990.

TABLE D1.4

Rate of Growth of
Gross Domestic Product by Economic Activity, at Factor Cost
in Constant Prices, 1975-1989

Sectors	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Agricultures:												
Crops	4.58	8.47	-9.56	4.84	....	-18.39	7.13	-2.25	-1.62	3.82	0.75	-3.90
Livestock	4.42	9.84	-10.22	....	-0.30	-22.22	8.11	2.62	13.21	19.61	-13.96	2.45
Forestry	1.67	-0.82	-8.30	14.93	-1.97	-15.26	4.74	15.53	-24.79	5.03	3.19	2.58
Fishing	....	20.00	16.67	....	14.29	....	....	12.50	11.11	10.00	9.09	8.33
	13.98	16.04	-7.32	28.07	4.79	0.65	5.84	4.29	15.29	2.04	5.00	-10.95
Mining & Quarrying	-25.00	20.00	27.78	4.35	16.67	-17.86	4.35	11.54	10.34	15.62	16.22	18.60
Manufacturing	4.86	1.22	2.03	-10.53	8.40	-11.01	9.47	-5.40	8.20	-1.71	3.40	1.24
Electricity & Water	16.39	4.23	18.92	6.82	6.38	1.00	0.99	8.41	9.48	7.09	10.29	2.67
Construction	-25.04	23.28	26.77	3.50	18.77	-18.12	3.99	12.50	4.99	21.07	16.04	17.00
Wholesale & Retail Trade	10.56	7.35	12.50	-1.71	10.65	7.56	2.74	12.37	5.00	9.03	6.96	2.78
Hotels & Restaurants	55.63	25.79	-6.12	11.49	-14.09	-0.80	9.68	26.09	34.05	22.03	0.92	-1.31
Transport:												
Road Transport	5.77	-2.23	9.39	12.53	3.71	1.99	1.95	7.42	9.67	10.71	6.97	5.98
Sea Transport	1.03	-3.75	11.35	13.69	5.04	1.60	1.57	5.81	4.06	8.72	6.96	4.93
Air Transport	4.88	-2.53	11.90	10.64	5.77	5.45	5.17	11.48	32.35	15.56	5.77	10.00
	34.00	4.48	....	8.57	-3.95	1.37	1.35	12.20	18.48	14.68	8.00	6.67
Communications	4.88	9.30	9.36	72.76	-1.35	2.97	2.88	11.39	30.34	10.83	40.78	22.90
Banks & Insurance	-4.22	11.85	5.42	-2.10	18.38	1.61	1.59	5.04	9.93	4.98	5.04	4.94
Real Estate & Housing	0.95	1.69	1.85	1.27	0.90	1.60	1.58	3.97	2.99	1.93	2.05	2.48
Government Services	9.28	14.41	5.17	5.50	7.12	0.46	0.46	5.00	-0.81	4.54	1.03	0.69
Other Services	-6.76	1.81	11.28	14.40	4.90	4.89	4.87	5.05	5.00	4.03	-2.99	3.09
Imputed Service Charges	-6.45	-17.42	-15.81	14.76	-6.21	-1.54	-1.52	-4.96	-9.97	-5.01	-9.77	-4.97
Total	2.95	8.07	4.03	5.01	6.31	-4.92	4.07	5.57	6.33	7.54	6.73	5.10

Source: O.E.C.S. National Accounts Digest, 1985.

TABLE D1.5

Selected Monetary Indicators, 1981-1990*
(ECS Millions)

	1981	1982	1983	1985	1986	1987	1988	1989	1990
Net Foreign Assets	6.1	2.7	2.9	36.7	42.7	64.8	70.3	68.6	72.9
Net Credit to Central Government	-2.9	1.2	6.2	15.3	29.2	28.5	27.8	44.2	53.3
Credit to Non-financial Public Enterprises	n.a.	n.a.	n.a.	56.2	58.2	2.3	8.5	19.8	34.5
Credit to Private Sector	51.9	60.2	69.3	105.0	102.9	125.4	179.7	244.7	232.1
Liabilities to the Private Sector**	52.0	61.1	69.7	184.7	220.2	199.2	250.0	306.4	340.8
Demand Deposits	10.7	9.7	11.1	19.8	37.6	42.3	57.8	77.5	86.4
Savings Deposits	31.2	36.1	39.9	53.8	63.1	76.7	95.2	111.8	112.3
Time Deposits	9.8	14.8	17.3	103.4	109.6	63.6	74.8	82.4	96.3
Foreign Currency Deposits	0.3	0.5	1.4	7.7	9.9	16.6	22.1	34.6	43.9
Non-Resident Deposits	16.1	16.4	18.1	22.5	24.1	28.6	n.a.	n.a.	41.0

* 1984 missing.

** For 1985-90 includes Non-Financial Public Enterprises.

Sources: (1) Eastern Caribbean Central Bank, Report and Statement of Accounts, Various Issues.
(2) World Bank Document, St. Kitts & Nevis Economic Memorandum, 1985.

TABLE B1.6
Loans and Advances by Commercial Banks, 1981-1990
(ECS Millions)

Sectors	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Agriculture	0.2	0.7	0.5	0.5	0.8	0.9	1.6	9.1	20.9	29.3
Fisheries	0.1	0.1	0.1	0.1	0.5	0.6	0.8	0.6	0.9	0.3
Manufacturing	5.7	5.3	4.4	4.5	6.0	4.9	6.2	12.0	14.7	14.9
Distributive Trade	10.7	12.2	13.6	14.6	12.8	17.0	21.3	27.5	37.5	37.8
Tourism	6.9	8.1	10.7	11.3	11.2	11.7	13.8	19.5	26.3	23.2
Entertainment & Catering	0.5	1.1	0.8	0.6	0.9	1.0	1.2	1.6	1.7	1.8
Transport	5.1	6.4	6.0	5.7	5.5	6.4	8.4	7.5	10.2	8.0
Public Utilities	...	0.1	...	1.7	1.6	0.4	2.2	10.6	12.1	10.6
Construction & Land Development	9.9	10.2	10.8	12.0	10.8	10.3	10.4	6.3	11.8	11.3
Gov't and Statutory Bodies	35.1	42.4	57.0	66.2	86.9	90.7	33.5	45.3	48.0	54.8
Professional & Other Services	4.9	5.1	8.1	6.8	1.7	1.9	2.8	6.4	7.3	6.9
Personal	18.7	23.7	27.7	34.6	40.6	48.7	55.5	78.9	101.1	126.6
House and Land	11.2	14.3	16.3	19.9	24.7	28.8	31.1	46.0	58.6	...
Durable Consumer Goods	3.1	3.6	5.5	6.1	7.7	7.8	9.4	15.4	19.4	...
Other Personal	4.4	5.8	6.0	8.5	8.2	12.1	15.1	17.5	23.2	...
Other Advances	7.2	8.6	7.6	7.5	4.1	4.2	2.8	1.1	3.1	...
Total Loans and Advances	105.0	124.1	147.4	166.1	183.3	198.7	160.6	226.4	295.6	325.5

Sources: (1) World Bank Document, St. Kitts & Nevis Economic Memorandum, 1985.
(2) Eastern Caribbean Central Bank, Report and Statement of Account, Various Issues.



TABLE D1.7

Loan Approvals by St. Kitts & Nevis Development Bank, 1981-1990
(\$'000)

Activities	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Agriculture	2.0	25.7	34.8	143.5	230.2	375.5	253.9	245.0	479.7	82.8
Food Crops	...	...	5.0	12.7	33.1	97.7	96.4	194.5	192.6	59.5
Livestock	...	3.7	25.0	19.0	143.1	29.4	15.4	5.1	213.3	4.2
Poultry	...	...	5.0	...	128.2	28.5	8.4	...	197.9	...
Cattle	...	3.7	20.0	9.0	14.9	0.9	7.0	...	12.7	4.2
Other	...	...	...	10.0	...	...	...	5.1	2.7	...
Fishing	2.0	22.0	4.8	111.8	54.0	248.4	142.1	45.4	73.8	19.1
Industry	...	221.8	243.7	902.6	1540.7	2869.1	1970.3	2690.9	4040.9	1905.6
Industrial Credit	...	51.8	116.4	525.7	1540.7	2704.1	1970.3	2690.9	4040.9	1905.6
S.I.C.	...	170.0	127.3	376.9	...	165.0	...	...	...	...
Transportation	176.6	...	143.5	30.5	14.2	54.8	80.0	182.3	188.5	...
Education	39.2	284.5	346.7	517.8	515.2	811.8	1247.0	1252.0	1167.3	678.0
Housing-Mortgage Finance	304.5	891.8	843.6	1233.7	1691.3	1341.4	2208.9	1929.8	3768.2	2319.2
Others	...	30.7	57.6	71.1	157.9	241.0	418.0	228.3	224.1	199.5
Total	522.3	1454.5	1669.9	2899.2	4149.6	5693.7	6178.0	6528.3	9668.6	5185.1

Source: Annual Report of the Development Bank of St. Kitts & Nevis.



TABLE D1.13

Approved Capital Expenditure for Agriculture, 1979-1990 (EC\$ '000)

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Crop Production								15624.4	22716.2	23543.0	29514.0	30466.0
Livestock								561.3	561.3	617.2	621.9	621.9
Forestry								0.6	8.0	95.6	13.3	329.2
Fisheries											15.6	15.6
Markets								794.9	817.8	930.2	972.2	...
Research								...	...	77.4	81.4	...
Planning								...	1.9	7.0	298.7	595.9
Other								2942.0	1839.1	40.9	48.6	55.2
Total	6007.9	7142.2	2715.7	4783.8	4996.9	7281.4	14149.0	19923.2	25944.3	25311.3	31565.7	32083.8

Actual Capital Expenditure for Agriculture, 1979-1990 (EC\$ '000)

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Crop Production								4400.0	6378.5	7401.1	12813.6	9969.2
Livestock								251.6	2206.8	2197.0	1604.1	315.0
Forestry								2423.4	2168.2	395.7	321.6	227.2
Fisheries								847.1	1013.4	909.9	23.2	68.6
Markets								425.0	119.4	25.6	142.8	...
Research								...	329.5	140.4	110.4	323.3
Planning								...	180.3	718.0	725.3	571.4
Other								435.3	53.8	12.7	11.5	11.5
Total	1645.7	1529.0	2575.8	4589.3	8925.4	7519.4	11617.1	8782.4	12449.9	11800.4	15752.5	11486.2

Note: Budget estimates provide information on sub-sectors only for 1985.

Source: Budget Estimates for St. Kitts & Nevis, various issues.



TABLE D1.14

Selected Tourism Data, 1978-1990

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Total Number of Visitors	37,076	39,839	38,533	46,326	45,721	57,109	75,118	80,467	83,768	97,888	123,253	108,658	109,630
Cruise-ship	9,421	6,859	5,782	10,850	11,146	22,835	34,062	31,522	26,963	31,438	53,645	36,559	33,941
Excursionist	1,377	1,565	1,681	1,034	891	969	1,190	1,398					
Stopover	26,278	31,415	31,070	34,442	33,684	33,305	39,866	47,547	56,805	66,450	69,608	72,125	75,689
Hotel	10,377	13,263	12,649	14,199	12,685	9,817	16,446	24,277	33,436	39,832	42,385	41,837	...
Private Homes and Others	13,544	15,192	15,074	16,660	18,115	19,882	20,404	22,217	23,369	26,618	27,223	30,288	...
Business	2,357	2,960	3,347	3,583	2,884	3,606	3,016	1,053					...
Average Period of Stay (days)													
Hotel	5.4	5.2	5.2	5.4	5.6	6.0	6.5	7.0	...	...	...	...	...
Private Homes and Others	12.0	12.0	12.1	12.2	12.4	12.5	12.5	12.5	...	...	...	...	...
Business	5.4	5.4	5.5	4.8	4.9	5.0	5.0	5.0	...	...	...	...	...
Average Expenditure/Day (EC\$)													
Cruise-ship	26.7	29.7	35.1	38.6	40.5	43.2	47.3	54.0	...	...	...	...	...
Excursionist	53.5	59.4	70.2	77.2	81.0	83.7	89.1	89.1	...	...	...	...	...
Hotel	133.7	148.5	175.2	192.8	194.4	205.2	228.2	228.2	...	...	...	...	...
Private Home	26.7	29.7	35.1	38.6	40.5	43.2	47.3	47.3	...	...	...	...	...
Business	142.8	158.5	187.1	205.7	216.0	226.8	238.1	243.0	...	...	...	...	...
Total Expenditure (EC\$M)	13.9	18.4	21.7	26.7	26.5	28.0	41.7	54.9	67.4	90.2	101.4	106.7	...
Cruise-ship	0.2	0.2	0.2	0.4	0.5	1.0	1.6	1.6	...	...	...	...	...
Excursionist	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	...	...	...	...	...
Hotel	7.5	10.2	11.5	14.8	13.8	12.1	24.4	38.8	...	...	...	...	...
Private Home	4.3	5.4	6.4	7.9	9.1	10.7	12.0	13.1	...	...	...	...	...
Business	1.8	2.5	3.5	3.5	3.1	4.1	3.6	1.3	...	...	...	...	...
Memorandum Items:													
Stayover Visitors by Country of Residence (%)													
United States	...	...	...	34.8	31.4	28.8	36.6	33.2	34.5	41.7	42.3	38.7	29.4
Canada	...	...	...	5.8	7.1	6.0	6.1	16.3	18.9	15.9	12.3	16.3	11.9
United Kingdom	...	...	...	7.2	7.8	8.3	7.7	7.1	6.2	6.3	6.9	6.9	5.5
Caricom Countries	...	...	...	15.5	16.3	16.8	15.6	13.6	11.7	11.3	10.6	11.7	9.8
Others b/	...	...	...	36.7	37.4	40.1	33.9	29.8	28.7	24.8	27.9	26.4	...
Yacht & Cruise-ship Calls (no.)	...	...	...	15.0	12.0	22.0	40.0	73.0	63.0	136.0	197.0	198.0	158.0

Hotel Room/Bed Available												
Rooms:	St. Kitts	...	...	374.0	378.0	392.0	385.0	385.0	540.0	608.0	727.0	786.0
	Nevis	...	...	144.0	147.0	149.0	223.0	223.0	221.0	246.0	254.0	450.0
	Total	...	...	518.0	525.0	541.0	608.0	608.0	761.0	854.0	981.0	1236.0
Beds:	St. Kitts	...	...	...	649.0	611.0	682.0	699.0	699.0	911.0	985.0	...
	Nevis	...	...	...	280.0	284.0	288.0	304.0	347.0	442.0	480.0	...
	Total	...	...	...	929.0	895.0	970.0	1003.0	1046.0	1353.0	1465.0	...
Number of Hotels												
	St. Kitts	...	...	9.0	11.0	11.0	11.0	10.0	10.0	11.0	15.0	16.0
	Nevis	...	...	8.0	8.0	8.0	8.0	8.0	10.0	11.0	10.0	11.0
	Total	...	...	17.0	19.0	19.0	19.0	18.0	20.0	22.0	25.0	27.0

a/ Assuming 85 percent of passengers leave ship.
 b/ Mainly Virgin Islands and Netherlands Antilles.

Source: World Bank Document, Economic Memorandum, Oct. 28, 1983, 1985 and 1986.



Hotel Room/Bed Available													
Rooms:	St. Kitts	...	...	374.0	378.0	392.0	385.0	385.0	385.0	540.0	608.0	727.0	786.0
	Nevis	...	...	144.0	147.0	149.0	158.0	223.0	221.0	221.0	246.0	254.0	450.0
	Total	...	...	518.0	525.0	541.0	543.0	608.0	761.0	761.0	854.0	981.0	1236.0
Beeds:	St. Kitts	...	...	...	649.0	611.0	682.0	699.0	699.0	699.0	911.0	985.0	...
	Nevis	...	...	...	280.0	284.0	288.0	304.0	347.0	347.0	442.0	480.0	...
	Total	...	...	...	929.0	895.0	970.0	1003.0	1046.0	1046.0	1353.0	1465.0	...
Number of Hotels													
	St. Kitts	...	...	9.0	11.0	11.0	11.0	10.0	10.0	10.0	11.0	15.0	16.0
	Nevis	...	...	8.0	8.0	8.0	8.0	8.0	10.0	10.0	11.0	10.0	11.0
	Total	...	...	17.0	19.0	19.0	19.0	18.0	20.0	20.0	22.0	25.0	27.0

a/ Assuming 85 percent of passengers leave ship.
 b/ Mainly Virgin Islands and Netherlands Antilles.

Source: World Bank Document, Economic Memorandum, Oct. 28, 1983, 1985 and 1986.



CONT'D

Hotel Rooms/Beds Available												
Rooms:	St. Kitts	...	...	374.0	378.0	392.0	385.0	385.0	540.0	608.0	727.0	786.0
	Nevis	...	...	144.0	147.0	149.0	158.0	223.0	221.0	246.0	254.0	450.0
	Total	...	480.0	518.0	541.0	543.0	608.0	608.0	761.0	854.0	981.0	1236.0
Beds:	St. Kitts	...	...	649.0	611.0	682.0	699.0	699.0	699.0	911.0	985.0	...
	Nevis	...	...	280.0	284.0	288.0	304.0	347.0	347.0	442.0	480.0	...
	Total	...	...	929.0	895.0	970.0	1003.0	1046.0	1046.0	1353.0	1465.0	...
Number of Hotels	St. Kitts	...	9.0	11.0	11.0	11.0	10.0	10.0	10.0	11.0	15.0	16.0
	Nevis	...	8.0	8.0	8.0	8.0	8.0	8.0	10.0	11.0	10.0	11.0
	Total	...	17.0	19.0	19.0	19.0	18.0	18.0	20.0	22.0	25.0	27.0

a/ Assuming 85 percent of passengers leave ship.
 b/ Mainly Virgin Islands and Netherlands Antilles.

Source: World Bank Document, Economic Memorandum, Oct. 28, 1983, 1985 and 1986.



TABLE D2.1

All Holdings* by Parish and Type

Parish	Total Holdings	Holdings with Crops		Holdings with Livestock only	
		Number	Percent	Number	Percent
St. George	454	154	33.9	300	66.1
Trinity	138	34	24.6	104	75.4
St. Thomas	179	122	68.2	57	31.8
St. Anne	254	119	46.9	135	53.1
St. Paul	270	177	65.6	93	34.4
St. John	241	144	59.8	97	40.2
Christ Church	183	115	62.8	68	37.2
St. Mary	235	113	48.1	122	51.9
St. Peter	264	121	45.8	143	54.2
Total: St. Kitts	2218	1099	49.5	1119	50.5
St. Paul	33	27	81.8	6	18.2
St. Thomas	141	117	83.0	24	17.0
St. James	281	278	98.9	3	1.1
St. George	380	376	98.9	4	1.1
St. John	376	376	100.0	0	0.0
Total: Nevis	1211	1174	96.9	37	3.1

* Includes holdings with both livestock and crops.
Source: Agricultural Census of 1986.



TABLE D1.8

Summary of External Public Debt Operations, 1977-1989
(ECS Millions)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Outstanding Debt at End of Period	14.04	13.77	18.90	28.35	32.13	33.75	36.72	44.55	51.57	52.11	63.72	79.92	89.91
Debt Service Payments	1.89	1.89	2.43	1.35	1.35	2.16	1.89	2.97	4.05	12.96	4.59	4.86	5.40
Amortisation	1.62	1.35	1.62	0.81	0.81	0.81	0.81	1.89	1.62	10.26	2.43	2.43	2.70
Interest	0.27	0.54	0.81	0.54	0.54	1.35	1.08	1.08	2.43	2.70	2.16	2.43	2.70
Debt Outstanding/GDP (%)	58.05	49.14	63.99	57.78	55.35	56.70	60.48	50.36	47.5	48.07	54.74	64.14	68.69
Debt Service/GDP (%)	7.83	6.75	8.10	2.70	2.70	2.70	3.24	3.36	3.73	11.96	3.94	3.9	4.13
Debt Service/ Export of Goods & NFS (%)	9.99	8.64	10.26	2.97	2.70	3.78	4.32	7.83	9.45	24.57	7.83	2.43	2.57

Sources: (1) World Bank Document, St. Kitts & Nevis Economic Memorandum, 1983, 1985 and 1986.
(2) Caribbean Development Bank, Annual Economic Report, 1988 and 1989.



TABLE D1.9

Central Government Operations, 1978-1989
(ECS Millions)

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
1. Current Revenues	34.6	40.1	50.9	55.1	49.0	49.4	50.5	49.1	59.2	71.0	79.0	90.2
2. Current Expenditure	30.7	36.2	44.9	56.8	58.5	58.0	54.1	56.6	58.3	66.6	75.0	81.0
3. Current Balance (1-2)	3.9	3.9	6.0	-1.7	-9.5	-8.6	-3.6	-7.5	0.9	4.4	4.0	9.2
4. Capital Expenditure (net)	8.5	14.0	29.1	11.1	10.5	11.3	...	...	...	...	...	...
5. Overall Balance (3-4)	-4.6	-10.1	-23.1	-12.8	-20.0	-19.9	...	...	...	...	...	...
6. Financing	4.6	10.1	23.1	12.8	20.0	19.9	...	...	...	...	...	...
External Grants	...	...	13.0	4.3	5.7	5.7	...	...	...	...	...	...
External Borrowing	...	...	10.6	1.4	3.1	2.5	...	...	...	...	...	...
Change in foreign Assets	...	...	4.5	-0.2	1.8	-0.2	...	...	...	...	...	...
Domestic Borrowing	...	...	-5.0	7.2	9.3	11.8	...	...	...	...	...	...
Memo Items (%)												
Current Revenue/GDP	45.2	45.6	38.0	35.0	30.2	29.5	31.7	28.6	27.8	29.6	28.4	29.8
Current Expenditure/GDP	40.1	41.2	33.5	36.0	36.0	34.6	34.0	33.0	27.3	27.8	27.0	26.8
Current Balance/GDP	5.1	4.4	4.5	-1.0	-5.8	-5.1	-2.3	-4.4	0.4	1.8	1.4	3.0
Capital Expenditure/GDP	11.1	15.9	21.7	7.0	6.4	6.7	...	...	...	...	...	...
Overall Balance/GDP	-6.0	-11.5	-17.2	-8.0	-12.2	-11.8	...	...	...	...	...	...

a/ Government operations refer to operations of the Central Government until September 18, 1983 and to the combined operations of the Gov't of the Federation of St Kitts & Nevis and the Nevis Island Administration thereafter. Public Utilities are included as departmental operations in the budgetary accounts (1980-1983).

Sources: (1) World Bank Document, St. Kitts & Nevis Economic Memorandum, Oct. 28, 1983 and 1985.
(2) Eastern Caribbean Central Bank Economic and Financial Review, 1989.



TABLE D1.10

St. Kitts & Nevis
Balance of Payments, 1978-1989*
(EC\$ Million)

	1978	1979	1980	1981	1982	1983	1984	1986	1987	1988	1989
1. Exports of Goods & NFS	58.6	64.3	87.2	104.8	92.3	85.6	104.0	183.3	204.1	200.1	210.3
2. Imports of Goods & NFS	68.6	90.2	124.7	147.4	143.1	155.5	160.9	403.4	510.0	594.8	653.7
3. Resource Balance (1-2)	-10.0	-25.9	-37.5	-42.6	-50.8	-69.9	-56.9	-220.1	-305.9	-394.7	-443.4
4. Transfers (net)	16.2	20.0	17.6	23.5	23.8	20.5	25.7	91.5	106.9	114.8	92.9
5. Net Factor Income	-3.5	-3.5	0.5	2.4	1.9	2.7	0.3	93.0	125.3	122.9	157.7
6. Current Acc't Bal. (3+4+5)	2.7	-9.4	-19.4	-16.7	-25.1	-46.7	-30.9	-35.6	-73.7	-157.0	-192.8
7. Public Capital	5.9	10.5	23.5	8.1	7.6	10.3	9.7	-11.3	33.8	44.8	32.7
8. Banking System				9.5	3.5	0.3	-4.3				
9. Private Investment & Errors and Omissions	-7.8	-0.8	-8.4	13.5	10.0	37.5	27.3	64.0	41.6	88.0	104.4
Memo Items (%)											
Resource Balance/GDP	28.2	25.7	25.2	41.2	21.2	51.2	35.7	103.2	127.6	141.8	146.7
Current Acc't Balance/GDP	14.6	9.0	11.4	29.0	9.7	34.2	19.4	16.7	30.7	56.4	63.8

* 1985 missing.

Sources: (1) World Bank Document, St. Kitts & Nevis Economic Memorandum, Oct. 28, 1983, 1985 and 1986.
(2) ECCB Economic and Financial Review, various issues.



TABLE D1.11

Resource Gap and Indicators of Openess of the Economy, 1978-1988

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
1. Exports of Goods & NFS	58.6	64.3	87.2	104.8	92.3	85.6	104.0	183.3	204.1	200.1	210.3
2. Imports of Goods & NFS	68.6	90.2	124.7	147.4	143.1	155.5	160.9	403.3	510.0	594.8	653.7
3. Resource Gap (1-2)	-10.0	-25.9	-37.5	-42.6	-50.8	-69.9	-56.9	-220.0	-305.9	-394.7	-443.4
4. Sugar Export Earnings	31.8	30.5	38.9	38.9	33.4	27.8	31.3	23.5	31.6	33.7	31.5
5. GDP at Current	76.52	87.86	103.46	121.44	138.74	136.44	159.32	171.76	213.18	239.81	278.26
6. (1+2)/5	1.662	1.758	2.048	2.077	1.697	1.767	1.663	3.415	3.350	3.315	3.105
7. (4/5)	0.415	0.347	0.376	0.320	0.241	0.204	0.197	0.137	0.148	0.140	0.113

Source: ECCB Economic and Financial Review, various issues.

TABLE D1.12

Budgetary Estimates, 1974-1988
(ECS'000)

	Approved Estimates	Revised Estimates	Actual
1974			
Recurrent Revenue	16232.3	20472.3	19959.8
Recurrent Expenditure	24713.9	16232.3	18418.9
Capital Expenditure	15058.4	8876.5	7698.8
1975			
Recurrent Revenue	17961.6	21988.4	22065.2
Recurrent Expenditure	24713.9	24150.9	21943.7
Capital Expenditure	12255.0	1572.1	4259.3
1976			
Recurrent Revenue	21027.5	23035.7	29374.2
Recurrent Expenditure	28656.2	29191.0	30373.3
Capital Expenditure	22803.5	6496.9	5577.7
1977			
Recurrent Revenue	23569.3	24453.2	27650.4
Recurrent Expenditure	29740.7	29099.6	28574.9
Capital Expenditure	25255.7	5998.6	4234.7
1978			
Recurrent Revenue	26678.0	31893.2	34602.1
Recurrent Expenditure	29732.4	32779.1	32490.9
Capital Expenditure	31057.1	7862.9	7862.9
1979			
Recurrent Revenue	31281.8	40086.8	40336.8
Recurrent Expenditure	36389.2	37692.7	38430.0
Capital Expenditure	45351.9	13958.5	12672.7
1980			
Recurrent Revenue	47053.9	58515.9	55752.3
Recurrent Expenditure	46987.4	48681.4	48137.5
Capital Expenditure	49143.9	21380.9	21918.0
1981			
Recurrent Revenue	46797.8	54549.1	55362.8
Recurrent Expenditure	46344.8	56667.6	58650.1
Capital Expenditure	58246.8	18712.6	10623.7

1982	Recurrent Revenue	53404.5	51672.5	51097.7
	Recurrent Expenditure	60506.7	63959.1	62606.6
	Capital Expenditure	110867.6	10613.0	10875.8
1983	Recurrent Revenue			47955.9
	Recurrent Expenditure			56608.6
	Capital Expenditure			13311.4
1984	Recurrent Revenue			50553.9
	Recurrent Expenditure			54112.4
	Capital Expenditure			9515.8
1985	Recurrent Revenue			49117.8
	Recurrent Expenditure			57706.2
	Capital Expenditure			16020.5
1986	Recurrent Revenue			62294.9
	Recurrent Expenditure			58854.2
	Capital Expenditure			16208.7
1987	Recurrent Revenue			73020.2
	Recurrent Expenditure			69518.5
	Capital Expenditure			69871.6
1988	Recurrent Revenue			80550.2
	Recurrent Expenditure			78008.6
	Capital Expenditure			42829.3

Source: Budgetary Estimates for St. Kitts & Nevis, various issues.

1982	Recurrent Revenue	53404.5	51672.5	51097.7
	Recurrent Expenditure	60506.7	63959.1	62606.6
	Capital Expenditure	110867.6	10613.0	10875.8
1983	Recurrent Revenue			47955.9
	Recurrent Expenditure			56608.6
	Capital Expenditure			13311.4
1984	Recurrent Revenue			50553.9
	Recurrent Expenditure			54112.4
	Capital Expenditure			9515.8
1985	Recurrent Revenue			49117.8
	Recurrent Expenditure			57706.2
	Capital Expenditure			16020.5
1986	Recurrent Revenue			62294.9
	Recurrent Expenditure			58854.2
	Capital Expenditure			16208.7
1987	Recurrent Revenue			73020.2
	Recurrent Expenditure			69518.5
	Capital Expenditure			69871.6
1988	Recurrent Revenue			80550.2
	Recurrent Expenditure			78008.6
	Capital Expenditure			42829.3

Source: Budgetary Estimates for St. Kitts & Nevis, various issues.

TABLE D2.2

All Agricultural Holdings* by Parish and Type of Tenure

Parish	Total		Owned		For Money		Rented/Leased		For Produce		Operate for Free		Other Forms	
	No.	Hectare	No.	Hectare	No.	Hectare	No.	Hectare	No.	Hectare	No.	Hectare	No.	Hectare
St. George	161	660.10	107	286.9	29	12.7	4	0.3	8	112.4	13	5.1	7	242.7
Trinity	37	795.73	17	777.9	8	1.7	0	0.0	1	0.2	11	3.9	1	12.0
St. Thomas	157	402.47	45	301.1	42	16.9	1	0.1	0	0.0	71	27.2	4	57.2
St. Anne	143	539.27	50	475.7	16	25.2	2	0.3	3	1.5	71	33.8	5	2.9
St. Paul	210	1347.61	25	990.6	86	81.5	0	0.0	2	0.5	95	43.3	4	231.7
St. John	188	406.74	68	339.2	95	56.7	6	4.0	1	0.0	20	6.8	0	0.0
Christ Church	167	267.41	48	232.2	3	0.5	5	0.6	2	0.8	110	32.9	2	0.3
St. Mary	149	1493.05	97	1474.0	3	1.8	2	0.9	3	0.1	45	13.8	3	2.5
St. Peter	137	512.05	34	456.3	10	19.6	9	3.6	2	0.5	83	31.7	2	0.3
Total: St. Kitts	1349	6424.43	491	5333.91	292	216.67	29	9.792	22	115.954	519	198.5072	28	549.6
St. Paul	27	6.96	26	6.7	1	0.0	0	0.0	0	0.0	0	0.0	2	0.2
St. Thomas	143	213.03	95	188.2	31	17.1	2	0.2	2	0.8	13	5.0	10	1.7
St. James	399	775.04	279	642.9	108	47.4	5	5.1	4	49.1	14	12.4	3	18.2
St. George	730	693.59	411	494.9	259	162.8	6	1.5	6	1.2	56	32.3	4	1.0
St. John	547	673.67	390	525.2	98	63.0	4	2.0	7	3.7	26	10.2	25	69.6
Total: Nevis	1846	2362.29	1201	1858.0	497	290.3	17	8.7	19	54.8	109	59.9	44	90.6

* Excludes "landless" holdings.
Source: Agricultural Census of 1986.



TABLE D2.3

Private Agricultural Households by Parish and Number of Persons per Household

Parish	Total Holdings	Total Population	Distribution of Agricultural Household by Number of Persons										
			1	2	3	4	5	6	7	8	9	10+	Stated
St. George	452	1901	67	79	69	53	62	37	23	20	15	23	4
Trinity	136	659	20	14	13	18	21	13	12	8	5	11	1
St. Thomas	178	681	42	30	24	14	20	11	12	10	6	6	3
St. Anne	249	1064	52	32	22	36	34	20	22	12	6	12	1
St. Paul	266	1305	54	22	23	27	28	27	28	20	8	25	4
St. John	239	1047	41	38	40	25	23	20	14	15	5	18	0
Christ Church	182	791	29	25	28	19	18	20	14	11	6	9	3
St. Mary	232	1127	37	38	21	24	23	22	20	9	11	24	3
St. Peter	261	1184	39	43	27	35	26	34	23	13	5	15	1
Total: St. Kitts	2195	9759	381	321	267	251	255	204	168	118	67	143	20
St. Paul	33	107	10	5	6	3	2	3	3	1	0	0	0
St. Thomas	141	574	24	24	16	19	17	13	8	4	5	8	3
St. James	278	1035	59	44	39	40	35	25	17	5	4	8	2
St. George	379	1438	75	79	51	42	45	26	17	18	4	18	4
St. John	376	1443	67	79	48	52	37	36	29	13	5	9	1
Total: Nevis	1207	4597	235	231	160	156	136	103	74	41	18	43	10

Source: Agricultural Census of 1986.



TABLE D2.4

Sugar Production, 1970-1989

Years	Cane Ground 000 Ton	Sugar Made 000 Ton	Yield (Cane/ Sugar)	Ave. Tons Cane Per Ha (reaped)		Ha		Mean Rainfall (mm)	Ave. Sugar Price Per Tons Exp. US\$	Sugar		Molasses	
				Cane	Sugar	Harvested	Cultivated			000 Tons	0000SUS*	000 L	0000SUS*
1970	326	27	12.00	83.98	6.92	3,882	4,995.0	2,025	130	22	2,836	7,570	231
1971	272	25	10.70	69.16	6.42	3,905	4,725.0	1,175	138	18	2,480	6,057	181
1972	243	27	9.20	56.81	6.18	4,216	4,324.0	1,350	155	24	3,720	3,762	124
1973	211	24	8.80	59.28	6.92	3,442	3,877.0	1,025	150	20	2,996	4,906	362
1974	217	26	8.30	59.28	7.16	3,590	3,566.0	1,225	265	23	6,100	904	132
1975	216	25	8.60	81.51	9.14	3,410	3,695.0	1,250	574	22	12,627	6,247	526
1976	321	36	9.00	76.57	9.14	3,920	4,302.0	1,350	329	31	10,205	3,792	256
1977	359	41	8.64	80.56	9.32	4,456	4,800.0	1,125	247	38	9,367	5,624	356
1978	349	40	9.27	84.34	9.09	4,373	4,800.0	1,425	318	37	11,762	6,281	161
1979	392	40	9.68	103.70	10.71	3,781	4,507.6	2,000	305	37	11,304	5,366	324
1980	358	35	10.12	85.82	8.48	4,178	4,716.0	1,100	450	32	14,398	6,920	470
1981	344	33	10.43	85.83	8.23	4,011	4,074.8	1,725	475	30	14,399	n.a.	499
1982	356	37	9.72	89.61	9.22	3,979	4,126.0	n.a.	364	34	12,364	n.a.	328
1983	282	28	9.95	69.34	6.97	4,064	4,272.0	n.a.	n.a.	n.a.	10,300	n.a.	n.a.
1984	304	31	9.64	73.43	7.62	4,144	4,687.2				11,600		
1985	268	27	9.79	66.05	6.74	4,063	4,571.2				8,700		
1986	265	29	9.14	68.77	7.53	3,862	4,441.6				11,700		
1987	264	26	10.24	80.22	7.83	3,289	4,420.0		550	23	12,478		
1988	276	26	10.61	91.16	8.59	3,030	4,200.0		503	23	11,685		
1989	257	25	10.19	86.94	8.54	3,605	4,258.7		534	22	11,863		
1990	172	16				3,329	4,209.1						

Sources: (1) National Agricultural Corporation of St. Kitts and Nevis.
(2) St. Kitts & Nevis Agricultural Sector.

* From 1965 to July 1976 the East C'ibbean dollar was tied to the pound sterling at the rate of L1.00 = EC\$4.8. In July 1976 the link with sterling was broken and the East caribbean dollar was aligned with the U.S. dollar at US1.00 = EC\$2.70. In 1970 1L = US\$2.44, in 1971 1L = US\$2.44; in 1972 1L = US\$2.50; in 1973 1L = US\$2.34; in 1975 1L = US\$2.02; and in 1976 1L = US\$1.70.







TABLE D2.6

Faragate Prices of Domestic Agricultural Commodities, 1977-1988
(ECS/KG)*

Commodity	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Asparagus	0.44	0.44	0.56	0.56	0.67	0.67	0.78	1.11	1.11	1.11	1.11	11.11
Avocado	0.67	0.67	0.78	0.78	0.89	0.89	0.56	1.56	1.56	1.33	1.33	1.33
Banana	2.11	2.11	2.22	2.44	2.44	2.56	2.22	0.89	0.89	1.33	1.33	2.22
Beet	0.44	0.44	0.56	0.56	0.56	0.56	0.56	0.29	4.44	5.56	5.56	5.56
Breadfruit	2.67	2.67	2.78	2.89	3.11	3.33	3.33	3.89	0.29	3.33	3.33	3.33
Cabbage	1.00	1.00	1.11	1.22	1.22	1.33	1.67	1.56	1.11	4.44	4.44	6.67
Cantaloupe	2.11	2.11	2.22	2.44	2.44	2.56	3.33	3.33	2.67	3.33	3.33	4.44
Carrots	1.00	1.00	1.11	1.11	1.22	1.33	0.56	0.56	0.56	4.44	4.44	6.67
Cassava	1.44	1.44	1.56	1.67	1.67	1.78	1.11	1.67	2.78	0.56	0.56	1.11
Cauliflower	6.11	6.11	6.67	7.22	7.56	7.78	7.22	8.89	2.78	6.67	6.67	11.11
Celery	2.11	2.11	2.22	2.22	2.44	2.56	2.22	5.56	3.33	6.67	6.67	6.67
Christophens	1.44	1.44	1.56	1.67	1.67	1.78	1.11	1.67	1.67	5.56	5.56	5.56
Cocoa	6.11	6.11	6.67	7.22	7.56	7.78	7.22	8.89	4.44	4.44	4.44	4.44
Coffee	2.11	2.11	2.22	2.22	2.44	2.56	2.22	0.60	0.70	0.60	0.60	0.60
Copra (tons)	1.22	1.22	1.33	1.44	1.44	1.56	1.11	1.78	1.11	2.22	2.22	2.22
Corn	0.40	0.40	0.45	0.45	0.50	0.50	0.40	0.40	0.45	5.56	5.56	5.56
Cotton	1.22	1.22	1.33	1.44	1.44	1.56	1.33	1.78	1.56	2.22	2.22	4.44
Cucumber	0.44	0.44	0.56	0.56	0.67	0.67	0.56	2.18	2.18	2.44	2.44	5.56
Dashen	1.22	1.22	1.33	1.44	1.44	1.67	1.11	2.22	0.56	0.44	0.44	0.56
Dried Coconut	1.00	1.00	1.11	1.11	1.22	1.33	1.11	1.33	2.36	3.00	3.00	4.44
Eddoes	7.11	7.11	7.22	7.78	8.00	8.33	7.78	8.33	4.44	4.44	4.44	6.67
Eggplant	0.40	0.40	0.45	0.45	0.50	0.50	0.40	0.40	0.45	13.33	13.33	13.33
Ginger	1.00	1.00	1.11	1.11	1.22	1.33	0.22	3.33	3.67	0.50	0.50	1.00
Grapefruit (No)	1.00	1.00	1.11	1.11	1.22	1.33	0.22	5.56	5.56	3.33	3.33	3.33
Herbs	1.00	1.00	1.11	1.11	1.22	1.33	0.22	0.50	0.55	3.89	3.89	2.78
Hot Pepper	1.00	1.00	1.11	1.11	1.22	1.33	2.22	2.22	2.22	1.00	1.00	1.00
Lettuce (heads)	0.20	0.20	0.25	0.25	0.25	0.30	2.05	0.21	0.35/0.15	4.00/2.00	4.00/2.00	3.50/1.00
Limes	1.56	1.56	1.67	1.67	1.78	1.89	1.67	13.33	11.11	11.11	11.11	11.11
Mango (No)	2.11	2.11	2.22	2.33	2.44	2.56	2.78	1.67	1.78	2.22	2.22	2.22
Mint Leaves	4.22	4.22	4.44	4.67	4.89	5.11	8.89	2.22	1.78	2.22	2.22	2.78
Okra	0.44	0.44	0.56	0.56	0.67	0.67	1.78	0.67	8.89	10.00	10.00	11.11
Onion	5.00	5.00	5.11	5.33	5.67	6.00	6.67	5.56	2.78	2.22	2.22	2.22
Parsley	1.67	1.67	1.78	1.89	1.89	2.00	2.00	1.78	4.11	7.78	7.78	7.78
Peas	1.89	1.89	2.00	2.22	2.22	2.44	2.22	2.51	1.78	5.56	5.56	5.56
Peanut	1.89	1.89	2.00	2.22	2.22	2.44	2.78	2.78	2.44	5.56	5.56	5.56
Pigeon Peas	1.00	1.00	1.11	1.11	1.22	1.33	2.22	0.89	2.44	2.89	2.89	2.89
Other Peas & Beans	1.00	1.00	1.11	1.11	1.22	1.33	2.22	0.89	1.78	4.44	4.44	5.56
Pineapple	1.00	1.00	1.11	1.11	1.22	1.33	2.22	0.89	2.44	2.89	2.89	2.89
Plantain	1.00	1.00	1.11	1.11	1.22	1.33	2.22	0.89	1.78	4.44	4.44	5.56



Pumpkin	1.44	1.44	1.56	1.67	1.78	1.56	1.67	3.33
Seven Year				11.11			8.89	11.11
String Beans							3.11	5.56
Sweet Oranges (No)	0.35	0.35	0.40	0.45	0.50	0.40	0.50	1.00
Sweet Pepper	4.22	4.22	4.44	4.67	4.89	5.11	3.56	6.67
Sweet Potato	0.44	0.44	0.56	0.56	0.67	0.67	1.00	2.78
Squash	1.44	1.44	1.56	1.56	1.67	1.78	2.78	3.33
Tannias	1.22	1.22	1.33	1.33	1.44	1.56	2.44	5.56
Thyme	1.44	1.44	1.67	1.78	1.89	4.44	7.22	7.78
Tomatoes	3.22	3.22	3.33	3.56	3.67	3.89	4.44	6.67
Watermelon	1.00	1.00	1.11	1.11	1.22	1.33	1.67	3.33
Water Nuts (No)							0.50	0.50
White Potato	1.56	1.56	1.67	1.67	1.78	1.89	1.91	2.22
Yam							2.22	4.44

* means unless otherwise stated.

Source: Budget Estimates for St. Kitts & Nevis, various issues.



