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(IICA)

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G R E N A D A

Appraisal of the Agricultural Sector for  
Policy and Project Identification

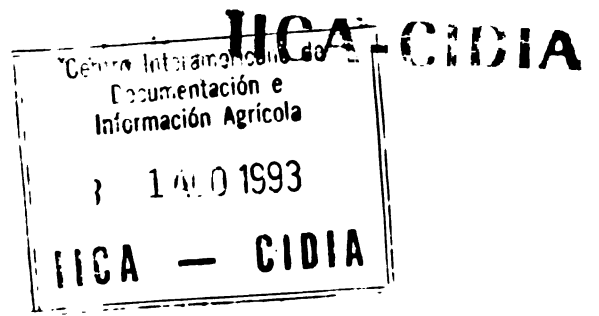
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VOLUME II

ANNEXES

August 1988





A N N E X I

TABLES FOR CHAPTER I

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TABLE 1.1.1  
COMPOSITION OF GDP BY SECTOR  
(Current prices E.C. \$M)

SECTOR	1980	1981	1982	1983	1984	1985	1986
CROPS	36.3	39.6	34.5	34.3	35.7	36.5	42.4
LIVESTOCK	1.8	2.1	2.2	2.3	2.2	2.5	2.6
FISHING	3.3	3.1	4.0	4.6	5.9	5.1	5.7
FORESTRY	0.0	0.0	0.0	0.1	0.1	0.1	0.2
MINING & QUARRYING	0.5	0.6	0.6	0.6	0.5	0.8	1.0
ELECTRICITY & WATER	3.4	3.1	4.4	4.4	4.0	6.4	7.5
MANUFACTURING	6.6	8.7	10.2	10.5	9.8	12.5	13.3
CONSTRUCTION	11.3	17.3	20.3	17.3	18.4	19.4	23.4
WHOLESALE & RETAIL TRADE	26.7	22.1	28.4	27.3	29.3	33.5	37.2
HOTEL & RESTAURANTS	6.8	8.1	8.4	9.2	11.7	15.3	18.8
TRANSPORT & COMMUNICATION	21.5	22.5	25.4	27.4	30.1	31.5	38.5
BANKING & INSURANCE	7.6	9.5	10.4	10.4	11.8	13.9	15.0
REAL ESTATE & HOUSING	12.2	12.3	12.9	12.9	15.7	17.5	18.7
GOVERNMENT SERVICES	27.1	30.7	33.9	41.9	46.6	51.5	56.7
OTHER SERVICES	8.5	9.0	9.7	10.2	10.6	11.0	11.5
TOTAL	173.6	188.7	205.3	213.4	232.4	257.5	292.5
-----PERCENTAGE-----							
CROPS	20.9%	21.0%	16.8%	16.1%	15.4%	14.2%	14.5%
LIVESTOCK	1.0%	1.1%	1.1%	1.1%	0.9%	1.0%	0.9%
FISHING	1.9%	1.6%	1.9%	2.2%	2.5%	2.0%	1.9%
FORESTRY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
MINING & QUARRYING	0.3%	0.3%	0.3%	0.3%	0.2%	0.3%	0.3%
ELECTRICITY & WATER	2.0%	1.6%	2.1%	2.1%	1.7%	2.5%	2.6%
MANUFACTURING	3.8%	4.6%	5.0%	4.9%	4.2%	4.9%	4.5%
CONSTRUCTION	6.5%	9.2%	9.9%	8.1%	7.9%	7.5%	8.0%
WHOLESALE & RETAIL TRADE	15.4%	11.7%	13.8%	12.8%	12.6%	13.0%	12.7%
HOTEL & RESTAURANTS	3.9%	4.3%	4.1%	4.3%	5.0%	5.9%	6.4%
TRANSPORT & COMMUNICATION	12.4%	11.9%	12.4%	12.8%	13.0%	12.2%	13.2%
BANKING & INSURANCE	4.4%	5.0%	5.1%	4.9%	5.1%	5.4%	5.1%
REAL ESTATE & HOUSING	7.0%	6.5%	6.3%	6.0%	6.8%	6.8%	6.4%
GOVERNMENT SERVICES	15.6%	16.3%	16.5%	19.6%	20.1%	20.0%	19.4%
OTHER SERVICES	4.9%	4.8%	4.7%	4.8%	4.6%	4.3%	3.9%

SOURCE: National Accounts - Central Bank or Central (National) Statistics Unit

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

GRENADA  
TABLE 1.1.2  
UNEMPLOYMENT BY AGE GROUP AND GENDER

AGE GROUP	LABOUR FORCE			UNEMPLOYED			UNEMPLOYMENT RATE		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
15 - 24	517	502	1019	228	300	528	44.1	59.8	51.8
25 - 34	457	370	827	103	116	219	22.5	31.4	26.5
35 - 44	215	176	391	25	42	67	11.6	23.9	17.1
45 - 54	182	124	306	10	12	22	5.5	9.7	7.2
55 - 64	111	61	172	10	9	19	9	14.8	11
Over 65	63	23	86	4	4	8	6.3	17.4	9.3
TOTAL	1545	1256	2801	380	483	863	24.6	38.5	30.8

BASED ON SAMPLE OF 21 E.D.'S AND A 76.8% RESPONSE RATE





GRENADA  
TABLE 1.1.3  
BALANCE OF VISIBLE TRADE (E.C.\$'000)

YEAR	EXPORTS			IMPORTS	BALANCE OF VISIBLE TRADE
	DOMESTIC	FOREIGN	TOTAL		
1976	32871.9	948.4	33820.2	66249.6	-32429.4
1977	36900.5	1853.4	38753.9	87285.2	-48531.3
1978	44340.1	1244.3	45584.5	96452.2	-50867.7
1979	55696.8	2101.8	57798.6	117978.7	-60180.1
1980	45509.9	1436.3	46946.2	135574.1	-88627.9
1981	50275.2	1081.1	51356.4	146709.8	-95353.4
1982	47748.1	2338.7	50086.8	152429.2	-102342.4
1983	50711.4	1076.3	51787.7	154479.2	-102691.5
1984	47858.2	1256	49114.2	151904	-102789.8
1985	59000.2	1332.4	60332.6	186997.1	-126664.5
1986	N/A	N/A	78402.7	225483.9	-147081.2
1987*	N/A	N/A	44130.1	105962.5	-61832.4

SOURCE: CENTRAL STAT. OFFICE

N.B. \* (JAN-JUNE) 1987



GRENADA  
 TABLE 1.1.4  
 ESTIMATED OPENNESS OF THE ECONOMY  
 (IN E.C.\$ M)

YEAR	IMPORTS	EXPORTS	IMPORTS	FOREIGN TRADE	
			+ EXPORTS	GDP	GDP
1980	135.6	46.9	182.5	173.6	1.05
1981	146.7	51.4	198.1	188.7	1.05
1982	152.4	50.1	202.5	205.3	0.99
1983	154.5	51.9	206.4	213.4	0.97
1984	151.9	49.1	201.0	232.4	0.86
1985	186.9	60.3	247.2	257.5	0.96
1986	225.5	78.4	303.9	292.5	1.04

SOURCE: OWN ESTIMATES

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GRENADA  
TABLE 1.1.5  
DISTRIBUTION OF LOANS AND ADVANCES BY SECTOR  
(THOUSAND E.C.\$)

SECTOR	DEC						
	1980	1981	1982	1983	1984	1985	1986
AGRICULTURE	2593	4928	3709	2904	3069	2227	4208
FISHERIES	283	441	373	315	619	2005	1731
MANUFACTURING	6524	7295	5811	5491	7944	9993	13310
DISTRIBUTION	22115	19821	26257	27493	24034	31455	36855
TOURISM	4654	6131	7153	6363	9594	8974	13941
ENTERTAINMENT & CATERING	1464	849	902	1699	1866	1312	1640
TRANSPORT	5079	7091	5512	6987	9040	14020	12589
CONSTRUCTION	4923	6135	5256	9312	5348	10100	9186
GOVERNMENT & STATUTORY BODIES	7146	9149	13274	14989	9760	12723	20911
PERSONAL	17685	16253	19365	16979	20487	30360	51563
OTHER	10193	7826	8639	5113	9077	8010	9533
<b>TOTAL</b>	<b>82659</b>	<b>85919</b>	<b>96251</b>	<b>97645</b>	<b>100838</b>	<b>131179</b>	<b>175467</b>
	-----PERCENTAGE-----						
AGRICULTURE	3.14	5.74	3.85	2.97	3.04	1.70	2.40
FISHERIES	0.34	0.51	0.39	0.32	0.61	1.53	0.99
MANUFACTURING	7.89	8.49	6.04	5.62	7.88	7.62	7.59
DISTRIBUTION	26.75	23.07	27.28	28.16	23.83	23.98	21.00
TOURISM	5.63	7.14	7.43	6.52	9.51	6.84	7.95
ENTERTAINMENT & CATERING	1.77	0.99	0.94	1.74	1.85	1.00	0.93
TRANSPORT	6.14	8.25	5.73	7.16	8.96	10.69	7.17
CONSTRUCTION	5.96	7.14	5.46	9.54	5.30	7.70	5.24
GOVERNMENT & STATUTORY BODIES	8.65	10.65	13.79	15.35	9.68	9.70	11.92
PERSONAL	21.40	18.92	20.12	17.39	20.32	23.14	29.39
OTHER	12.33	9.11	8.98	5.24	9.00	6.11	5.43
<b>TOTAL</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

SOURCE: EASTERN CARIBBEAN CENTRAL BANK, QUARTERLY COMMERCIAL BANKING STATISTICS, JUNE 1987.



GRENADA  
TABLE 1.1.6  
SUMMARY OF EXTERNAL PUBLIC DEBT OPERATIONS\*

	1980	1981	1982	1983	1984	1985
TOTAL OUTSTANDING DEBT AT END OF PERIOD	14381	26242	33744	48350	48365	49623
Outstanding debt due to IMF (end of period)	2824	8264	6924	7667	6217	4404
Purchases	666	5907	0	1203	0	0
Repurchases (-)	-680	-146	-908	-84	-1020	-2378
Valuation adjustment	-951	-321	-432	-376	-430	565
Outstanding debt excl. IMF (end of period)	11557	17978	26820	40683	42148	45220
Drawings	1758	8139	10124	15235	7295	4679
Amortization (-)	-476	-686	-597	-572	-2117	-4115
Valuation adjustment	-8	-1032	-685	-800	-3713	2508
DEBT SERVICE PAYMENTS	1627	1467	2409	2642	7226	10466
Amortization	1156	832	1505	656	3137	6493
IMF	680	146	908	84	1020	2378
Other	476	686	597	572	2117	4115
Interest	471	635	904	1211	2217	1074
IMF	111	250	485	431	500	338
Other	360	385	419	780	1717	736
Overdue obligations	0	0	0	775	1872	2899
Amortization	0	0	0	550	1743	2704
Interest	0	0	0	225	129	195
Total debt outstanding/GDP	22.9	35.3	42.2	58.8	53.9	51.5
Debt outstanding/GDP **	18.4	24.2	33.5	49.4	47	46.9
Net drawings/GDP	2	17.8	10.8	19.2	4.6	-1.9
Debt service/GDP	2.6	2	3	3.2	8.1	10.9
Debt service obligations/ Exports, GNFS	4.1	3.7	6.3	6.8	17.9	20.3

\* Includes IMF and government guaran

\*\* Excluding IMF

SOURCE: World Bank, Country Appraisal





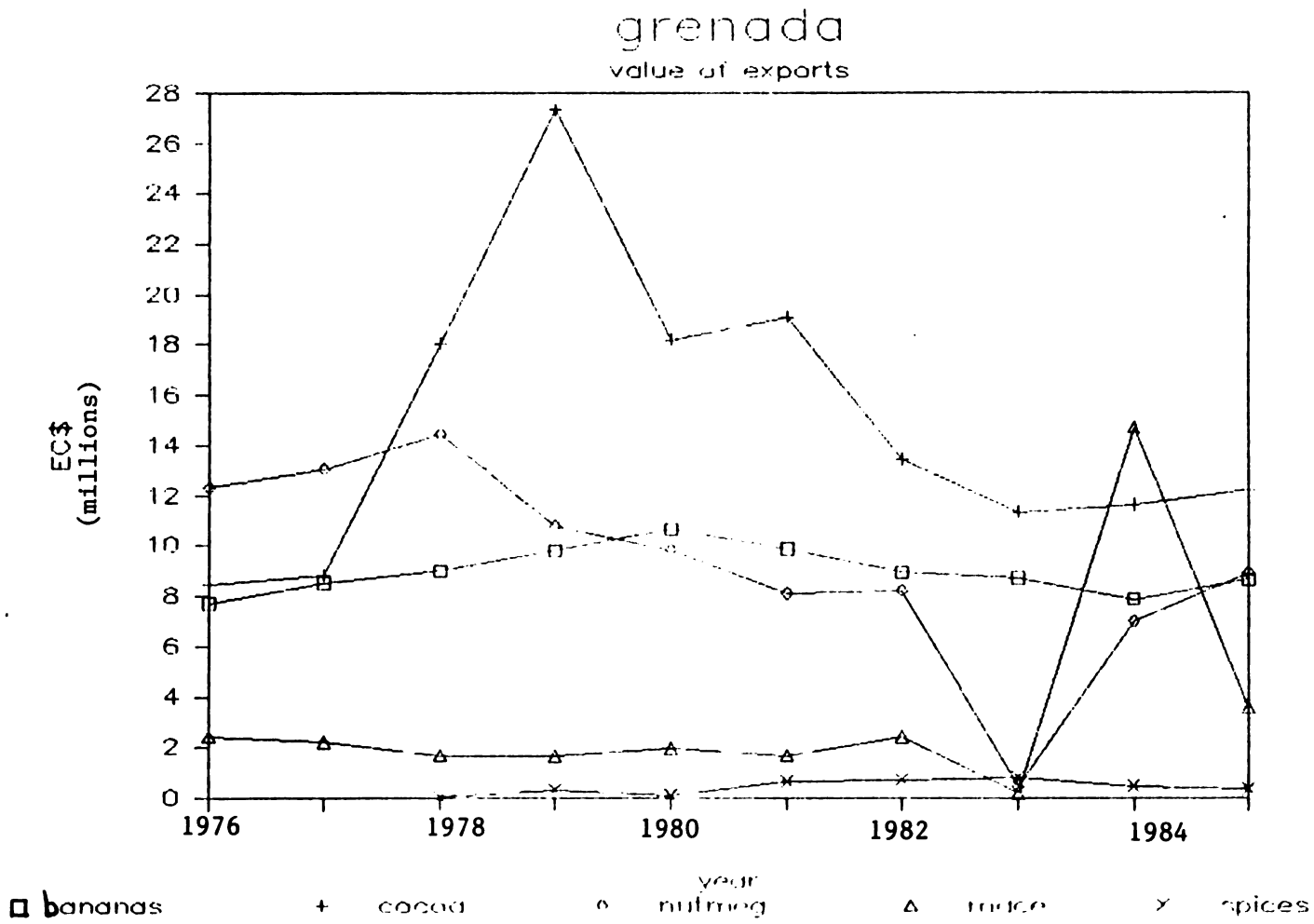
GRENADA  
TABLE 1.1.7  
SUMMARY OPERATIONS OF THE PUBLIC SECTOR  
(EC\$ million)

	1981	1982	1983	1984	1985
<b>I. CONSOLIDATED PUBLIC SECTOR</b>					
Current revenue	63.9	79.6	91.7	123.7	128.5
o.w. budgetary grants	0.9	2.6	3.2	28.6	19.5
Current expenditure	64.4	71.6	74.6	86.8	99.4
Current account balance	-0.5	8.0	17.1	36.9	29.1
Capital expenditure	74.4	106.4	94.6	67.4	83.1
Overall surplus/deficit (-)	-74.9	-98.4	-77.5	-30.5	-53.9
Financing	74.9	98.4	77.5	30.5	53.9
External grants	34.0	42.4	31.4	40.1	61.6
External (net)	39.0	21.9	40.0	8.2	-5.9
Domestic (net)	2.3	33.7	7.0	-17.0	-5.4
Others (net)	-0.4	0.4	-0.9	-0.8	3.7
<b>II. CENTRAL GOVERNMENT</b>					
Current revenue	63.9	77.0	84.5	116.0	119.9
o.w. budgetary grants	0.9	2.6	3.2	28.6	19.5
Current expenditure	64.4	71.6	74.4	86.3	98.6
Current account balance	-0.5	5.4	10.1	29.7	21.3
Cap. expenditure & net lending	74.8	103.6	92.2	67.9	80.0
o.w.: Fixed capital formation	69.2	95.0	81.7	58.3	72.6
Transfers to rest of public sector	5.6	8.6	10.5	9.6	7.4
Overall surplus/deficit (-)	-75.3	-98.2	-82.1	-38.2	-58.7
Financing	75.3	98.2	82.1	38.2	58.7
External grants	34.0	42.4	31.4	40.1	61.6
External (net)	39.0	21.9	40.0	8.2	-5.9
Domestic (net)	2.3	33.9	10.7	-10.1	3.0
Others (net)	0.0	0.0	0.0	0.0	0.0

SOURCE: World Bank, Country Appraisal Report



FIGURE 1



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A N N E X    I I  
TABLES FOR CHAPTER II



GRENADA  
TABLE 2.2.1  
LAND USE

CATEGORY	GRENADA ACREAGE	% OF LAND	CARRIACOU ACREAGE
Total land in agric. use	46520	100%	5538
Land under temporary crops	11610	25%	486
Land under tree crops	33780	73%	66
Cocoa	10990	24%	-
Banana	8800	19%	-
Nutmeg	9350	20%	-
Coconuts	2330	5%	-
Fruit trees	2310	5%	-
Grassland-cultivated	410	1%	1976*
Grassland-uncultivated	720	2%	3010
Forest/Woodland	19800	-	450

SOURCE: Technical Note No. 2-Land Use Maps of Grenada, Carriacou and Petite Martinique: F.A.O. - Grenada Government-Land Resources Evaluation Project.

\* includes temporary pasture

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



GRENADA

TABLE 2.2.2.

SOIL TYPES

SOIL TYPE	EXTENT		USUAL SLOPE	EROSION HAZARD	FERTILITY	INTERNAL DRAINAGE	ACIDITY	RAINFALL REGIME (mm)	MOISTURE SUPPLY CAPACITY	RECOMMENDATIONS
	PHASE	ACREAGE								
WOBURN CLAY LOAM (1900ac) (>20% of soil found on island fringe)	Regular Stony & Bouldery	1500 4000	10 - 20	High	Medium	Rapid to V. Rapid	Neutral to Alkaline	1500-2000 in dry areas	Fair to low	Drier areas of the South coast, South & North East suitable for Sugarcane, drought resistant pasture drought tolerant fruit- trees such as mangoes, citrus & pineapples.
CAPITOL CLAY LOAM (2000ac)	Wet Areas Stony Soils V. Steep & Shallow Dry Areas Stony Soils V. Steep & Shallow	1400 400 8500 2000	10 - 30	Moderate to High	Medium	Moderate to Rapid	Strongly Acid	2000-4000	Fair to High	On Gentle Slopes Tree Crops, Food Crops, Banana On Steep Slopes Cocoa, nutmeg, coffee, fruit- trees In Dry Areas Citrus, Pineapple
HELMONT CLAY LOAM (1400ac)	Regular V. Steep & Shallow Stony Soils	7200 9300 400	10 - 25	Moderate	Medium High to High	Moderate to Rapid	Nearly Neutral	2500	High	Ideal for most Crops. On Gentle Slopes. Cultivation of Bananas, Cocoa, Food Crops, Vegetables. On Steep Slopes Cocoa, Coffee, Nutmeg, Food trees & Some Food Crops.
PERSEVERANCE CLAY (4000ac)	Regular Stony Soils	2500 1500	5 - 20	Low to Moderate	Medium. Low on P & K	Very Poor Internal Drainage = Poor Aeration	Neutral to Slightly Alkaline	1250-2000	High	Heavy Soil. Difficult to work. Suitable for improved pastures, Food Crops, Food Trees, some Sugarcane.

SOURCE: Adapted from Soil and Land Use Survey No. 9: Grenada

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

GRENADA  
TABLE 2.3.2-1  
DISTRIBUTION OF FARMS BY TYPE OF TENURE

TYPE OF TENURE	PERCENTAGE OF ALL FARMERS IN GRENADA (%)
Owned by individuals	46.7
Owned by families	19.4
Partowned and part rented	7.9
Managed for others	7
Rented/Leased	1.2
Share Cropped	1.9
'Landless' Farmers	4.8

SOURCE: Grenada Agricultural Census 1981

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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Share Cropped	1.9
'Landless' Farmers	4.8

SOURCE: Grenada Agricultural Census 1981



GRENADA  
 TABLE 2.3.3-1  
 AVERAGE NUMBERS OF PARCELS PER HOLDINGS

CATEGORY	AVERAGE NO. OF PARCELS	AVERAGE SIZE OF PARCELS (Ac)	AVERAGE DISTANCE OF HOLDING FROM DWELLING PLACE
<b>Size Class</b>			
0 - 5 ac.	1.4	0.9	0.7 miles
5 - 10 ac.	2.3	3.2	1.1 miles
10 ac.	2.2	23.0	2.0 miles
<b>Extention District</b>			
East	2.1	1.9	0.8
North	1.4	3.5	1.0
West	1.5	3.8	1.3
South	1.6	1.5	0.7
Carriacou	1.4	2.0	0.2





GRENADA

TABLE 2.3.4-1

No. of Farmers by Main Types of Production

TYPE OF PRODUCTION	NO OF FARMERS	% OF TOTAL FARM
Cocoa	4420	54
Nutmeg	4153	51
Bananas	2206	27
Roots and Tubers	2052	25
Vegetables	2023	25
Fruits	1843	23
Corn and Peas	1616	20
Coconuts	709	9
Sugar Cane	346	4
Minor Spices	263	3
Cotton	82	1
Small Livestock	2507	31
Large Livestock	1175	14

SOURCE: Grenada Agricultural Census 1981

NOTE: Table does not indicate ratio of mixtures nor volumes of production.

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GRENADA  
TABLE 2.3.4-2  
LIVESTOCK NUMBERS IN SELECTED YEARS

KIND	1961	1964	1971	1975	1982
CATTLE	7999	6801	6600	3907	4168
SHEEP	6248	10448	9000	8313	5442
GOATS	5673	4262	7500	6192	2625
PIGS	8301	11049	15000	6354	2747
POULTRY	106400	12200	250000	143629	N/A

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GRENADA  
TABLE 2.4.1-2  
THE STRUCTURE OF EARNINGS AND EMPLOYMENT BY  
OCCUPATION AND EMPLOYER, 1985

Occupation	Average earnings per annum (EC \$ nearest 100)	Percent of total self-employed	Average earnings per annum (EC \$ nearest 100)	Percent of total government employees	Average earnings per annum (EC \$ nearest 100)	Percent of total non-government employees
Professional/white collar	43100	2.15	10300	29.32	21100	8.33
Clerical/sales	7100	16.67	6500	7.17	6700	15.38
Skilled	5100	8.60	9000	11.40	5600	15.38
Semi-skilled	3700	11.29	7300	1.95	4100	4.49
Farm and farm-related	5900	42.47	2800	8.79	3100	20.83
Unskilled	6300	17.74	3500	35.83	5100	33.65
Other	3000	1.08	7400	5.54	13500	1.92
		100.00		100.00		100.00

SOURCE: 1985 Household Survey of Grenada



GRENADA  
 TABLE 2.4.1-1  
 SELECTED ECONOMIC DATA FOR 20 SMALL FARMS IN GRENADA  
 APRIL 1980 - MARCH 1981 (EC\$)

	AVERAGE	RANGE
Acreage	1.5	0.7 - 2.2 acres
No. Crops grown	12	4 - 26
No. Crops sold	5.8	1 - 16
Cash Income from Crops	\$1910	\$67 - 8202
Cash Income from Livestock (only 6 farmers)	\$450	\$120 - 941
Total Cash Income	\$204	\$67 - 8202
Value of Home Consumed Crops	\$856	\$338 - 4034
Value of Home Consumed Lives- stock (14 farmers only)	\$186	
Value of Total Production	\$3017	\$120 - 941
% of Cash Income	54%	13 - 93%
Cost of labour	\$346	\$0 - 1291
Cost of materials	\$720	\$10 - 2549
Total operating costs	\$1130	\$142 - 3783
Total Cash Expenditure	\$1412	\$132 - 3783
Average Loss on 12 farms	\$920	\$-65 to -4018
Net Surplus on 8 farms	\$2571	\$198 - 6994

SOURCE: CARDI-USAID Small Farms Systems Research Project -  
 Final Report 1978-82 Vol. 3





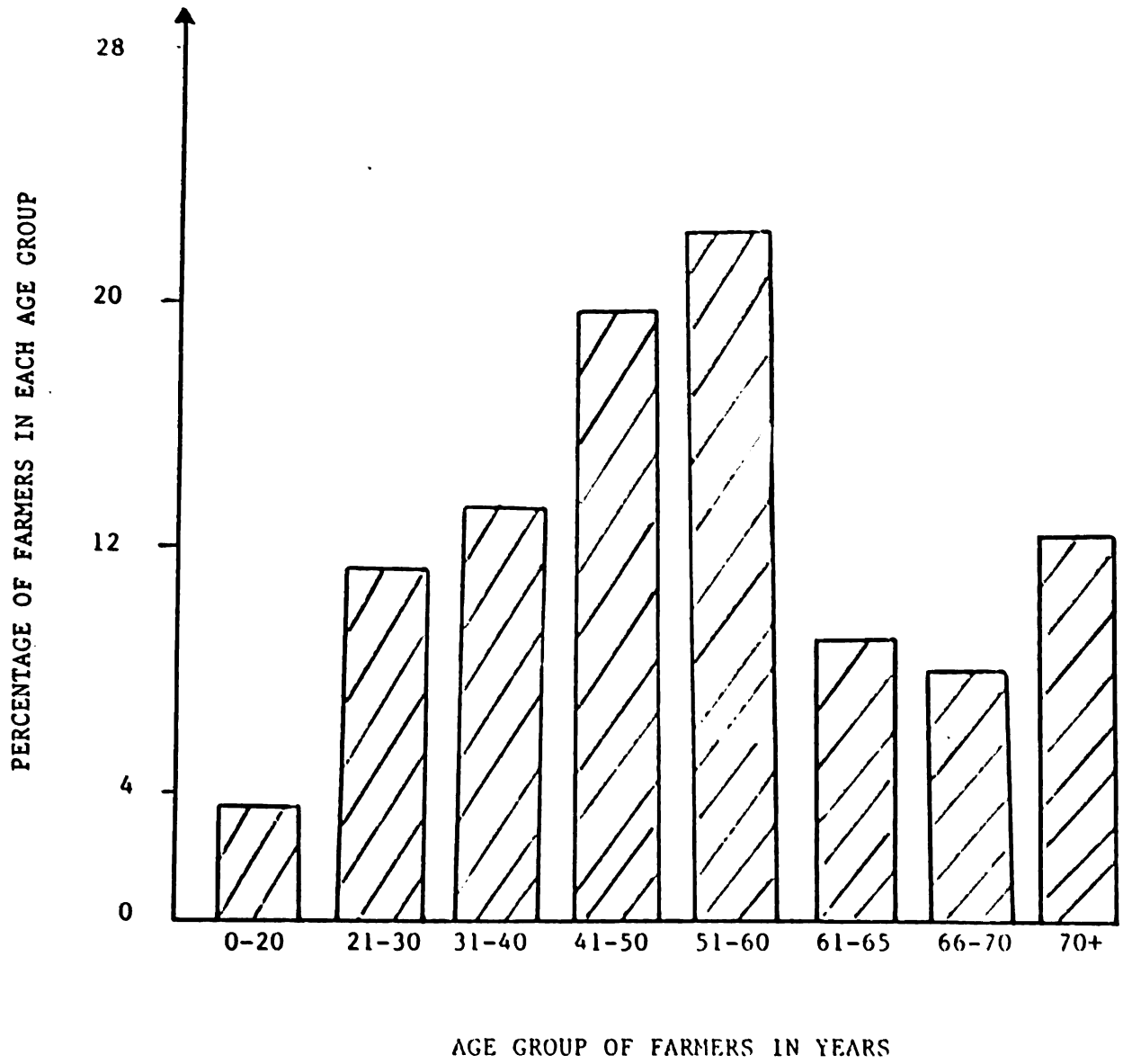
GRENADA  
TABLE 2.4.2-1  
AGE OF FARMERS

AGE GROUP	NO.	PERCENTAGE
< 20 years	252	3.1%
21 - 30	912	11.1%
31 - 40	1102	13.4%
41 - 50	1543	18.8%
51 - 60	1860	22.7%
61 - 70	1508	18.4%
> 70	1025	12.5%
TOTAL	8202	100%

SOURCE: Grenada Agricultural  
Census 1981. Ministry of Planning



FIGURE 2.4.2  
DISTRIBUTION OF FARMERS IN GRENADA  
BY AGE GROUP





GRENADA  
TABLE 2.4.2-2  
SEX OF FARMERS

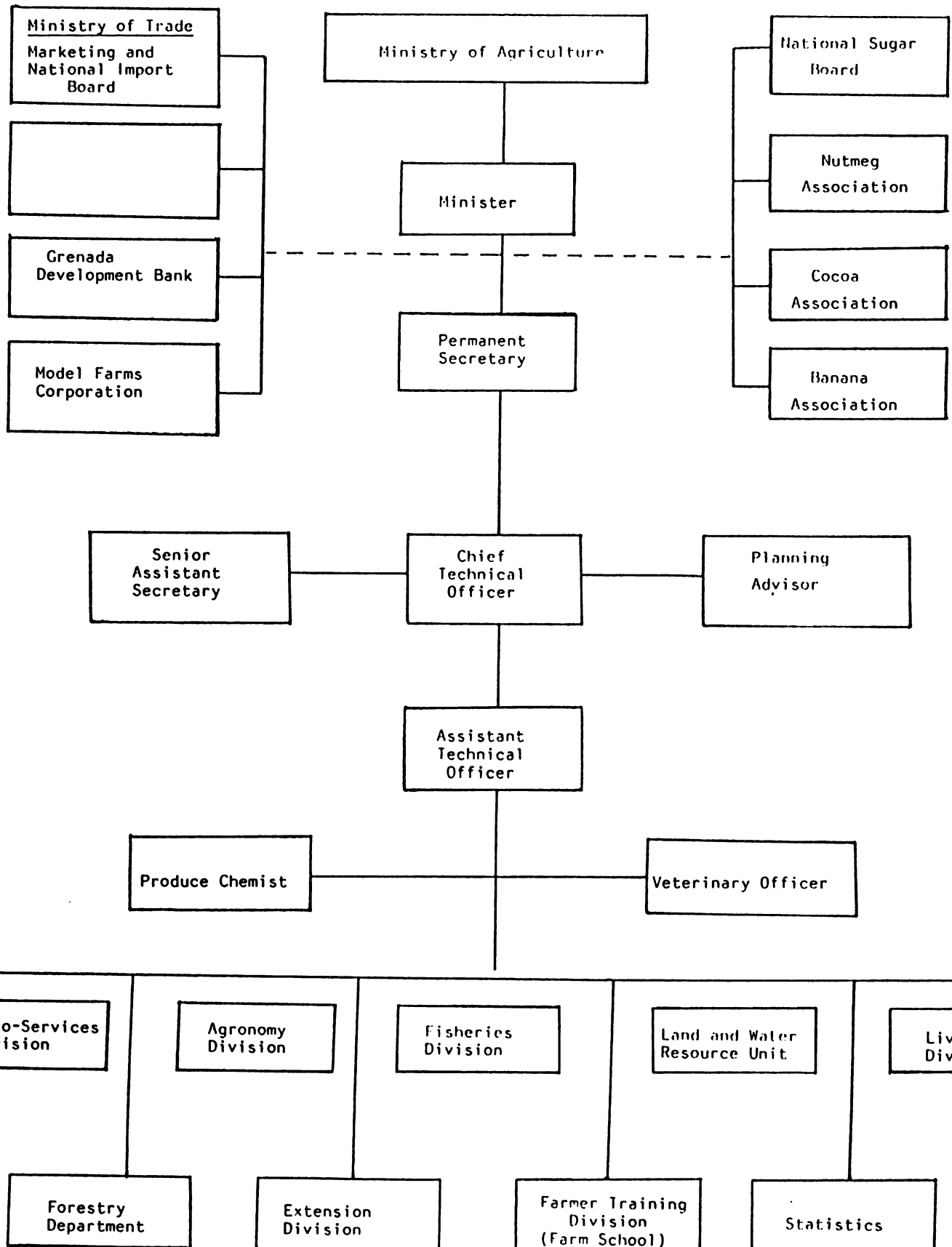
SEX	NO. FARMERS	PERCENTAGE
Male	5069	61.8%
Female	3133	38.2%
TOTAL	8202	100%

SOURCE: Grenada Agricultural  
Census 1981. Ministry of Planning



FIGURE 2.5.1.

NATIONAL INSTITUTIONS LINKED TO FRESH PRODUCE MARKETING







GRENADA

TABLE 2.5.2-1  
BASIC INFORMATION OF FARMERS ORGANIZATIONS IN GRENADA, 1986

NAME OF ORGANIZATION	YEAR FOUNDED	NUMBER MEMBERS	PRINCIPAL CROPS	VALUE OF SALES (EC\$)	SERVICES OFFERED	ASSISTING AGENCIES	EQUIPMENT/INFRASTRUCTURE OWNED
Grenada Co-operative Nutmeg Association	1947	8,000	Nutmeg, Mace	\$12.5 million (1985)	Processing; storage; marketing	none	Office/furniture trucks/equipment 21 receiving stations 3 processing stations
Grenada Banana Co-operative Society	1954	1,100	Banana	\$8.6 million (1985)	Input supply; credit; spraying; training technical assistance; information; marketing transportation.	WINBAN, CDB, CARICOM USAID, EDF, GEEST	Office; garage; warehouse; 6 boxing plants; 15 jeep vehicles; one truck; spray equipment
Grenada Cocoa Association	1964	6,877	Cocoa	\$12.2 million (1985)	Input supply; pest & disease control; transportation; processing; storage marketing.	None	Office; warehouse; 3 fermentaries; 24 buying stations 5 trucks and 14 4-wheel drive vehicles
Minor Spices Co-operative Marketing Society	1971	2,600	Cloves, Cinnamon, Pimento, Tumeric, Tonka Beans	\$0.5 million (1984)	Grading; Storage; Marketing;	None	Office; products are purchased at Nutmeg Associations' facilities
Young Workers Co-operative Society	1975	5	Cocoa, Nutmeg, Banana	Small	None	ART, CARDATS	None
Productive Farmers Union (National Productive Farmers Union)	1980	800	None	\$35,000 (1983)	Training; T.A.; information; represent interests small/medium farmers; farm input supply.	ICRI, WOW, HIVOS, OXFAM.	Administration & supply centre in Grenville
United Workers Co-operative Agricultural Production Society	1981	5	Vegetables, Coconut, Bananas, yams	\$12,000 (1985)	None	ART, CARDATS	None
Grenada Cane Farmers Association Ltd.	1984	107	Sugarcane	0	Transportation; land preparation; training	HIVOS, CUSO, ART	None
Concord & New Hampshire Co-operative Marketing & Supply Centre	1984	200	Vegetables & roots	N.A.	Farm input supply; marketing	ART, CERES, EDF, FRENCH	2 supply & purchase centres
Carinut Agricultural Production Co-op.	1985	7	Peanuts, Cassava, Tomatoes	Small	Land preparation; training	ART, HIVOS	One tractor



## ANNEX II

### Public Sector Institutions

The national institutions making up the agricultural sector in Grenada are the Ministry of Agriculture, The Marketing And National Importing Board, the Grenada Development Bank and the Model Farms Corporation.

#### 1. Ministry of Agriculture

The MOA has 187 established positions of which some 10% are vacant. In December 1986 there were 168 staff in place working in the following Division/Departments.

##### a. Administration

This Department provides direction and administrative support to the various programmes of the Ministry. It is headed by the Permanent secretary responsible for overall co-ordination, budget management and personnel administration and development. Two fulltime staff (Chief and Assistant Technical Officer) are responsible for technical administration with a support staff of three persons.

##### b. Planning and Statistics

The Planning Department consists of one planning specialist, supported by the statistical unit. The responsibilities of this department include the generation and analysis of information needed for decision making; the formulation of plans and strategies and project identification, preparation and monitoring.

The Head of the Agricultural Statistics Unit is directly responsible to the Chief Technical Officer of the Ministry of Agriculture. He supervises the activities of the Unit and collaborates with the Head of the Central Statistics Unit of the Ministry of Trade. A clerk and three junior officers are responsible for conducting periodic surveys and collecting agricultural production and marketing information.

One of the main activities of the Unit has been the collection of estimated export statistics on the huckster trade.

##### c. Produce Chemist Laboratory

This Division is headed by a Coordinator who reports to the Chief Technical Officer, and is responsible for overall management of the Division's activities. The co-ordinator, a Microbiologist by profession, is specifically responsible for quality assessment activities of the laboratory. H



coordinates the activities of the chief chemist and the food technologist, who are assisted by two laboratory technicians and two laboratory assistants.

The main activities carried out are:

- i. chemical analysis of food and drugs.
- ii. processing and issuing of licences for importation of pesticides.
- iii. processing of fruit juices (mainly citrus).
- iv. microbiological analyses of milk, fish, animal feed and candied fruits.
- v. technical assistance to small processors in the areas of processing, labelling and packaging.
- vi. staff training.
- vii. Coffee Processing Plant

In an attempt to promote and encourage the production and domestic use of locally grown coffee the Ministry of Agriculture operates a coffee processing plant. The plant is located at Telescope (St. Andrews) and employs one person. It operates only periodically and upon demand.

#### d. Extension Division

Its purpose is to facilitate the achievement of the National Agricultural Policy by assisting the farming community in analysing and solving their problems, promoting the development of desirable attitudes among farmers, broadening their knowledge and increasing their skills.

In accordance to the Division's 1986 work plan, the objectives of the service include:

- i. To increase the level of production per unit of existing export crops (cocoa and banana by 20% and nutmeg by 10%).
- ii. To increase production of green and yellow vegetables and food crops for local consumption and for export to regional markets.
- iii. To increase production of fruits for both local and regional markets, and also to provide raw material for agro-industry.
- iv. To train young people in scientific farming methods using available modern technology.
- v. To provide the Mirabeau school students with theoretical knowledge and the corresponding practical skills which will enable them to get optimum production from farming units.



vi. To train these students in the principles of farm management and agricultural economics so as to enable them to manage small agricultural enterprises in an efficient and disciplined manner, as well as to assess the viability of enterprises and plan alternatives.

The Chief Extension Officer (CEO), assisted by an Agricultural Assistant, heads the Division. The CEO is directly responsible to the Chief Technical Officer (CTO). Reporting to the CEO are five district extension supervisors and one Information Officer. Each of the five extension districts is serviced by a number (3-8) of junior extension officers.

Staff training, farm visits, farm demonstrations, and distribution of planting material are the major activities of the Extension Division.

#### e. Agronomy (Research) Division

The responsibility for the Agronomy division is shared by two Agronomists, one responsible for sugar cane and the other for food crops. Both are based at the Mirabeau Agricultural Station (MAS) located in St. Andrews, and are directly responsible to the CTO.

The MAS is managed by an Officer-in-charge who is also responsible for the Mardigras Demonstration Station located in St. George's. The Officer (an horticulturist) also supervises two foremen at the MAS. The two foremen, one for propagation and the other for field activities supervise the activities of a number of daily paid employees.

Plant propagation, in-service training and the multiplication of root crops, corn and legumes are the major activities carried out by the Agronomy Division. Fruit tree crops, ornamentals and "minor spices" are also propagated.

#### f. Pest Management Unit

The Pest Management Unit (PMU) became functional in 1985, replacing the Plant Protection Division. It is headed by a Manager who is directly responsible to the CTO. The Manager is assisted by the Pest Management Officer who also supervises a staff of eight; comprising five Plant Quarantine/Plant Protection Officers, one Laboratory Technician and two Student Agricultural Instructors. This staff listing excludes two senior technical officers seconded, respectively, to the Banana and Cocoa Associations prior to the formation of the PMU.

The Manager position is vacant but the duties of the post have been, temporarily, performed by an IICA technician since the Unit started operations. Two posts of Plant





Quarantine/Plant Protection Officers are also vacant.

Staff training, both locally and overseas, was the principal activity of the PMU in 1985-86. Staff members were trained both in plant quarantine and in the identification of pest and diseases, as well as in their integrated control. The Unit is responsible for issuing import permits and phytosanitary certificates and for carrying out the fruit fly and Mango Seed Weevil surveys.

#### g. Veterinary and Livestock Division

The purpose of the Division is to promote the development of the livestock industry in Grenada. This is being undertaken by training in disease prevention and control, establishment of improved pastures and improved husbandry and managerial skills. Veterinary medical care for animals is provided to farmers through field clinics. Attempts are being made to establish epidemiological surveillance of animal diseases and to enforce regulations controlling import and export of animals and animal products.

The Veterinary and Livestock Division employs a staff of 20 persons, including one veterinary officer, one livestock officer, one laboratory technician (vacant), one student laboratory technician, one technical assistant (vacant) and 15 livestock assistants.

#### h. Agro-services

Farm roads and farm machinery are the two units within the Agro-services Division, oriented to help the farmer increase productivity and to facilitate marketing.

New farm roads are constructed into isolated agricultural areas and existing roads are maintained. Activities include improving drainage, grading, surfacing, building/repairing bridges, laying gabion baskets and others.

The Farm Machinery Unit makes equipment available on a fee basis to facilitate terracing, land clearing, tillage and cultivation.

#### i. Land and Water Resources Unit

The Land Use Officer heads this unit. He reports to the CTO and is advised by the Hydrological Steering Committee comprising technical experts (including the Land Use Officer) in the fields of soil and water management. The Unit is divided in two sections, Land Use and Hydrology, each with two Field Assistants. Their major functions relate to the determination of the upper watershed. They are supported by a Laboratory Technician who carries out soil analysis of the Mirabeau schools samples collected. Two clerks/typists provide the administrative support. There ar



several positions unfilled, such as Soil and Water Officers(2), Assistant Conservation Officer(2), Field Assistants(2) and Cartographer.

j. Lands and Surveys Department

This Department is headed by a Surveyor who oversees a staff of 18 persons including surveyors, draughtsmen, land rent collectors and clerical and supportive staff. The post of Chief Surveyor is vacant.

Their responsibilities include the surveying of Government land to facilitate sale or lease; surveying of lands identified by Government for acquisition; carrying out subdivision surveys of Government lands and maintaining a record of all Government lands.

k. Forestry Department

Of the land mass in Grenada, 23 percent is covered by forest and marginal lands, an area of some 5800 ha. Twenty five percent of those are Government owned, the largest area being the Grand Etang Forest Reserve.

The Department is charged with supervising, controlling and developing the forests of Grenada. This entails the preservation of tree cover to prevent erosion and protect flora and fauna; the organized exploitation of the forest products; technical assistance to private owners of forests; establishment of recreation center; forest research; promotion of forest industries, and provision of forest related training.

The Forestry Department is headed by a Forestry Supervisor, an unfilled position. Six Foresters are responsible to him, one of whom is responsible for timber production. The others share responsibility for implementing and supervising activities at the three forest locations in the country. They also supervise the operations of five Forest Rangers and Forests Guards.

The Department undertakes a wide range of activities most of which are funded by CDB, USAID, and/or BDD. Major activities carried out include:

- i. general forestry operation such as surveying, selective felling and logging, planting and maintenance of trails, boundaries and inspection lines.
- ii. nursery establishment and maintenance.
- iii. construction of forest access roads.
- iv. implementation of a fruit forest programme.



v. establishment of a Forestry Interpretation Center.

vi. production of timber, fence posts and fencing.

Activities of the Forestry Department should impact on fruit production through the expected yields positively from twenty acres of mixed fruit orchard established as part of the fruit forest programme.

## 2. The Marketing and National Import Board

The Marketing and National Import Board (MNIB) is a statutory Government Body established in 1973, under the administration of the Ministry of Trade. Its primary mandate is to purchase and market locally produced agricultural commodities, excluding the traditional export crops. However, for the past seven years the imports of rice, sugar, powder milk and, periodically, other items such as cement, have accounted for the majority of its operations. MINB's central office, retail depot and storage facilities are located on Young Street in St. George's. Since 1986 its export operations have been located in facilities on River Road. At the Careenage there is an office for personnel handling imports. Retail outlets, in addition to the one on Young Street, are located in Carriacou and in Petit Martinique.

The MNIB has five Divisions (imports, procurement, shipping, accounts, administration) and employs some seventy persons, over 90% of which on a full time basis. Its policy guidelines are formulated by a government appointed Board of Directors, and handed down to the General Manager. The Accounts and Administration Divisions are each headed by a Divisional Manager. The Deputy General Manager is responsible for the Import, Procurement and Shipping Divisions. All Divisional Heads report to the General Manager. The procurement Division is the largest and carries out three distinct functions: purchasing for the domestic market, local retailing and marketing.

During the period February 1986 to January 1987 a full-time marketing specialist under the Agricultural Rehabilitation and Crop Diversification Project provided technical assistance to MNIB on export marketing of fruits, vegetables and cut flowers.

## 3. Grenada Development Bank

The Grenada Development Bank (GDB) is a lending agency established in 1976 with the purpose of supporting agricultural and industrial development within the guidelines of Caribbean development credit, as established by the Caribbean Development Bank (CDB).



The Manager of the GDB is responsible to a Government-appointed Board of Directors. He has a direct relationship with the Farm Improvement Officer (FIO) and the Industrial Development Specialist (IDS), both of whom are employees of the Caribbean Development Bank which provides a sizeable proportion of the GDB's lending funds. The FIO and IDS also perform the duties of the Senior Agricultural Credit Officer (SACO) and the Senior Industrial Credit Officer (SICO), respectively. They are fully integrated into the organizational structure of the GDB and, despite being employees of the CDB, have direct responsibility to the Manager of the GDB. Seven Agricultural Credit Officers (ACO) and two Industrial Credit Officers (ICO) are responsible to the SACO and SICO, respectively. The FIO and ICO's are responsible for the generation, formulation, preparation, supervision and appraisal of projects. The ACO's are field staff, and are engaged in routine follow-up activities. A Research Assistant is attached to the ICOs but this position is vacant. A Senior Loans Administration Officer reports directly to the Manager. He is secretary to the Board of Directors, and monitors the loans arrears positions, and is responsible for the legal aspect of loans security. Additionally, he is engaged in day to day administrative supervision. The GDB also employs an Accountant/Assistant Loans Administrative Officer, an Assistant Accountant, a Senior Accounts Clerk, two Accounts Clerks, a Cashier, a Secretary/receptionist, two typists and an office Attendant.

#### 4. Grenada Model Farms Corporation

Through appropriate legislation, enacted August 25, 1986, the Model Farms Corporation (MFC) was created in place of the Grenada Farms Corporation (GFC). This Act establishes a seven member Government appointed Board of Directors. A General Manager reports to the Board, and is responsible for the overall operations of the twenty three agricultural farms vested in the MFC farms.

The General Manager is the Chief Executive of the Corporation and is responsible for carrying out its general policy, including:

- i. the preparation of a comprehensive development plan of model farms;
- ii. the maintenance, management and control of all vested farms (approximately 3200 acres) until they are disposed of as model farms, and
- iii. the settlement of small farmers on viable small farm units.

The Corporation will decide the size of a model farm, select/approve a person to purchase/lease a model farm and assist such persons become effective small farmers.





Assisting the Project Manager is the Operations Manager whose major responsibility is the planning, implementation and overall supervision of major field operations. There are four Divisional Managers who supervise groups of farms within their respective districts. They report to the Operations Manager. The day to day planning and supervision of farm activities is undertaken by nineteen supervisors, and are responsible for measuring tasks and ensuring that the approximately three hundred farm workers perform those tasks satisfactorily. Other employees of the MFC's head office are responsible for supporting the Financial Comptroller, for receiving and compiling data from the various farms, and for providing clerical services.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

A N N E X    I I I

TABLES FOR CHAPTER III



GRENADA  
 TABLE 3.1.2-1  
 CONSUMPTION OF FOOD CROPS (1986) 1/

CROPS	APPARENT ANNUAL CONSUMPTION (KG)	DAILY INTAKE (KG/PERSON/DAY)
SWEET POTATO	225475	0.0063
YAM	270771	0.0076
DASHEEN	420999	0.0119
TANNIA	52275	0.0015
CASSAVA	N/A	N/A
CORN	31768	0.0009
PIGEON PEA	959985	0.0271

1/ Estimated pupulation: Approximately 97,000 inhabitants

SOURCE: Food and Nutrition Surveillance System  
 Crude Estimates of Food Availability, Grenada, 1986  
 (Information compiled by Grenada Food & Nutrition  
 Council)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

GOVERNMENT OF NIGERIA  
 FEDERAL BUREAU OF STATISTICS  
 PRODUCTION, EXPORT AND IMPORT OF FOOD CROPS AND OTHER CROPS

YEAR AND CROP	PRODUCTION (000 T)	EXPORT (000 T)	IMPORT (000 T)	STOCKS (000 T)
<b>1980</b>				
SWEET POTATO	7,514			6,514
YAM	10,711			9,711
DASHEEN 1	2,117			1,117
TANNIA	2,114			1,114
CORN	26,714			25,714
PIGEON PEA	1,000.0			1,000.0
<b>1981</b>				
SWEET POTATO	8,014			7,014
YAM	10,711	1,014		9,711
DASHEEN 1	2,117	1,117		1,117
TANNIA	2,114	1,114		1,114
CORN	26,714			25,714
PIGEON PEA	1,000.0			1,000.0
<b>1982</b>				
SWEET POTATO	8,114			7,114
YAM	11,114	2,114		9,114
DASHEEN 1	2,117	1,117		1,117
TANNIA	2,114	1,114		1,114
CORN	26,714			25,714
PIGEON PEA	1,000.0			1,000.0
<b>1983</b>				
SWEET POTATO	8,214			7,214
YAM	11,214	2,214		9,214
DASHEEN 1	2,117	1,217		1,217
TANNIA	2,114	1,214		1,214
CORN	26,714			25,714
PIGEON PEA	1,000.0			1,000.0
<b>1984</b>				
SWEET POTATO	8,314			7,314
YAM	11,314	2,314		9,314
DASHEEN 1	2,117	1,317		1,317
TANNIA	2,114	1,314		1,314
CORN	26,714			25,714
PIGEON PEA	1,000.0			1,000.0
<b>1985</b>				
SWEET POTATO	8,414			7,414
YAM	11,414	2,414		9,414
DASHEEN 1	2,117	1,417		1,417
TANNIA	2,114	1,414		1,414
CORN	26,714			25,714
PIGEON PEA	1,000.0			1,000.0
<b>1986</b>				
SWEET POTATO	8,514			7,514
YAM	11,514	2,514		9,514
DASHEEN 1	N/A	1,517		N/A
TANNIA	1,114	1,514		1,114
CORN	26,714		1,514	25,214
PIGEON PEA	N/A	1,514	1,514	N/A

SOURCE: MINISTRY OF AGRICULTURE AND ANIMAL HUSBANDRY

1. INCLUDES 1980

1950年10月1日



GRENADA  
TABLE 3.1.2.3-1  
FOOD CROPS PRODUCTION STATISTICS (1984-1986)

CROPS	PLANTED ACRES 1986	PRODUCTION ('000LB) 1986	YIELD ('000LB/A) 1986
SWEET POTATO	46.1	498.1	10.8
YAM	18.5	600.1	32.4
DASHEEN	67	983.8	14.7
TANNIA	-	123.8	-
CASSAVA	-	-	-
CORN	673	-	-
PIGEON PEA	856	-	-

SOURCE: Statistics Unit, Ministry of Agriculture



GRENADA  
TABLE 3.1.3-1  
ESTIMATED ANNUAL APPARENT DOMESTIC CONSUMPTION (1981-186)

YEAR AND CROP	VOLUME ('000LB)			APPARENT CONSUMPTION
	PRODUCTION	EXPORT	IMPORT	
1981				
TOMATO	99.4	0	0	99.0
CABBAGE	666.3	0	0	66.0
CARROT	58.1	0	0.2	58.3
CALALLOO	97.0	0	0	97.0
PUMPKIN	452.4	22.0	0	430.4
EGGPLANT	38.3	N/A	0	N/A
1982				
TOMATO	119.3	0	0	119.3
CABBAGE	79.3	0	0	79.3
CARROT	59.2	0	13.6	72.8
CALALLOO	99.6	0	0	99.6
PUMPKIN	542.7	9.9	0	532.8
EGGPLANT	95.5	57.2	0	38.3
1983				
TOMATO	108.3	0	0	108.3
CABBAGE	70.0	0	0	70.0
CARROT	58.0	0	32.0	0.0
CALALLOO	99.8	0	0	99.8
PUMPKIN	482.0	24.3	0	457.7
EGGPLANT	N/A	3.2	0	N/A
1984				
TOMATO	97.5	0	0	97.5
CABBAGE	133.9	0	0	133.9
CARROT	66.8	0	64.0	130.8
CALALLOO	100.0	0	0	100.0
PUMPKIN	431.0	19.8	0	411.2
EGGPLANT	N/A	0	0	N/A
1985				
TOMATO	97.0	0	0	97.0
CABBAGE	133.0	0	0	133.0
CARROT	100.0	N/A	N/A	N/A
CALALLOO	100.0	27.0	0	73.0
PUMPKIN	299.0	37.5	0	261.5
EGGPLANT	N/A	0	0	N/A
1986				
TOMATO	77.2	N/A	N/A	N/A
CABBAGE	377.1	N/A	N/A	N/A
CARROT	191.0	N/A	N/A	N/A
CALALLOO	N/A	N/A	N/A	N/A
PUMPKIN	460.6	N/A	N/A	N/A
EGGPLANT	10.3	N/A	N/A	N/A

SOURCE: MINISTRY OF AGRICULTURE STAT. SECTION

N/A means 'Not Available'



GRENADA

TABLE 3.1.3.1-1

MONTHLY RAINFALL DATA(mm) TAKEN AT MIRABEAU AGROMETEOROLOGIC STATION LOCATED ON THE EASTERN SIDE OF G/DA.(altitude- approx. 140m): 1977 - 1986.

MONTH	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
JAN	10	134	49	224	128	119	102	196	197	103
FEB	60	23	55	70	121	150	17	234	83	77
MAR	13	56	147	65	85	23	35	61	47	35
APR	61	65	114	36	383	103	57	57	204	25
MAY	72	41	109	64	126	82	281	155	83	47
JUNE	184	175	315	188	184	167	236	116	148	274
JULY	203	333	412	151	291	155	281	270	229	130
AUG	260	377	329	246	257	193	225	326	315	185
SEPT	279	145	266	197	246	106	339	209	265	428
OCT	234	166	202	421	179	319	265	411	351	284
NOV	262	200	517	202	107	221	234	451	189	181
DEC	171	135	452	218	167	163	195	253	192	144
TOTAL	1808	1851	2968	2081	2274	1799	2265	2739	2302	1914

SOURCE: Prepared by IICA Office(Grenada) from data(inches) provided by the Mirabeau Agromet Station, Ministry of Agriculture.

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GRENADA  
TABLE 3.1.3.2-1  
VEGETABLE SEED AVAILABILITY IN GRENADA (Nov. 1987)

	CULTIVAR	PACKET (UNIT)	PRICE (E.C.\$)	SEED SOURCE	REMARKS
TOMATO	Tropigro	1/2 oz.	2.50	Key Stone	Slow seller
		100g	29.00		
	Ace 55 V.F	1/2 oz.	2.70	Key Stone	Slow seller
		100g	36.50		
	Walter	1/2 oz.	2.70	Key Stone	Fast seller
		100g	29.00		
	Floradade	1/2 oz.	2.70	Key Stone	Fast seller
		100g	29.00		
	Floralou	1/2 oz.	2.70	Key Stone	Fast seller
		100g	29.00		
	Capitan	10g	64.50	Peto	Slow seller (recently introduced)
		25g	155.50		
	Calypso	1/4 oz.	2.23	Peto	Very fast seller
		1 lb	114.99		
	Indian River	1/4 oz.	2.23	Peto	Fast seller in the wet season
		1 lb	114.99		
	Manalucie	1/2 oz.	3.90	Peto	Average seller
		1 lb	102.68		
	Marglobe	1/2 oz.	2.50	Key Stone	Average seller
		1/4 lb	28.22		
	KK Cross	1/4 oz.	11.25	Taki	Fast seller
		100g	120.50		
	Hybrid Earlimart	1/2 oz.	9.75	Key Stone	Average seller
		100g	60.75		
	Hybrid Red Head	1/2 oz.	9.75	Key stone	Average seller
		100g	60.75		
	Golden Acre	1 oz.	1.70	Sun Seed	Fast seller
		1 lb	17.64		
Market King	1/2 oz.	8.17	Peto	Average seller	
	1 lb	265.55			
YR Summer	1/2 oz.	12.30	Taki	Average seller	
	1 lb	412.55			
Copenhagen Market	1/2 oz.	1.27	Sun Seed	Fast seller	
	1 lb	21.48			
Hybrid Fortuna	1/2 Oz.	11.49	Peto	Slow seller (recently introduced)	
	1 lb	383.48			
CARROT	Chantenay	1/2 oz.	1.95	Key Stone	Fast seller
		100g	12.50		
	Danvers	1/2 oz.	1.95	Key Stone	Fast seller
		100g	12.50		
	Hybrid Goldmine	1/2 oz.	8.50	Key Stone	Fast seller
		100g	45.00		
	Hybrid Royal Cross	1/2 oz.	6.38	Taki	Fast seller
		1 lb	163.17		
EGGPLANT	Black Beauty	1/2 oz.	2.10	Key Stone	Average seller
		100g	15.25		
	Pampano Market	1/2 oz.	2.10	Key Stone	Average seller
		100g	14.20		

SOURCE: Farm Shops, St. George





GRENADA  
 TABLE 3.1.3.3.-1  
 VEGETABLE CROP PRODUCTION AND YIELD (1986) - GRENADA

VEGETABLE CROP	ESTIMATED PRODUCTION ( '000LB)	ESTIMATED AREA (ACRES)	ESTIMATED YIELD ( '000LB/Ac)
TOMATO	77	9	8.5
CABBAGE	377	25	15.1
CARROT	191	26	7.3
PUMPKIN	461	26	17.7
CALLALOO	N.A.	N.A.	N.A.
EGGPLANT	10	1	10

N.A. MEANS - Not Available

SOURCE: Statistics Unit, Mainistry of Agriucture

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GRENADA  
TABLE 3.1.3.5-1  
AGRICULTURAL IMPORTS

COMMODITIES	1980			1981			1982			1983			1984			1985		
	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)		
POTATOES	594	612857	570	547686	470	520462	474	581452	502	568823	662	576084						
ONIONS	299	345325	266	360657	255	295604	291	358038	301	416086	325	336420						
CARROTS	2	2621	0.1	240	6	10790	14	33969	29	36313	12	17582						
GARLIC	21	101611	25	156103	12	73535	22	113394	17	83586	25	119938						
BACON	19	146935	21	160084	1	1990	17	135061	17	138267	23	189153						
HAM	61	520342	35	288192	20	177862	54	479013	76	611900	113	914989						
FRESH PORK	38	114834	46	155366	7	66693	6	46300	16	131792	18	111625						
PICKLED PORK	125	403262	121	463418	104	475627	114	413263	110	423832	114	451173						
MUTTON	7	62676	7	69835	8	76180	10	74206	4	50093	9	79194						
FRESH BEEF	46	514032	49	501771	51	409210	57	430780	81	640261	86	550383						
PICKLED BEEF	70	358535	71	382973	55	337259	23	131700	67	396621	67	394639						
POULTRY MEAT	1679	3449109	1925	4232954	2121	4464694	1994	4215024	2066	4632198	2527	5855818						
MEAT & PRODUCTS	2287	7318311	2484	7682371	2661	7999632	2495	7179778	2696	8900866	2495	6961135						
FISH & PRODUCTS	508	2571194	563	3024435	509	2785194	455	2492085	505	2540333	555	2865898						
PEANUTS	23	188104	22	184533	8	31108	21	83114	11	37812	17	55400						
BLACK EYE PEAS	23		2	4858	4	10892	2	5460	0.4	864	2	6106						
R.K. BEANS	1	2971	1	3355	3	8870	3	7861	3	8999	2	6581						
PEAS & BEANS	173	287065	152	298455	155	271350	137	218887	117	197672	152	224677						
BLACK PEPPER	3	61325	3	32462	2	37895	2	38310	3	55506	2	23754						
COCOA PRODUCTS	20	198834	28	296432	22	236803	18	193367	28	306187	44	391182						
MILK & PRODUCTS	1632	6091339	2073	7805852	1942	8785972	1649	5617794	1947	744616	2660	6889229						
INSECTICIDES	288	809378	272	1337685	161	914407	227	1001786	342	1304625	445	1235108						
FERTILIZERS	3974	2778526	3088	2181794	3794	2494624	1265	640918	2394	1354644	2410	1451049						

SOURCE: STAT. UNIT MINISTRY OF FINANCE

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GRENADA  
TABLE 3.1.3.5-2  
AGRICULTURAL EXPORTS

T)	1980		1981		1982		1983		1984		1985	
	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)
11819	1067272	11201	9872056	9835	8942723	8599	8707422	8450	7884462	8007	8649808	
1810	18193960	2672	19114677	2266	13454061	2288	11351277	2001	11645707	2036	12248288	
1801	9851368	1620	8109339	1910	8221986	2683	9470488	2250	7006015	2995	8920370	
302	1988630	223	1677387	315	2418730	410	226581	140	1472386	203	3547158	
6	112286	30	660748	33	737187	49	838794	29	494367	19	364200	
		420	927186	89	196925	400	882000	733	1615353	970	2139575	
		38	84321	4	9631	82	63595					
		29	64432	345	760140	162	357000	582	1282786	563	1240939	
		35	47943	455	752520	602	823360	623	851608	709	969325	
		149	329420	21	46321	723	1595000	1029	2270907	1103	2432160	
		45	98762	7	14850	165	364000	126	277192	96	212523	
		195	164752	79	171233	79	48192	194	361063	39	86404	
		110	197988	206	340890	588	972750	515	851289	637	1053489	
		169	372186	1	2694	419	924000	415	916061	255	563310	
		10	8705	0.2	200	11	9400			120	145972	
		30	33108	32	35380	24	26900	12	13500	77	68275	
				82	901125	5	52015	396	523543	255	366907	
				20	30807	49	75110	176	1941835	172	1892820	
		39	60648	5	12045	5	12045	68	149135	19	49500	
15738	40818956	17015	41823658	15700.2	37037403	17343	36799929	17844	39720001	18297	44951023	

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GRENADA  
TABLE 3.1.3.5-3  
RETAIL PRICES OF FOOD AND VEGETABLE CROP

CROP	1982	1983	1984	1985	1986
CABBAGE	2.48	2.52	2.80	3.50	3.25
TOMATO	2.85	2.94	3.40	3.75	4.02
EGG PLANT	0.45	0.63	0.65	0.99	1.10
CARROTS	2.00	2.80	3.35	3.50	3.50
PUMPKIN	0.43	0.50	0.68	0.78	0.65
CALALLOO	0.45	0.45	0.70	0.68	0.70
DASHEEN	0.56	0.56	0.55	0.80	0.64
TANNIA	0.70	0.70	0.79	1.00	0.78
EDDOES	0.70	N/A	0.85	N/A	N/A
SWEET POTATO	0.89	1.06	0.99	0.98	1.10
LISBON YAM	0.80	0.89	0.98	1.10	1.10
YELLOW YAM	0.80	0.89	0.95	0.99	1.10
SWEET YAM	0.80	0.89	0.98	1.20	1.10
MOONSHINE YAM	0.80	0.89	0.50	0.78	0.80
CUTTAN YAM	0.55	0.57	0.50	0.65	0.60
GREEN CORN	0.60	0.81	0.65	0.85	0.75
PIGEON PEAS	0.97	2.00	1.20	2.09	1.80

SOURCE: MARKETING AND NATIONAL IMPORTING BOARD

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



GRENADA  
TABLE 3.1.4.1-1  
RECOMMENDED PRODUCTION ENVIRONMENT FOR SPECIFIC FRUIT COMMODITIES

CROP	TEMP. FOR BEST QUALITY		WATER REQUIREMENTS		WIND		Best type	SOIL Main Constraints	Adaptability to different soil types
	Min. degrees C	Max. degrees C	Average tree/day litres	mm per year and special conditions	Tolerance Max. speed (ka/hour)	C damage			
MANGOES	25 to 31		210	1000-1200 mm well distributed. Require dry season of 4-6 mth Best colour in dry areas (<60mm/year) with complementary irrigation.	<40	-Defoliation -Fruit/flower drop -Breaking of twigs -Recuperation: very good	Almost any	-Water logging -Salt	Very wide
AVOCADOES (W. Indian & Hybrids)	25 to 31		160	1000-1200 mm well distributed.	<25	-Heavy defoliation -Fruit/flower drop -Snapping of branches & limbs -Recuperation: poor	Deep, light to medium texture, very good drainage.	-Water logging -Salt -Poor Aeration (rootrot)	Narrow
CAJISEN	5 to 31		85	400-1500 mm well distributed but with dry season	<40	-Same as oranges	Deep, well drained light texture	-Water logging -Salt	Wide
ORANGES	15 to 30 Requires cool temp. for best internal and external colour.		175	1000-1500 mm well distributed but with short dry season (3 mths)	<30	-Defoliation -Fruit/flower drop -Snapping of twigs -Splitting of branches and limbs -Recuperation: fair	Deep sandy loam. Good drainage	-Water logging -Salt	Moderate

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TABLE 3.1.4.1-1  
RECOMMENDED PRODUCTION ENVIRONMENT FOR SPECIFIC FRUIT COMMODITIES

CROP	TEMP. FOR BEST QUALITY		WATER REQUIREMENTS		WIND		Best type	PH	SOIL Main Constraints	Adaptability to different soil types
	Min. degrees C	Max. degrees C	Average mm per year and special conditions	Tolerance Max. speed (ka/hour)	C damage					
GRAPEFRUIT	20 to 30	30	1000-2000 mm well distributed but with short dry season (2-3 mths)	<30	Same as above	Deep well drained sandy loam	5.5-7.5	-Water logging -Salt	Moderate	
LIMES	20 to 30	120	1000-1500 mm well distributed but with short dry season (2-3 mths)	<30	Same as above	Deep well drained loamy	5-6.5	-Water logging -Salt	Wide	
BREADFRUIT	25 to 35	350	1500-2500 mm	<30	-Defoliation -Fruit/flower drop -Breaking of branches & limbs -Splitting of branches -Recuperation: good	Deep well drained loamy soil	6-8	-Shallow soils -Water logging -Salt	Moderate	
PLANTAIN	25 to 30	30	1500-2500 mm/year well distributed	<10	-Shredding of leaves -Snalling -Toppling	Deep well drained loamy soils	5.5-7.5	-Water logging -Shallow soils	Moderate	
SCUP SCP	10 to 35	145	1000-2000 mm well distributed	<30	-Flower abortion & drop -Splitting and/or breaking of branches -Recuperation: fair	Deep well drained loamy	5.5-6.5	-Water logging -Salt	Wide	



Cont'd.

TABLE 3.1.4.1-1  
RECOMMENDED PRODUCTION ENVIRONMENT FOR SPECIFIC FRUIT COMMODITIES

CROP	TEMP. FOR BEST QUALITY		WATER REQUIREMENTS		WIND		Best type	PH	SOIL	
	Min. degrees C	Max. degrees C	Average tree/day litres	mm per year and special conditions	Tolerance Max. speed (ka/hour)	C damage			Main Constraints	Adaptability to different soil types
CARAMBOLA	5 to 30	30	145	1000-2000 mm well distributed	<30		Deep well drained	5-6.5	-Water logging -Salt	Wide
PASSION FRUIT	15 to 30	30	15	1000-1500 mm alternate wet and dry seasons	<30		Deep well drained	6-6.5	-Water logging -Salt	Wide
PAPAYA	15 to 30	30	15	1000-1500 mm well distributed	<10		Deep rich light well drained.	6-8	-Water logging -Salt -Shallow soils	Wide
GUAVA	5 to 35	35	75	1000-1500 mm well distributed It can stand 4-6 dry months	<30		Deep rich well drained soils. Can withstand waterlogging for short periods.	5-7.5	-Flooding for long periods -Salt	Very wide

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TABLE 3.1.4.1-1  
RECOMMENDED PRODUCTION ENVIRONMENT FOR SPECIFIC FRUIT COMMODITIES

B. CHERRY	20 to 30	145	1000-2000 mm alternate wet & dry seasons.	<40	Same as above	Deep rich well drained	5.5-7.0	-Water logging -Salt	Very wide
PINEAPPLE	20 to 30		1000-1500 mm well distributed	<50	Burning of leaves. Fruit stalk bending. Fruit drop Recuperation very good	Sandy loams well drained	4.5-6.5	-Calcareous -Salt -Water logging	Narrow
MACODAMIA NUT	15 to 25		1200-1500 mm well distributed.	<25	-Flower/fruit drop. -Burning of leaves -Breaking and splitting of branches. Recuperation: fair	Deep and fertile with good amount of O.M.	4.5-6.5	-Shallow soils -Salt -Water logging	Narrow
RAMPUTCH AND PULLASH	25 to 35		2500-3000 mm well distributed	<30	-Flower/fruit drop -Burning of leaves -Defoliation -Breaking and splitting of branches. -Recuperation: fair	Rich well drained but with high humidity	5.5-6.5	-Water logging -Salt	Moderate
MANGOSTEEN	25 to 35		1500-3000 mm well distributed but can tolerate several dry months.	<25	Same as above	Deep, rich very well drained clay or sandy.	5.5-7.5	-Water logging -Salt	Wide

SOURCE: Compiled by Rafael Marte from experience and diverse publications.





GRENADA  
TABLE 3.1.4.2-1  
NUMBER OF PLANTS PROPAGATED AND SOLD AT MIRABEAU  
NURSERY OVER THE PERIOD 1981 - 1987

SPECIES	1981		1982		1983		1984		1985		1986		1987	
	PROP.	SOLD	PROP.	SOLD	PROP.	SOLD	PROP.	SOLD	PROP.	SOLD	PROP.	SOLD	PROP.	SOLD
ORANGE	2998	943	2373	1939	3204	1231	4708	2344	1733	1211	0	0	0	0
GRAPEFRUIT	1028	262	1566	1212	648	608	720	1299	972	632	3231	3682	8463	5470
LIME	359	201	34	33	322	95	94	56	749	514	0	0	0	0
MANGO	746	1179	3020	1864	1789	770	1982	1038	1164	1184	1389	1460	5508	3267
AVOCADO	9208	1064	0	2112	0	2114	2128	1096	3715	2287	1255	2705	2912	608
SOURSOP	2242	0	632	198	438	372	991	500	329	323	0	141	127	0
SAPODILLA	278	243	73	183	444	99	420	71	336	273	0	438	1030	420
SUGAR APPLE	133	289	180	239	973	460	582	292	314	294	0	103	821	83
GUAVA	334	116	195	310	0	162	123	52	40	40	146	74	43	0
OTHER	1024	268	11033	1946	4399	1853	3992	1437	3639	1730	1383	1912	2322	1355
TOTAL	18350	4565	19106	10036	12217	7764	15740	8185	12991	8488	7404	10515	21226	11203





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GRENADA  
 TABLE 3.1.4.2-3  
 MOST IMPORTANT FRUIT CULTIVARS\* BEING PROPAGATED  
 AND PLANTED IN GRENADA BY SPECIES

SPECIES	CULTIVARS
MANGOES	Julie Graham Ceylon Peach Imperial Local Seedlings
AVOCADOES	Locals (miss Grenada, Gulley, Evans 1&2, Wells, Popo, etc.) Pollock Simmonds Lula Hall Booth Choquette St. Joseph
ORANGES	P. Brown Local clones Valencia W Navel Pineapple
GRAPEFRUIT	M Seedless Thompson Pink Duncan
LIMES	W Indian Tahiti
SOURSOP	Local selection (Buris)
GUAVA	Local selection Centeno
BREADFRUITS, GOLDEN APPLE W.I. CHERRIES, TAMARIND, ETC.	Local forms

SOURCE: Marte, R. Mirabeau Nursery Survey, 1987, Unpublished

\* presneted in order of importance



GRENADA  
TABLE 3.1.4.6-1  
NUMBER OF BEARING AND NON-BEARING FRUIT TREES  
AND THEIR TOTAL PRODUCTION IN GRENADA

SPECIE	A BEARING TREES (00 UNITS)	B NON-BEARING TREES (00 UNITS)	C (A+B) TOTAL # TREES (00 UNITS)	D TOTAL PROD. (000 KG)	E (D/A) AVG. PROD./TREE (KG)
MANGOES	80.66	23.54	104.2	770.91	95.5
AVOCADOES	70.3	70.3	140.6	804.31	114.41
COCONUT	509.85	79.8	589.65	1415.16	27.75
PLANTAIN	196.78	163.66	360.44	141.14	21
ORANGES	91.58	37.05	128.63	594.88	64.95
GRAPEFRUIT	76.36	40.88	117.24	922.27	120.77
LIMES	80.15	18.7	98.85	289.14	36.07
SOURSOP	118.69	44.09	162.78	307.77	25.93
GUAVA	89.88	8.23	98.11	122.42	13.62
PAPAYA	10.96	13.15	24.11	34.17	21.17
GOLDEN APPLE	50.2	16.74	66.94	1869.63	372.43

SOURCE: Adapted from Grenada agricultural Survey, 1982.





GRENADA  
 TABLE 3.1.4.6-2  
 ESTIMATED PRODUCTION OF SELECTED FRUIT COMMODITIES  
 IN GRENADA FOR THE PERIOD 1980-1985  
 (000lbs)

SPECIES	1980	1981	1982	1983	1984	1985
ORANGES	2064.9	2168.2	2276.5	2055.0	2150.0	1899.0
GRAPEFRUIT	4613.8	4844.6	4913.0	4734.2	4800.0	4795.0
LIMES	1094.3	930.1	976.6	743.2	337.3	332.0
MANGO	3979.2	4058.8	4261.7	3813.0	3900.0	4139.0
PAWPAW	106.7	101.4	81.0	78.1	223.0	269.0
SAPODILLA	524.3	545.2	408.9	436.3	1006.3	690.0
SOURSOP	967.4	1044.8	1149.2	12224.2	1562.9	2462.0
SUGAR APPLE	251.7	256.8	231.1	231.1	240.0	337.0
AVOCADO	2989.7	3139.2	3296.1	3469.0	3500.0	3570.0
BREADFRUIT	3585.5	3700.0	3300.0	2065.1	3162.7	3300.0

SOURCE: Ministry of Agriculture Stat. Section

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GRENADA  
 TABLE 3.1.4.6-3  
 ESTIMATED CROP PRODUCTION BY  
 ACREAGE 1985 and 1995

CROP	1985 AREA (ACRES)	1985 PROD. T/ANNUM	1995 PROD. T/ANNUM
GRAPEFRUIT	234	2113	2113
ORANGES	198	917	917
LIMES	68	332	332
OTHER CIRTUS	50	75	100
MANGOES	217	1702	1702
AVOCADOES	117	1549	1549

SOURCE: Review of Fruit Tree Crop Development  
 in the Caribbean British Development Development  
 and Tropical Development and Research Ins. Oct 1986

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STATE OF TEXAS  
COUNTY OF \_\_\_\_\_

CERTIFICATE OF MARRIAGE

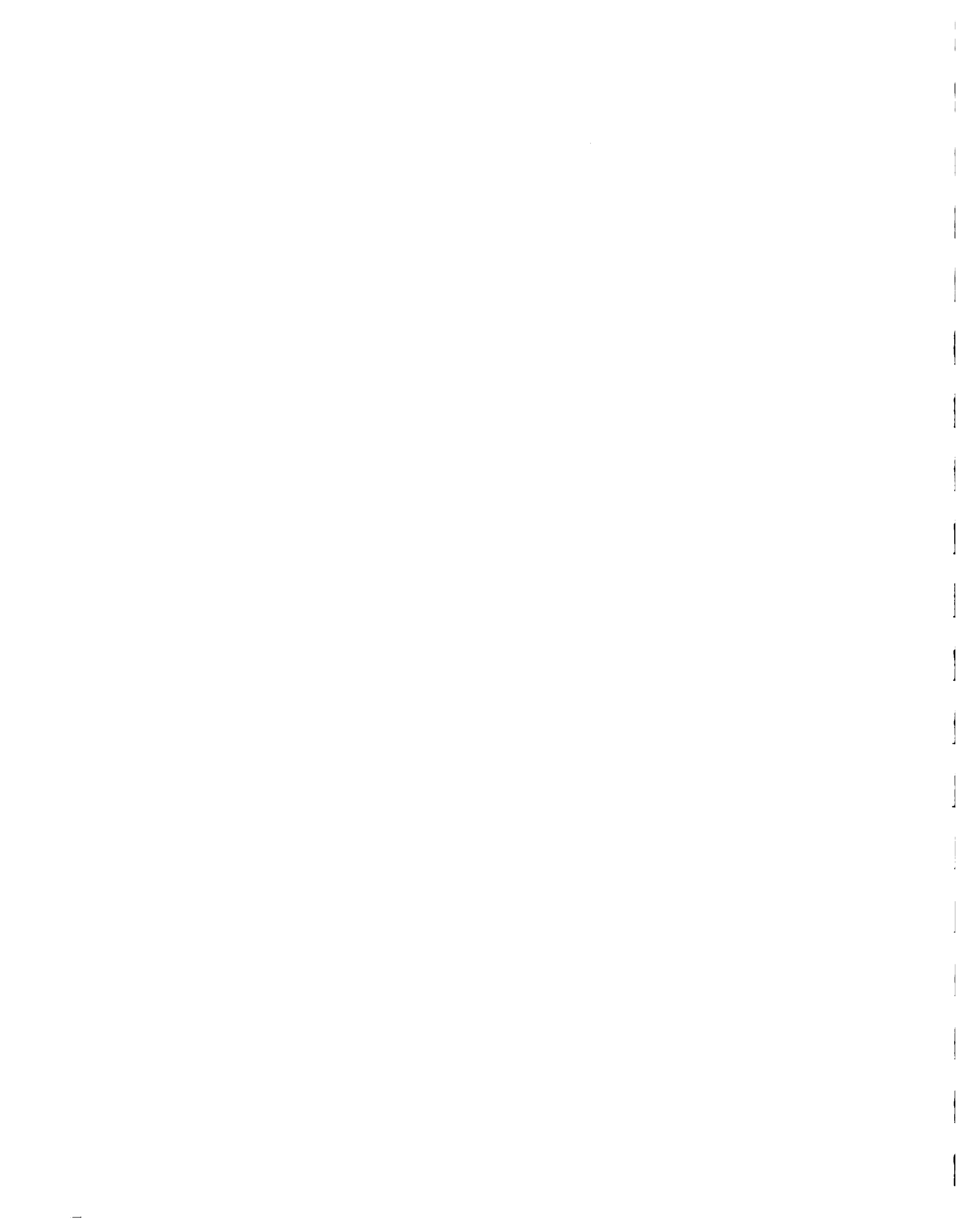
On this \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_, at \_\_\_\_\_ in the County of \_\_\_\_\_ State of Texas, I, \_\_\_\_\_ Minister of the Gospel, do hereby certify that \_\_\_\_\_ of the County of \_\_\_\_\_ State of Texas, and \_\_\_\_\_ of the County of \_\_\_\_\_ State of Texas, were by me joined together in Holy Matrimony according to the rites and ceremonies of the \_\_\_\_\_ and the laws of the State of Texas, and that the same were observed and performed in full accordance with the rites and ceremonies of the \_\_\_\_\_ and the laws of the State of Texas.

Witness my hand and the seal of my office at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_.

\_\_\_\_\_ Minister of the Gospel

Given under my hand and the seal of my office at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_.

\_\_\_\_\_ Minister of the Gospel



GRENADA  
 TABLE 3.1.4.6-5  
 CRUDE ESTIMATES OF FOOD AVAILABILITY IN GRENADA

COMMODITY	LOCAL PROD. (KG)	IMPORTS	EXPORTS & RE-EXPORTS	FOOD SUPPLY (KG)	QTY./PERSON/DAY (KG)
BREADFRUIT	282861			282861	0.008
PLANTAIN	653034		97798	555236	0.015
MANGO	570131			570131	0.016
ORANGE	1307733	181094	101	1488726	
(INCLUDE JUICE)	1934629	90169	91	2024707	0.042
GRAPEFRUIT	150606			150106	
(INCLUDE JUICE)					0.057
PAWPAW					0.0042

SOURCE: Food and Nutrition Surveillance System  
 Crude Estimates of Food Availability, Grenada 1986  
 Grenada Food and Nutrition Council





GRENADA  
TABLE 3.1.5-1  
LIVE SHEEP AND GOATS EXPORTED TO TRINIDAD

YEARS	SHEEP	GOATS	TOTAL
1980	-	-	4205
1981	-	-	6384
1982	-	-	5753
1983	3084	1534	4618
1984	3086	1241	4327
1985	883	352	1235
1986	1462	321	1783

SOURCE: Ministry of Agriculture, 1987



GRENADA  
TABLE 3.1.5-2  
LIVESTOCK POPULATION BY SPECIES IN  
SELECTED YEARS

LIVESTOCK	1961	1971	1982
CATTLE	7999	6600	4168
SHEEP	6248	9000	5442
GOATS	5673	7500	2816
PIGS	8301	15000	2747
POULTRY	106400	250000	31069

SOURCE: Grenada Abstract of Statistics, 1979  
adjusted by survey Information, 1982

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GRENADA  
 TABLE 3.1.5-3  
 NO. OF ANIMALS SLAUGHTERED IN SELECTED YEARS

LIVESTOCK	YEARS			
	1961	1970	1972	1984
CATTLE	1337	2044	1128	675
SHEEP	848	210	29	18
GOATS	290	70	15	12
PIGS	1340	2170	1072	692

SOURCE: Grenada Abstract of Statistics, 1979 and  
 Ministry of Agriculture, 1982 and 1984



GRENADA  
TABLE 3.1.5-4  
MILK AND MILK PRODUCTS IMPORTED  
EC (000)

PRODUCTS	YEAR							
	1984		1983		1982		1981	
	LB.	VALUE	LB.	VALUE	LB.	VALUE	LB.	VALUE
WHOLE MILK	58.2	39.5	83.3	59.4	92.3	64.5	72.9	59.
POWDERED MILK	1322.5	2564.3	1590.2	2068.0	1999.1	4700.9	1757.5	3576.
EVAPORATED MILK	300.5	373.2	544.5	691.6	575.6	754.1	668.2	826.
CONDENSED MILK	740.0	1000.7	819.9	1221.6	977.5	1299.6	1027.8	1459.
TOTAL	2421.2	3977.7	3037.9	4040.6	3644.5	6819.1	3526.4	5922.

SOURCE: Ministry of Agriculture





GRENADA  
TABLE 3.1.5-5  
LIVESTOCK PRODUCT IMPORTS AND VALUE

YEAR	LB (m)	EC\$ (m)
1979	10.6	15.2
1980	10.8	15.4
1981	8.6	12.2
1982	8.6	14.2
1983	7.9	10.5
1984 (9 months)	5.9	8.6

SOURCE: Central Statistical Office. 1984



GRENADA  
TABLE 3.1.5.3-1  
LOCAL LIVESTOCK PRODUCTION IMPORTS AND ESTIMATED DEMAND

PRODUCTS	LOCAL* LB. (000)	IMPORTS** LB. (000)	DEMAND* LB. (000)
CHICKEN	42.7	38429.0	3885.6
LAMB/MUTTON	355.6	355.6	711.2
BEEF	310.2	446.4	756.6
PORK	274.3	447.6	721.9
MILK	876.6	5868.0	744.6

\* Estimated Production from 1983 CARDI Small Farm Systems Research Project, Vol. III. Degree of self-sufficiency percentages for Leeward Islands.

\*\* Source: Ministry of Agriculture, 1984

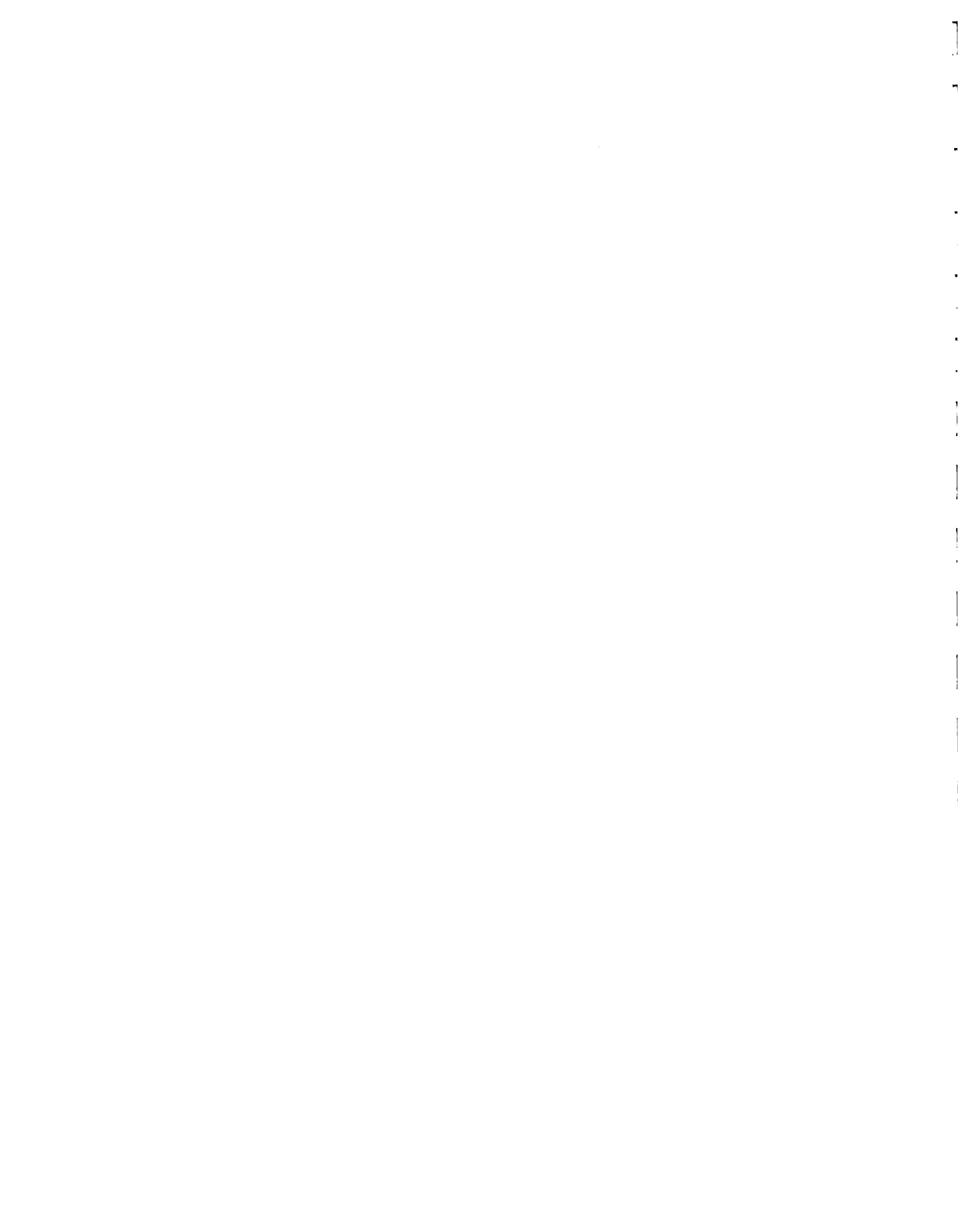


GRENADA  
 TABLE 3.1.5.3-2  
 LIVESTOCK PRICES (1987) PAID TO FARMER FOR CARCASSES  
 LIVE ANIMALS FOR SLAUGHTERING

PRODUCT	UNIT	EC\$
GOATS/LAMB/MUTTON CARCASS	lb.	4.00
GOAT/LAMB/MOTTON (LIVE)	lb.	1.80
CATTLE CARCASS	lb.	4.00
LIVE CATTLE	lb.	2.00
PIG CARCASS	lb.	3.00
LIVE PIG	lb.	1.80
WHOLE CHICKEN CARCASS	lb.	2.50
MILK	L	1.80
SKINNED PIG CARCASS*	lb.	2.75
UNSKINNED PIG CARCASS*	lb.	2.50

\*Price paid to farmer at Meat Processing Plants

SOURCE: Mr. K. I. Rush, Ministry of Agriculture and  
 Farmer Information given during Farm Visits.  
 November, 1987



GRENADA  
 TABLE 3.1.5.3.-3  
 DOMESTIC ANIMAL PRICES (1987)  
 FOR BREEDING STOCK

ANIMAL CATEGORIES	EC\$
BULLS	1800-2000
COWS	1800-2000
HEIFERS (2-3 YEARS OLD)	1200-1500
HEIFERS (<2 YEARS OLD)	800-1000
CALVES (WEANED)	600
MATURE FEMAL SHEEP/GOATS	500
LAMBS	125
RAMS (SHEEP/GOATS)	500
SOWS	300-400
YOUNG BOARS	300-400

SOURCE: Mr. K.I. Rush, Livestock Officer,  
 Ministry of Agriculture





A N N E X    I V

**TABLES FOR CHAPTER IV**



GRENADA  
 TABLE 4.3.3.1  
 PURCHASES (LBS) OF FRESH PRODUCE BY ONE 32 ROOM HOTEL  
 ROOM HOTEL IN GRENADA AND PROJECTIONS TO SUB-SECTOR

-----  
 Purchases Case Study Hotel Projected Consumption of Sub-sector (850 rooms)  
 -----

TYPE PRODUCT	MONTH	YEAR	50% OCCUPANCY	80% OCCUPANCY
MANGOES (1)	60	300	3900	6300
ORANGES (1)	200	1000	13000	21000
GRAPEFRUIT (1)	400	2000	26000	42000
PAWPAW (2)	200	2400	31200	50400
BANANA (2)	200	2400	31200	50400
CARROTS (2)	40	480	6240	10080
CABBAGE (2)	60	720	9360	15120
TANNIA (2)	80	960	12480	20160
YAMS (2)	80	960	12480	20160
SWEET POTATOES (2)	80	960	12480	20160
EGGPLANT (2)	40	480	6240	10080
CHRISTOPHENE (2)	40	480	6240	10080
-----				
TOTAL (LBS)	1480	13140	170820	275940
-----				
TOTAL (KG)	673	5973	77645	125427
-----				

SOURCE: IICA case study purchases of fresh product by 32 room hotel  
 (1) Seasonal: 5 months  
 (2) Year round production

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GRENADA

TABLE 4.3.4-1

DOMESTIC SALES OF FRESH PRODUCE BY MNIB 1984 - 1986, LB AND EC\$

GROUP	QUANTITY	VALUE	QUANTITY	VALUE	QUANTITY	VALUE	QUANTITY	VALUE				
VEGETABLE	250279	27	351682	54	295940	27	440738	55	262705	26	384819	53
FRUITS	243985	26	90362	14	612187	57	223010	28	579059	58	214603	30
ROOTS	385102	40	158663	24	120947	11	80268	10	102336	10	78830	11
GRAINS/PULSES	23873	3	29920	5	32929	3	37710	4	37852	4	23576	3
CONDIMENTS	38240	4	18631	3	24747	2	23431	3	21717	2	22029	3
TOTAL	941479	100	649258	100	1086750	100	805157	100	1003669	100	723857	100

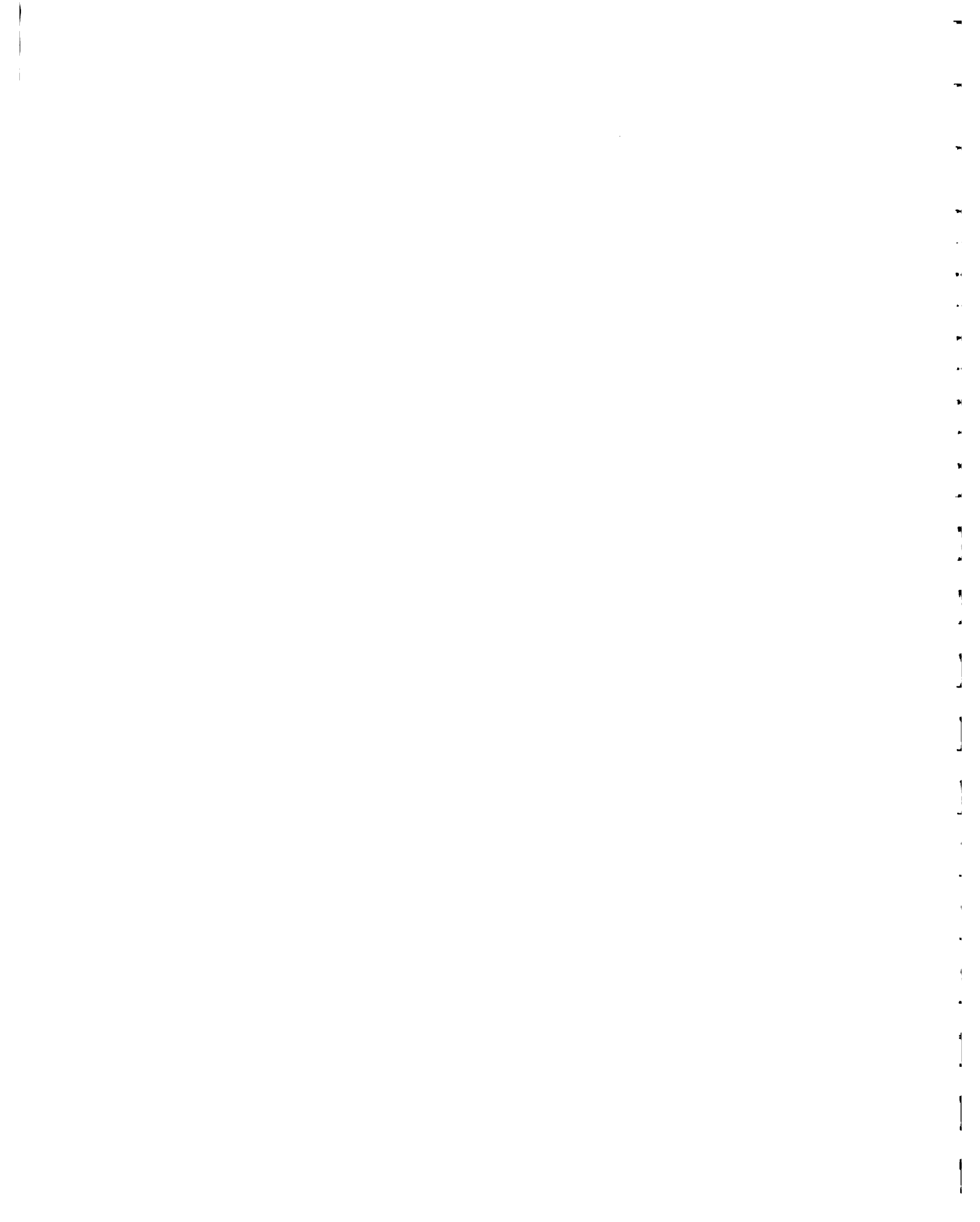
SOURCE: MNIB



GRENADA  
TABLE 4.3.4-2  
MNIB SPOILAGE OF FRESH PRODUCE  
(1984-1986)

GROUP	1984		1985		1986	
	LBS	%	LBS	%	LBS	%
VEGETABLES	32449	29	51263	42	30361	34
FRUITS	24189	22	56054	46	52027	59
ROOTS	50759	45	12324	10	4552	5
GRAINS/PULSES	2129	2	653	1	925	1
CONDIMENTS	2767	2	589	1	284	< 1
TOTAL	112293	100	120883	100	88149	100
TOTAL SALES	941479		1086750		1003669	
SPOILAGE % SALES	0.12		0.11		0.09	
TOTAL PURCHASES	1226478		1267601		987847	
SPOILAGE % PURCHASES	0.09		0.1		0.09	

SOURCE: MNIB



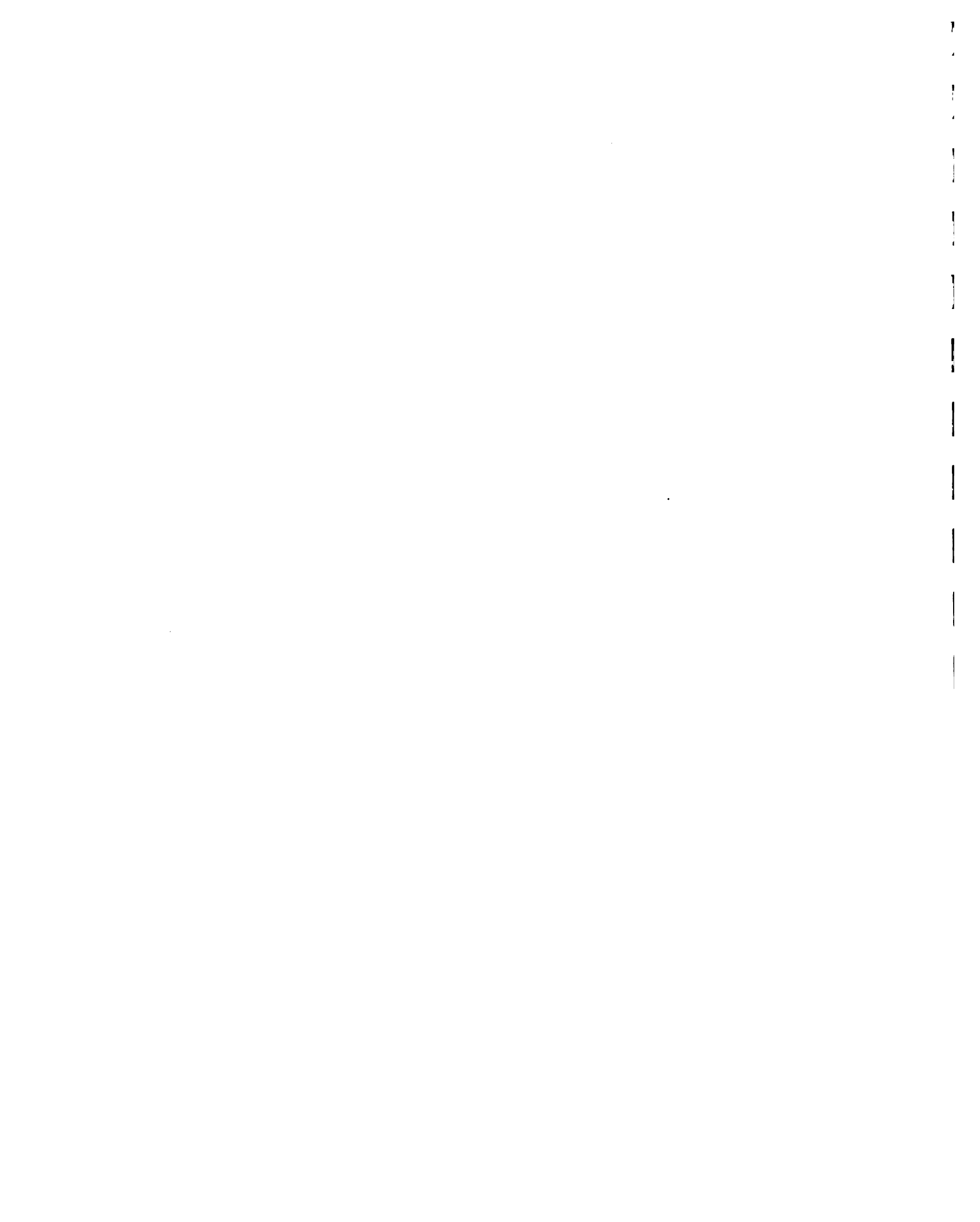


GRENADA  
TABLE 4.3.6-1  
IMPORTS OF FOOD INTO GRENADA BY COMMODITY OR  
GROUP OF COMMODITIES, 1985

COMMODITY	MT	'000 EC\$	% TOTAL
<b>VEGETABLES:</b>		1050	2
Potatoes	662	576	
Onions	325	336	
Carrots	12	17	
Garlic	25	119	
<b>FRUITS:*</b>		1150	1
Fresh (temperate)		171	
Juices		724	
Preserved		254	
<b>GRAINS/PULSES:</b>		2683	5
Rice	1694	2390	
Peanuts	17	55	
Blackeye peas	2	6	
R.K. beans	2	6	
Peas & beans	152	224	
<b>MILK &amp; PRODUCTS</b>	2660	6889	14
<b>MEAT:</b>		15508	31
Fresh pork	18	111	
Pickles port	114	451	
Ham	113	914	
Bacon	23	189	
Mutton	9	79	
Fresh beef	86	550	
Pickled beef	67	394	
Poultry meat	2527	5855	
Meat & products	2495	6961	
<b>FISH &amp; PRODUCTS</b>	555	2865	6
<b>OTHER AGRICULTURE</b>		712	1
<b>TOTAL AGRICULTURE</b>		30333	61
<b>SUGAR</b>	3930	2982	6
<b>FLOUR</b>	179	217	<
<b>EDIBLE FATS/OILS</b>	603	2923	6
<b>OTHER PROCESSED FOODS</b>		12968	26

\* 1984 DATA

NOTE: 1986 import data is available for all commodities



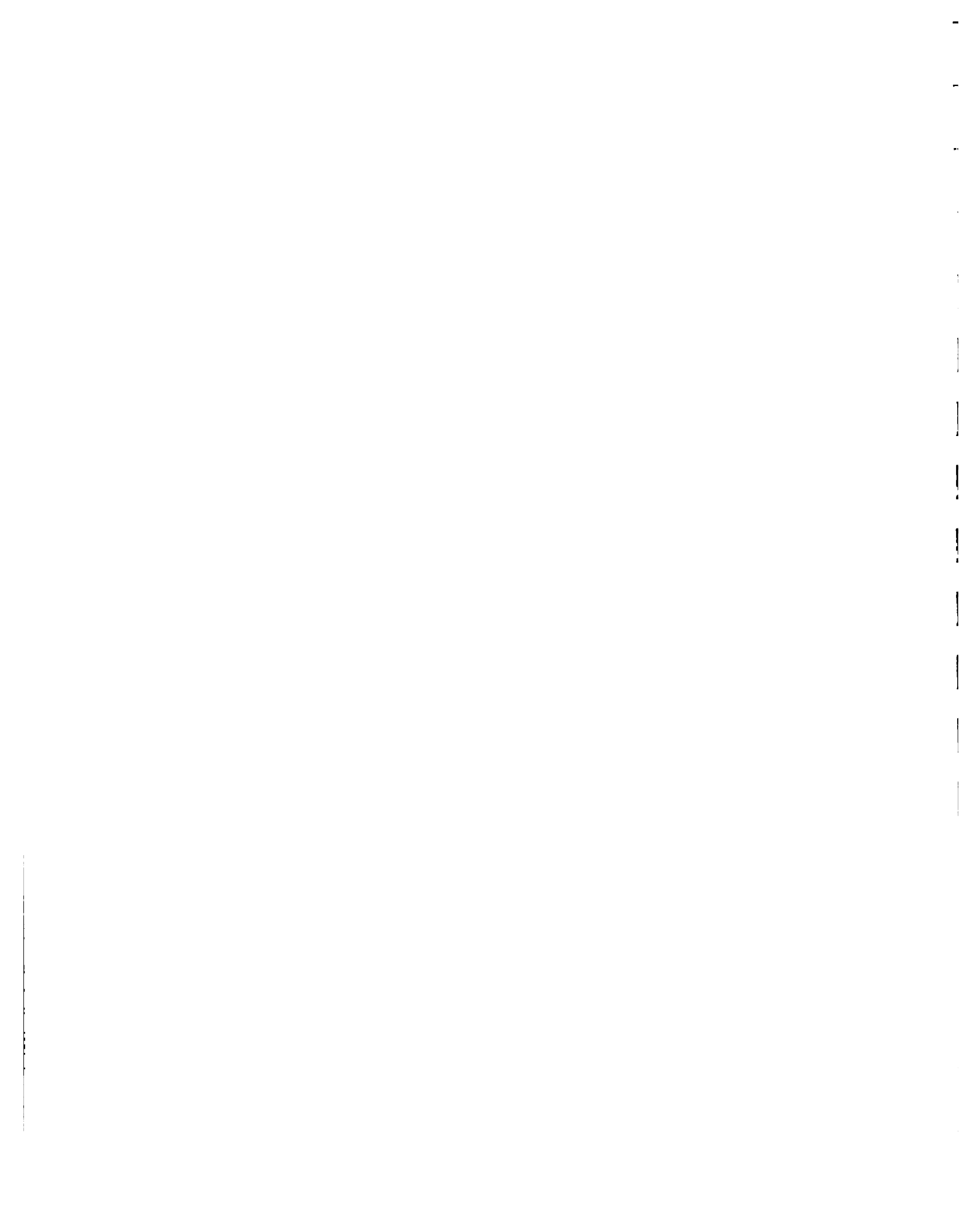
GRENADA  
TABLE 4.4.1-1  
EXPORTS OF TRADITIONAL COMMODITIES FROM GRENADA  
1976 - 1985

COMMODITIES	1977		1978		1979		1980		1981	
	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)
BANANA	14264	8505664	14051	9002471	13798	9819836	11819	10672712	11201	9872056
COCOA	2129	8837940	2360	18039941	2441	27318780	1810	18193960	2672	19114677
NUTMEG	2639	13071564	2787	14452944	2056	10791328	1801	9851368	1620	8109339
MACE	336	2233196	249	1675833	261	1661739	302	1988630	223	1677387
MINOR SPICES			3	54532	14	329352	6	112286	30	660748

COMMODITIES	1982		1983		1984		1985		1986	
	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)	VOL. (M.T)	VALUE (E.C\$)
BANANA	9835	8942723	8599	8707422	8450	7884462	8007	8649808	7814	10071681
COCOA	2266	13454061	2288	11351277	2001	11645707	2036	12248288		
NUTMEG	1910	8221986	2683	9470488	2250	7006015	2995	8920370		
MACE	315	2418730	410	226581	1410	1472386	203	3547158		
MINOR SPICES	33	737187	49	838794	29	494367	19	364200		

SOURCE: MIN. OF AGRICULTURE STATISTICAL UNIT  
COMMODITY ASSOC'S (G.B.C.S., G.C.A., G.C.N.A., MINOR SPICES CO.OP)



GRENADA  
 TABLE 4.4.1-2  
 COCOA PRODUCTION AND EXPORTS BY VOLUME  
 AND VALUE AND AVERAGE PRICE PER LB  
 PAID TO GROWERS (Year Ending 30 Sept.)

	PRODUCTION (000LB)	EXPORT (000LB)	VALUE OF EXPORTS (E.C\$000)	AVERAGE PRICE/LB PAID TO GROWER (E.C.4\$)
1967	6084	5311	2921	0.38
1968	6230	5487	3190	0.46
1969	6738	6978	4581	0.49
1970	6451	3069	4376	0.51
1971	6319	5462	3214	0.38
1972	5536	6603	3817	0.40
1973	5344	5464	3674	0.44
1974	5260	5167	5240	0.70
1975	5316	5288	7193	0.95
1976	5982	5859	8460	1.05
1977	4703	4694	8838	1.25
1978	5370	5203	18040	1.70
1979	5789	5383	27319	2.40
1980	4689	3991	18194	2.40
1981	5546	5892	19115	2.30
1982	5024	4996	13454	2.06
1983	5219	5045	11351	2.00
1984	4673	4413	11646	1.20
1985	4775	4490	12248	1.20
1986	3815	3607	12401	1.45
1987	3812	3687	10470	1.60



GRENADA  
 TABLE 4.4.1-3  
 PRODUCTION OF NUTMEG AND MACE  
 BY VOLUME (000LB)

YEAR OR PERIOD (to 30 June)	NUTMEG SHELLED EQUIVALENT	MACE CURED EQUIVALENT
1951 - 1955 AVERAGE	5021	692
1956 - 1960 AVERAGE	1193	176
1961 - 1965 AVERAGE	1548	238
1966 - 1970 AVERAGE	2781	398
1971 - 1975 AVERAGE	4027	540
1976 - 1980 AVERAGE	5178	660
1979	5129	625
1980	5486	648
1981	5301	532
1982	6158	503
1983	4796	331
1984	5036	433
1985	4679	366
1986	5149	474
1987	6019	680





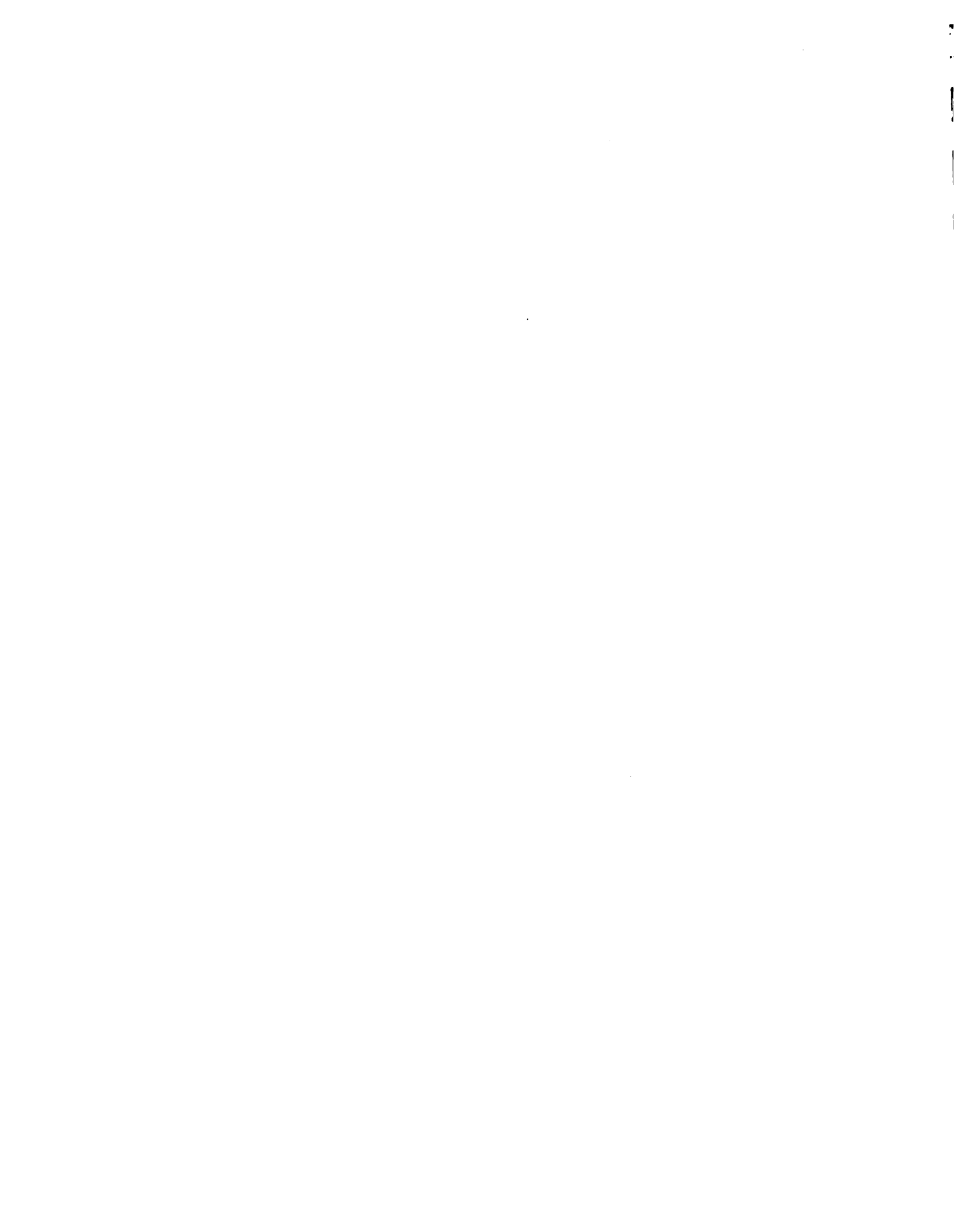
GRENADA  
 TABLE 4.4.1-4  
 EXPORTS OF NUTMEG AND MACE BY VOLUME  
 BY VOLUME (OOOLB) & VALUE  
 (Year Ending 30 June.)

	VOLUME		VALUE		TOTAL
	NUTMEG	MACE	NUTMEG	MACE	
1970	3228	374	3199	597	3796
1971	3736	521	3262	721	3983
1972	4348	715	3348	843	4191
1973	2888	629	2786	1018	3804
1974	3015	453	5744	1802	7546
1975	2645	222	7002	1168	8170
1976	6529	764	12339	2432	14771
1977	5819	741	13072	2233	15305
1978	6145	549	14453	1676	16129
1979	4533	576	10791	1662	12453
1980	3970	666	9851	1989	11840
1981	3573	492	8074	1676	9750
1982	4211	695	8222	2419	10641
1983	5916	903	9470	2266	11736
1984	4962	309	7006	1472	8478
1985	6603	447	8920	3547	12467
1986	7531	486	16794	3946	20740
1987	5284	495	32658	5630	38288

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GRENADA  
 TABLE 4.4.1-5  
 EXPORTS OF BANANAS BY  
 VOLUME AND VALUE

	VOLUME (m lb)	VALUE (\$000)
1961	26.4	1498
1962	27.5	1217
1963	32.8	1726
1964	30.9	1845
1965	46.3	2276
1966	46.9	2579
1967	57.4	3535
1968	59.9	3864
1969	50.5	3252
1970	42.2	2504
1971	31.3	1767
1972	29.2	1558
1973	22.7	1966
1974	19.7	3467
1975	28.9	6526
1976	33.8	7665
1977	30.9	8639
1978	31.5	9314
1979	30.9	9820
1980	26	10673
1981	24.7	9872
1982	21.7	89427
1983	18.9	87074
1984	18.6	78845
1985	17.6	86498



GRENADA  
 TABLE 4.4.1-6  
 EXPORT OF MINOR SPICES 1980-1984  
 BY LBS, PRICE PER LB AND VALUE

YEAR	CINNAMON			CLOVES			CLOVE STEMS			PIMENTO & OTHERS			TOTAL	
	LBS.	AV\$/LB	VALUE	LBS.	AV\$/LB	VALUE	LBS.	AV\$/LB	VALUE	LBS.	AV\$/LB	VALUE	LBS.	VALUE
1980	3325	5.48	18221	8896	10.06	89494	1602	2.08	3332	101	7.62	770	13924	111817
1981	17484	6.42	112247	46630	11.27	525520	5451	1.76	9594	1444	8.09	11682	71009	659043
1982	14804	6.97	103184	48621	12.88	626238	3979	1.83	7282	443	9.56	4235	67847	740939
1983	32977	6.99	230509	43170	12.74	549986	31042	1.22	37871	2793	6.58	18378	109982	836744
1984	25185	6.95	175036	25362	11.25	285323	13200	1.41	18612	2031	6.57	13344	65778	492315



GRENADA  
 TABLE 4.4.2-1  
 EXPORT OF AGRICULTURE COMMODITIES TO TRINIDAD &  
 TOBAGO BY TRAFFICERS FROM GRENADA, 1984-1986  
 (in Metric Tonnes)

COMMODITY	1984	1985	1986
<b>FRUITS:</b>			
Soursop	1030	1103	1141
Mangoes	623	709	583
Bananas	881	905	811
Plantain	279	335	368
Tamarind	176	172	252
Sugar Apple	61	120	35
PawPaw	126	96	111
Lemon	31	21	21
Limes	108	39	62
Grapefruit	14	25	33
Oranges	18	1	3
Damson	105	3	83
Sapodillas	415	255	368
Plums	396	255	50
Mammy Apples	12	7	7
Avocadoes	536	563	503
Golden Apples	515	637	376
<b>SUB TOTAL</b>	<b>5326</b>	<b>5246</b>	<b>4807</b>
<b>ROOTS/VEGETABLES:</b>			
Yams	62	22	66
Dasheen	111	93	36
Pumpkins	68	77	94
<b>SUB TOTAL</b>	<b>241</b>	<b>192</b>	<b>196</b>
<b>TOTAL</b>	<b>5567</b>	<b>5438</b>	<b>5003</b>





GRENADA  
TABLE 4.4.3-1  
NON-TRADITIONAL EXPORTS OF FRESH PRODUCE BY MNIB

COMMODITY	1979		1980		1981		1982		1983	
	KG	EC\$	KG	EC\$	KG	EC\$	KG	EC\$	KG	EC\$
MANGO	644	424	14417	9515	0	0	19718	13014	13127	27725
BREADFRUIT	0	0	0	0	0	0	0	0	0	0
AUBERGINE	7641	6725	2145	9888	28140	24763	25998	22559	1452	958
PUMPKIN	0	0	664	438	0	0	0	0	15009	9905
CALLALOO	0	0	0	0	0	0	0	0	0	0
OTHERS	0	0	0	0	0	0	0	0	2487	10560
FLOWERS	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>8285</b>	<b>7149</b>	<b>17226</b>	<b>19841</b>	<b>28140</b>	<b>24763</b>	<b>45716</b>	<b>35573</b>	<b>32075</b>	<b>49148</b>



A N N E X V

TABLES FOR CHAPTER V



GRENADA  
TABLE 5.1-1  
INDEX OF COST COMPETITIVENESS

ITEM	DOMINICA	GRENADA	ST. LUCIA	ST. VINCENT	DOM. REPB.	BARBADOS	FLORIDA
LAND							
Purchase	16.0	18.0	22.0	22.0	2.0	20.0	100.0
Lease	16.0	40.0	12.0		12.0	20.0	100.0
LABOUR							
Women	11.5	10.0	13.5	8.0	6.0	44.0	100.0
Men	18.0	12.5	18.0	11.5	6.0	44.0	100.0
TRANSPORT							
Diesel	224.0	175.0	225.0	208.0	95.0	183.0	100.0
Gasoline	282.0	240.0	240.0	255.0	101.0	229.0	100.0
Contract truck	106.0	105.0		105.0	63.0	94.0	100.0
HERBICIDES							
Gramoxone	39.0	56.5	49.0	52.0	38.0	72.0	100.0
Roundup	159.0	154.0	149.0	116.0	96.0	117.0	100.0
FUNGICIDES							
Benlate	116.0	83.0	84.0	77.0	79.0	127.0	100.0
Cupravit		86.0	85.0		100.0	165.0	100.0
Dithane		382.0		237.0		294.0	100.0
INSECTICIDES							
Melathion	133.0	145.0	134.0	106.0	267.0	269.0	100.0
Sevin	114.0	131.0	71.0	168.0	118.0	151.0	100.0
FERTILIZER							
Banana form	112.5	169.0	156.5	144.0	119.0	300.0	100.0
Amm. Sulfate	177.0	152.5	131.0	142.0	110.0	374.0	100.0
EQUIPMENT							
Cutlass	113.0	66.0	65.0	69.0	64.0	48.0	100.0
Pruning shear	128.0	56.0	72.0	76.0	64.0	80.0	100.0
Knap sack spr.	89.0	147.0	73.0	70.0	93.0	102.0	100.0
Mist blower	116.0	169.0	77.0	108.0	34.0	133.0	100.0
ALL ITEMS							
Index		119.9				143.3	100.0
ALL COUNTRIES							
Index	117.4	111.5	98.8	102.0	80.8	143.3	100.0

SOURCE: Based on La Gra and Marte, Proposed Strategy for the Development of the Fruit Sub-sector in the Windward Islands, IICA, St. Lucia, 1987

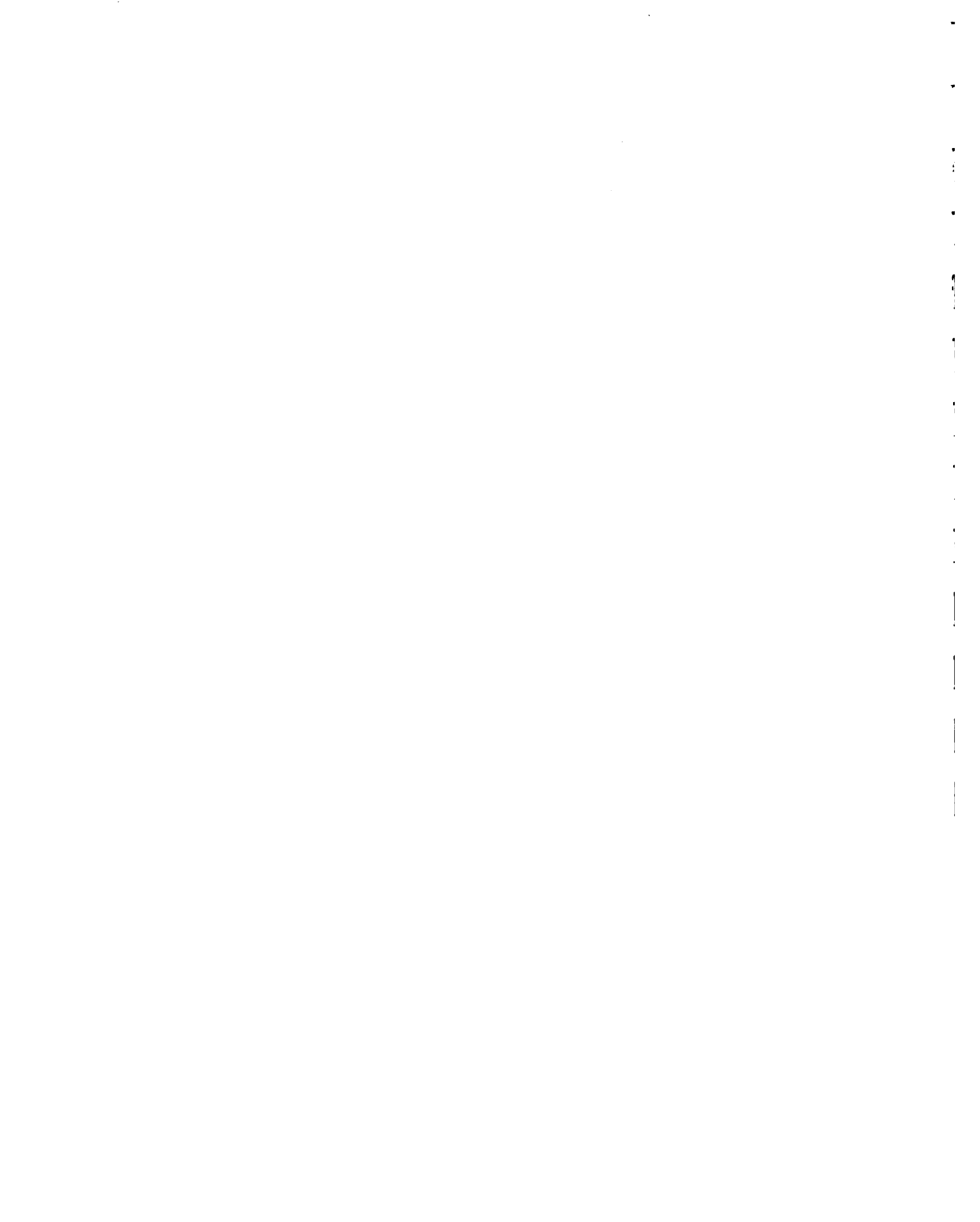
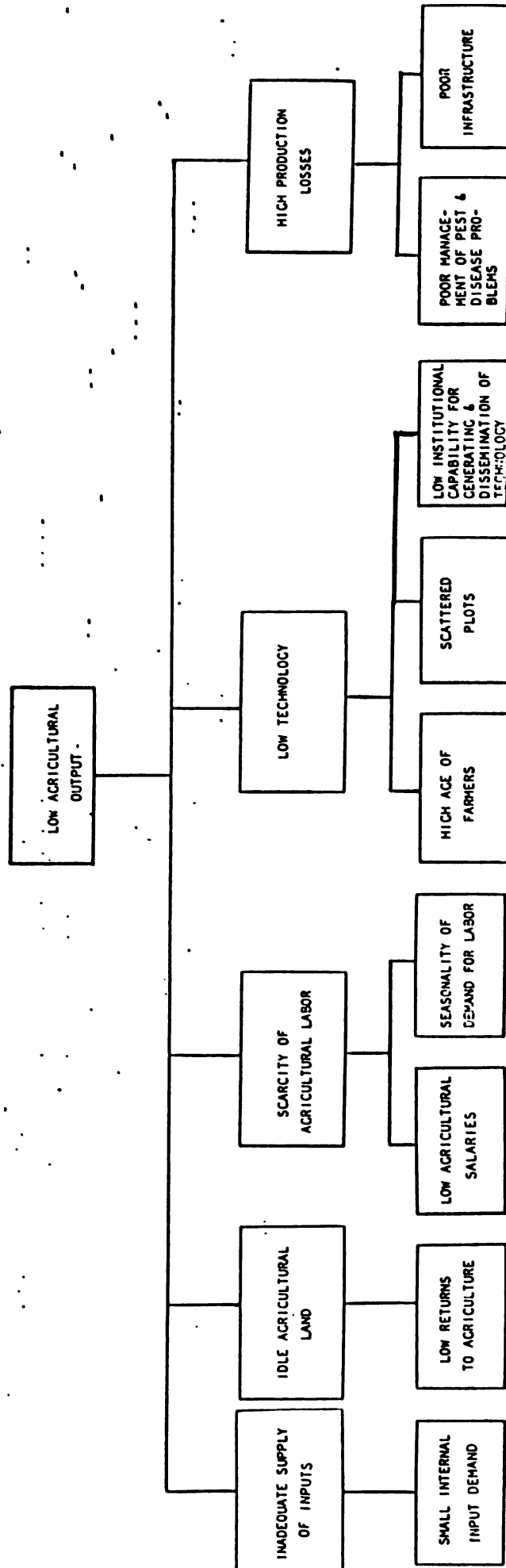


FIGURE 2  
 GRENADA  
 SUMMARY OF MAIN CONSTRAINTS







**FIGURE 3  
GREANDA  
PROPOSED IMPLEMENTATION SCHEDULE**

RECOMMENDATIONS	MONTH									
	6	12	18	24	30	36	42	48	54	60
<b>1.1 Policy and Planning</b>										
a. Development	XXXX	XXXX	XXXX	XXXX	.....	.....	.....	.....	.....	.....
b. Prioritization		XXXX	.....	.....	.....	.....	.....	.....	.....	.....
c. Adopt systems approach	XXXX	.....	.....	.....	.....	.....	.....	.....	.....	.....
d. Low income problem			XXXX							
e. Subregional coordinating										
<b>1.2 Research &amp; Technology Transfer</b>										
a. Applied research programming	XXXX	XXXX	.....	.....	.....	.....	.....	.....	.....	.....
b. Reorganization of extension services	XXXX	XXXX								
<b>1.3 Ag. Support Services</b>										
a. Promotion of integration of Commodity Boards		XXXX	XXXX							
b. Strengthening farmers organizations		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX			
c. Separation of functions of MNIB				XXXX	.....	.....	.....	.....	.....	.....
d. Utilize CATCO services		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
e. Reorganize the Agricultural window of GDB			XXXX							
f. Widen role of Animal Health Assistants	XXXX	.....	.....	.....	.....	.....	.....	.....	.....	.....
g. Support to creation of regional input purchasing			XXXX	.....	.....	.....	.....	.....	.....	.....
h. Strengthen P.P. and A.H.			XXXX	XXXX	XXXX	XXXX	XXXX	XXXX		
<b>1.4 Statutory Measures</b>										
a. Stimulate and support agroindustries				XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
b. Encourage productive use of land			XXXX	XXXX	XXXX	XXXX	.....	.....	.....	.....
<b>2.1 Food Crops and Vegetables</b>										
a. Increase and decentralize the production and distribution of high quality food crops and vegetables planting material		XXXX	XXXX	.....	.....	.....	.....	.....	.....	.....
b. Continue screening of introduction of new varieties and cultivars										
<b>2.2 Fruit Crops</b>										
a. Strengthen operation and management of central propagation unit		XXXX	XXXX							
b. Advance and support the creation of multinational germplasm bank		XXXX	.....	.....	.....	.....	.....	.....	.....	.....
<b>PROJECTS</b>										
a. Strengthen Farmers Organizations	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX				
b. Irrigation		////	////		XXXX	XXXX	.....	.....	.....	.....
c. Rehabilitation of fruit trees		XXXX	XXXX	XXXX	XXXX					



RECOMMENDATIONS	MONTH									
	6	12	18	24	30	36	42	48	54	60
d. Pilot Projects										
- Macadamia nut										
- Papaya										
- Soursop										
- Passion fruit										
- Carambola										
- Asean fruits										
e. Construction of handling and storage facilities					\\\\\\			XXXX	XXXX	
f. Pilot project for ruminants	\\\\\\				XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
g. Support to increased production of existing livestock systems										
h. Reorganization of Carriacou Sheep Project					XXXX	XXXX	XXXX	XXXX	XXXX	
i. Development of commercial grazing pastures					\\\\\\			XXXX	XXXX	XXXX

\\\\\\ Feasibilities Studies  
 xxxx Project Implementation  
 ..... Institutionalization





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