FAO - NUTRITION COUNTRY PROFILES

GRENADA

FOOD AND AGRICULTURE ORGANIZATION

OF THE UNITED NATIONS

Note for the reader

The objective of the Nutrition Country Profiles (NCP) is to provide concise analytical summaries describing the food and nutrition situation in individual countries with background statistics on food-related factors. The profiles present consistent and comparable statistics in a standard format. This pre-defined format combines a set of graphics, tables and maps each supported by a short explanatory text. Information regarding the agricultural production, demography and socio-economic level of the country are also presented.

In general, data presented in the NCP are derived from national sources as well as from international databases (FAO, WHO...).

Technical notes giving detailed information on the definition and use of the indicators provided in the profile can be obtained from ESNA upon request. An information note describing the objectives of the NCP is also available.

Nutrition Country Profile of Grenada

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SUMMARY

Data on anthropometric measurements of children are limited in Grenada. Figures (clinic data) for undernutrition (weight for age) among children 0-5 years, in recent times, are only available for the years 1997 (4.3%) and 1998 (2.8%), and indicate a decrease over the period. Overweight (weight for age) decreased from 4.0% in 1990 to 1.0% in 1996 (CFNI, 2000).

*In a 1976 study carried out among children 0-5 years, 39.7% were found to be malnourished (weight-for-age) based on the "Gomez classification". Of the total number of children measured 1.6% were severely malnourished, 9.0% were moderately malnourished, and 29.1% were mildly malnourished. The prevalence of malnutrition increased with age, while the majority of malnourished children were from the costal areas of Victoria and Gouyave (**Table 4a**). These limited bits of information seem to suggest that severe malnutrition, for a long time, has not been a major problem in Grenada. Fairly high levels of mild to moderate malnutrition existed in the 1970s, but no information was found to confirm whether this was still the case.*

*Grenada is faced with the problem of iron deficiency anaemia. Although this problem is most common in pregnant and lactating women, and in pre-school children, the most recent survey indicates that iron deficiency is also present among children 6-14 years and among persons in the age groups 15-44 years and 45 years and older (**Table 5**). Approximately 56% of the children 0-5 years are anaemic. There are more anaemic females (63.4%) than males (54.8%) in the 6-14 years age group, while in the 15-44 years age group the problem of anaemia is greater among the women (52.9%) than among the men (19.0%). In comparison to a 1985 study (CFNI, 1986), the prevalence of anaemia in the four age groups (0-5, 6-14, 15-44 and >45 years) appears to have increased. However, figures from the Ministry of Health for 1993 showed a prevalence of 58.5% for anaemia among pregnant women, a significant decrease from 73.7% in 1984, reported by the same source. Interestingly a 1975 study (Gueri, 1976) reported anaemia in 51% of pregnant women.*

Data on the consumption pattern of Grenadians showed that meat and meat products accounted for the largest proportion of daily iron. However, among the poorest quintile counter flour (not fortified) provides the highest proportion of dietary iron. The poor are therefore more vulnerable to iron deficiency as they appear to consume less of the iron-rich foods from animals. Given the sharp increase in the contribution of fat to dietary energy supply between 1964-65 (22.6%) and 1996-98 (30.7%), it should not be surprising to find a high prevalence of overweight and obesity in the population. However, no anthropometric data are available to substantiate this view.

No data are available on the proportion of the population living below the poverty line. However, 73% of the population live in rural areas, and are likely to make up more of the group living in poverty than those living in urban areas. Economic access to food, especially among the poor/unemployed, may be playing a major role in level of some of the nutritional problems that the country faces.

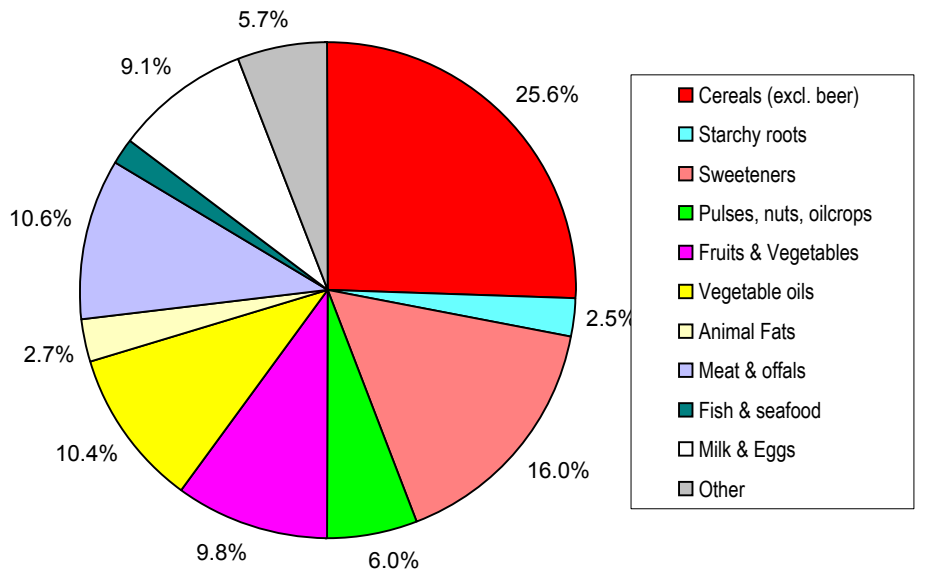
TABLE 1: GENERAL STATISTICS OF GRENADA

Last updated: 27/08/2003

Indicator (§)	*Year*	*Unit*	
Land in use for agriculture			
Agricultural land	1995	ha per person	0.130
Arable and permanent crop land	1995	ha per person	0.120
Livestock			
Cattle	1996-98	thousands	4
Sheep & goats	1996-98	thousands	20
Pigs	1996-98	thousands	5
Chickens	1996-98	millions	0
Population			
Total population	2000	thousands	94000
0-5 years	2000	% of total pop.	...
6-17 years	2000	% of total pop.	...
18-59 years	2000	% of total pop.	...
>= 60 years	2000	% of total pop.	...
Rural population	2000	% of total pop.	62.8
Annual population growth rate, Total	2000-2005	% of total pop.	...
Annual population growth rate, Rural	2000-2005	% of rural pop.	...
Projected total population in 2030	2030	thousands	101000
Agricultural population	2000	% of total pop.	...
Population density	1995	pop. per km^2	270.6
Level of Development			
GNP per capita, Atlas Method	2000	current US$	3720
Human Development Index rating (new)	2000	min[0] - max[1]	0.747
Incidence of poverty, Total	...	% of population	...
Incidence of poverty, Rural or Urban	...	% of population	...
Life expectancy at birth (both sexes)	2000	years	
Under-five mortality rate	2000	per 1,000 live births	26
Food Trade			
Food Imports (US $)	1996-98	% of total imports	19.6
Food Exports (US $)	1996-98	% of total exports	58.5
Cereal Food Aid (100 t)	1996-98	% of cereals imports	...
Indices of Food Production			
Food Production Index	1996-98	1989-91=100	93.5
Food Production Index Per Capita	1996-98	1989-91=100	91.8

Indicator (§)	*Year*	*Unit*	
G. Average Food Supply			
1. **Dietary Energy Supply (DES)**	1998-2000	kcal/caput/day	2755

Percentage of DES by major food groups



Note: Value not indicated if below 1%

% Energy from:			
2. Protein	1998-2000	% of total energy	10.5
3. Fat	1998-2000	% of total energy	31.9
4. **Proteins**	1998-2000	g/caput/day	72.5
5. Vegetable products	1998-2000	% of total proteins	42.1
6. Animal products	1998-2000	% of total proteins	57.9
H. Food Inadequacy			
1. Total population "undernourished"	1995-97	millions	...
2. % population "undernourished"	1995-97	% of total pop.	...

... no data available

§ see References for data sources used

GRENADA

I. OVERVIEW

1. Geography

Grenada lies at the southern end of the Windward Islands and comprises three sister islands: Grenada, Carriacou, and Petit Martinique. Grenada is situated 12^{o} North and 60^{o} West and about 100 miles north of Venezuela and 90 miles south-west of Barbados. The country's total land area extends for 344 km^2 (133 square miles), and is thickly wooded with many rivers and streams. Grenada is very mountainous, with a backbone of mountains extending from north to south. The steepest slopes to the sea are on the west (the highest point being Mt. St. Catherine, 840 m) and gentler slopes to the east.

The average annual rainfall varies with location averaging 150-200 inches per annum in the driest area; the extreme south-west receives 30 inches of rain per year.

The country is divided into six parishes; St. Patrick, St. Mark, St. John, St. Andrew, St. David and St. George (the most populated parish - 2001) in which the country's capital, St. George's, is located.

2. Population

The 2000 mid-year population of Grenada (including Carriacou and Petite Martinique) was estimated to be 94,000, with 37.2% living in urban areas (UN, 2002). However, the 2001 population was reported to be 102,632 (preliminary figure) in the 2001 population and housing census (CSO, 2002). The population estimate in mid-1995 was 98,500 (50.8% females), with 47,313 persons (48.3%) below the age of 20 years (PAHO/WHO, 1999.a). The World Bank estimated an average annual growth rate of 0.6% over the period 1993-1999.

The population density was 270.6 persons per km^2 in 1995, up from 267.7 in 1990, but below the 1970 figure of 276.5 (FAOSTAT, 1999). The decrease in population density between 1970 and 1995 may have been due, in part, to a declining crude birth rate since 1985 (34 per 1,000 population in 1985 to 23 in 1995) coupled with a relatively stable crude death rate (8.2 per 1,000 population in 1995). Further, there has been a decline in the natural increase in the population between the 1980s (20-26 per 1,000 population) and the 1990s (15-17) (PAHO/WHO, 1999.b). The total fertility rate over the 1996-2000 period averaged 2.8 children per woman of childbearing age compared with the rate over the 1992-1995 period which averaged 3.2. (PAHO/WHO, 1999.a & PAHO, 2002).

The population of Grenada consists primarily of persons of African descent (approximately 90%). The second largest ethnic group in the population are East Indians (3%), followed by Whites (1%). The rest of the population (6%) is made up of Amerindians, Chinese, Portuguese, Syrian/Lebanese and Others (PAHO, 2002)

3. Level of development: poverty, education and health

The 2002 edition of the Health of the Americas report stated that 38% of the population of Grenada is poor, based on a 1998 poverty assessment survey. The report further stated that 135 the population are indigent, and that 20% of the persons living below the poverty line are unemployed. In addition, 51% of the individuals living below the poverty line are below 20 years of age, with 40% of these below 5 years old (PAHO, 2002).

The human development index rating (a composite measurement of the country's achievement in terms of life expectancy, health, knowledge and living standard) for 2000 was 0.747, down from 0.777 in 1997 (UNDP, 2002). Gross national product (GNP) per capita (current US$) was US$ 3,720 in 2001, up from US$3,300 in 1999 (World Bank, 2002). Telecommunications were significantly enhanced between 1992 and 1995, with the most modern services and communication technologies available by the end of that period. The single electricity generating plant was privatised in 1994, and there are plans for expanding its capacity (PAHO/WHO, 1999.a).

In 2000, the government's estimate of the adult literacy rate was 88.6%, with similar rates among males and females (PAHO, 2002). This level of adult literacy represents an increase over 1996, when the rate was estimated at 85%. During the 1994-95 academic year, 3,448 children (1-5 years) were registered in the 73 public pre-schools. In the same year 23,017 students were enrolled in 58 public primary schools staffed by 869 teachers, with a student-to-teacher ratio of 26:1; there were also 16 private primary schools. At the secondary school level, 7,260 students were enrolled in 19 public schools staffed by 381 teachers, with a teacher-to-student ratio of 1:19 in 1994-95 (PAHO/WHO, 1999.b).

The world health report estimated the life expectancy at 69.1 years for males and 75.9 years for females in 1999 (WHO, 2000). Life expectancy in 1995 was estimated at 68 years for men and 72 years for women (PAHO/WHO, 1999.a). Infant mortality rate was estimated at 21 per 1000 live births in 2000, down from 23 in 1998. The mortality rate for children under 5 years was 26 per 1000 live births in 2000 (UNICEF, 2002).

As in the case of most of the other Caribbean countries, chronic nutrition-related diseases have become the leading cause of morbidity and mortality among adults. Diabetes mellitus, hypertension and coronary or cardiovascular diseases and their complications are among the main public health concerns of the country, affecting mostly the elderly (60 years and older). Among the infants, the main causes of morbidity continue to be respiratory tract infections, gastro-enteritis, and diarrhoea. While teenage pregnancy continues to be a concern, between 1992 and 1995 there was a 9.7% decrease in the number, moving from 433 to 391 births (PAHO/WHO, 1999.a).

4. Agricultural production, land use and food security

Agricultural production of traditional crops such as cocoa, nutmeg, and bananas had mixed success between 1992 and 1995. Cocoa production increased by 17%, nutmeg's decreased by 24%, and bananas' decreased by 32%. The combined production of these crops fell by 21.0% between 1996 and 1995, primarily due to a 57% drop in banana production. Other agricultural crops (sugar cane, coconuts, citrus, yams, sweet potatoes) had fairly stable production during the period (PAHO/WHO, 1999.a). Despite the wide variety of crops grown, the country relies heavily on imported foods such as wheat flour and rice. In addition to the crops grown several forms of livestock are also reared, including: cattle, sheep, goats, pigs and chickens in 1996-98. (**Table 1** & FAOSTAT, 1999).

In 1995 the total agricultural land available was 0.13 hectare per person, which included 0.12 hectare of arable and permanent crop/meadow land per person (FAOSTAT,

1999). Approximately 50 Km^2 were regarded as forest area in the year 2000 (World Bank, 2002). No figures were available for the extent of the agricultural population. As a percentage of GDP, agriculture was estimated at 8.1% in 1999 down from 26.2% and 15.4% in 1979 and 1989 respectively (World Bank, 2000). This fall in agriculture's contribution to GDP, is due primarily to decreased production of most of the major food groups coupled with an increase in their importation between 1974-76 and 1998-2000. The foods such as vegetables and oilcrops were noticeable exceptions to this pattern, as local production of these increased over the same period, while their importation decreased (FAOSTAT, 2002).

5. Economy

In 2000, the gross domestic product (GDP) in constant 1990 prices was US$ 333 million, representing a 70.7% increase over the 1995 figure (PAHO/WHO, 1999.a; PAHO, 2002). The GDP in constant 1990 prices was US$ 195.1 million in 1995 (about US$ 1,980 per capita), which represented a 5.3% increase from the 1992 figure (PAHO/WHO, 1999.a). The rate of inflation, measured by the change in consumer price index, was 2.5% in 2000 (PAHO, 2002). Annual inflation averaged 2.6% between 1992 and 1995 (PAHO/WHO, 1999.a). The most buoyant sectors in the economy were construction, communication, manufacturing and banking, which grew 9.2%, 14%, 13%, and 10% respectively in 2000. The gross earnings from tourism moved from US$ 16 million (8.2% of GDP) in 1999 to US$ 19 million (7.5% of GDP) in 2000 (PAHO, 2002). Tourism was the most vibrant sector between 1992 and 1995 - its percentage contribution to the GDP increased by 2.3%, moving from 7.3% to 9.0% (PAHO/WHO, 1999.a). The unemployment rate decreased from 12.5% at the end of the year 1999 to 11% in December 2000. The rate among men was 11%, while among women it was 21%.

Total public sector recurrent expenditure in 1996 was US$ 68.1 million. Health expenditures went from US$ 8.2 million in 1992 to US$ 9.6 million in 1996. In 1996, per capita recurrent health expenditure was US$ 97.10 (PAHO/WHO, 1999.a). The government implemented a structural adjustment program between 1992 and 1994, and during this period the value of government services as a percentage of GDP declined from 19% to 16.6%, decreasing further to 15.9% in 1995 (PAHO/WHO, 1999.b).

The food production index declined between 1979-81 and 1996-98, moving from 121.1 to 93.5, which was 6.5 points lower than the index (100) for the base-year of 1984-86. Imports of major food groups have increased substantially between 1964 and 2000. While some traditional food exports (beverage crops and fruit) have declined, a few non-traditional ones (cereals and alcoholic beverages) have increased since 1979-81 (FAOSTAT, 1999, 2002).

II. THE FOOD AND NUTRITION SITUATION

1. Trends in energy requirements and energy supplies

Between 1965 and 2000, the population of Grenada declined by 3.1%, but the proportion of urban residents increased by 6.3 percentage points. The population is projected to reach 101,000, with more than half living in urban areas, by the year 2030. The per caput dietary energy supply (DES) increased by 40.6% over the period 1965-2000. However, no comparison could be made between food availability and the per caput energy requirements, as no data were available for the latter **(Table 2)**.

Table 2: Total population, urbanisation, energy requirements and dietary energy supplies (DES) per person and per day in 1965, 2000 and 2030

Year	1965	2000	2030
Total population *(thousands)*	97000	94000	101000
Percentage urban *(%)*	30.9	37.2	56.4
Per caput energy requirements *(kcal/day)*	...	...	...
Per caput DES *(kcal/day)* *	1960	2755	__

* Three-year average calculated for 1964-66 and 1998-2000 (*Source*: FAOSTAT)

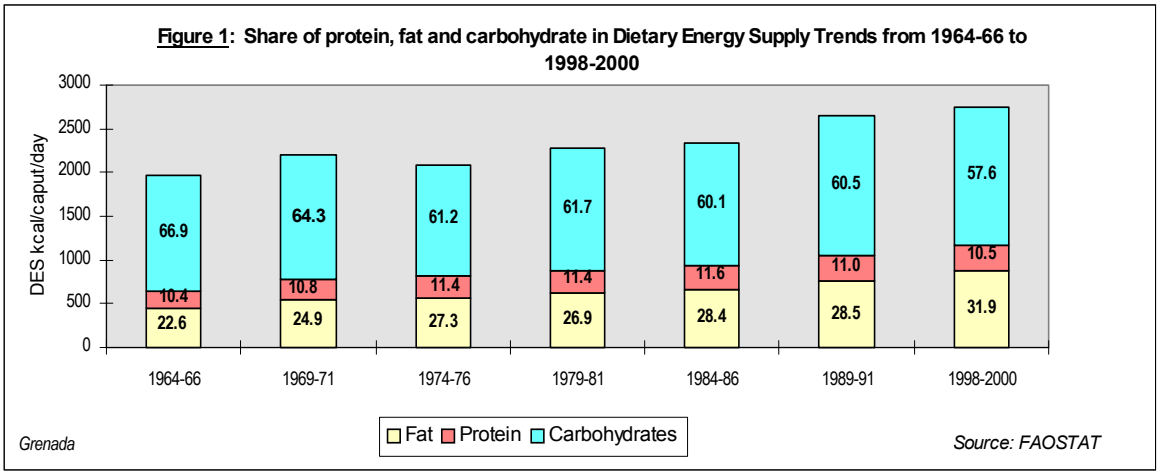
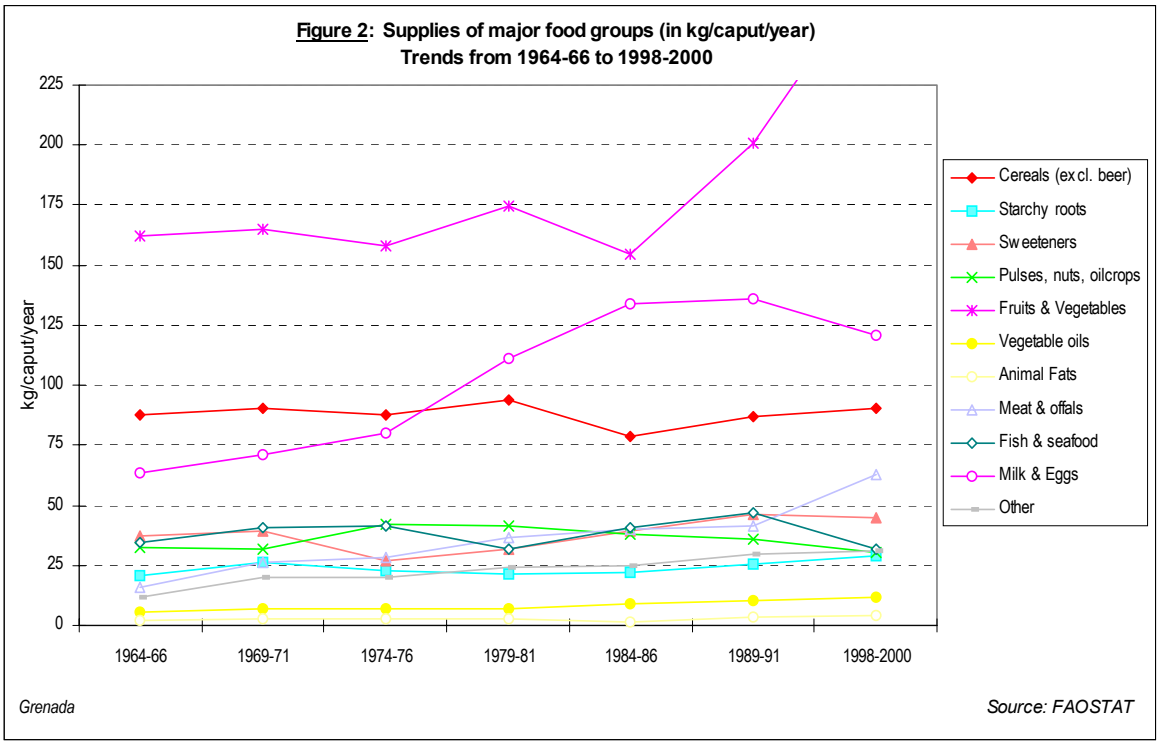


Figure 1 shows the relative contribution of the macronutrients (carbohydrate, protein and fat) to per caput dietary energy supply (DES) between 1965 and 2000. The contributions of protein, fat and carbohydrate as a percentage of DES varied over the period 1964-66 to 2000. Carbohydrate decreased substantially (from 66.9% to 57.6%), while the contribution of fat increased substantially (from 22.6% to 31.9%) over the period. The contribution of protein increased gradually between 1964-66 and 1984-86, then decreased in a similar manner by 1998-2000 to approximately the same level that it was in 1964-66.

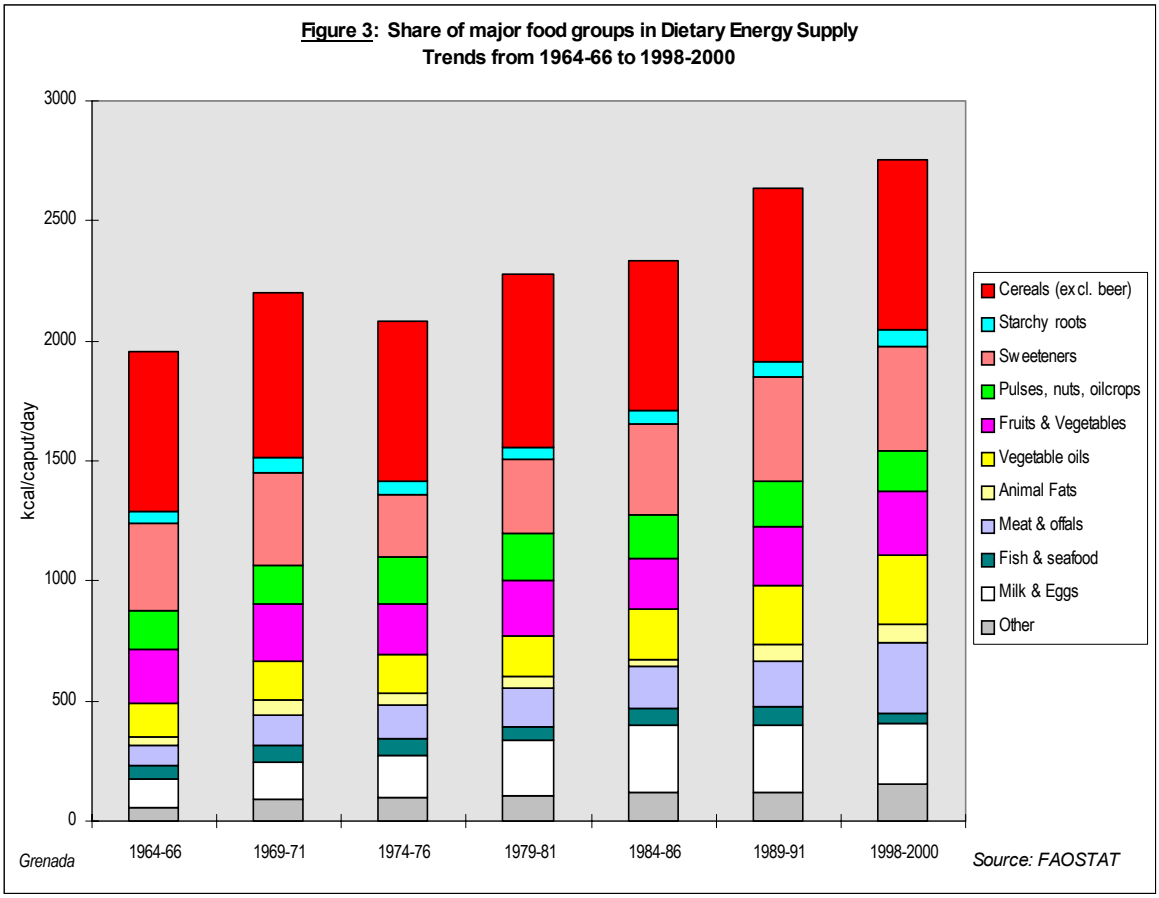
2. Trends in food supplies

Quantity: Between 1964-66 and 1998-2000, the groups fruits and vegetables, and milk and eggs, along with vegetable oils, meat and offals, and animal fats increased significantly in terms of supplies (Kg/caput/year). Fruit and vegetable supplies increased gradually between 1964-66 and 1979-81, declining slightly thereafter until 1984-86 then experienced the sharpest increase from that point up to 1998-2000. This sharp increase in fruit and vegetable availability is due primarily to the large increase in fruit imports, and to a lesser extent increased local vegetable production (FAOSTAT, 1999, 2002). In the case of the milk and eggs group, the 1998-2000 supply level represents a decrease from the 1989-91 level. Meat and offals increased by over 200%, while vegetable oils and animal fats increased by approximately 100% over the period.

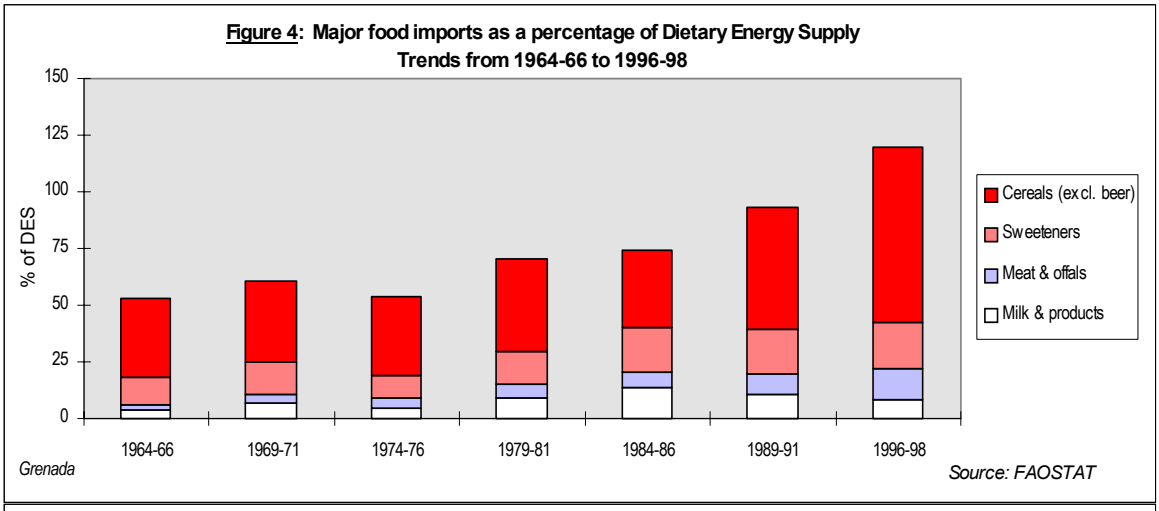
Sweeteners (sugar) and starchy roots increased slightly between 1964-66 and 1998-2000, while cereals, fish and seafood, pulses, nuts, oilcrops, and other foods declined slightly over the same period (**Figure 2**).

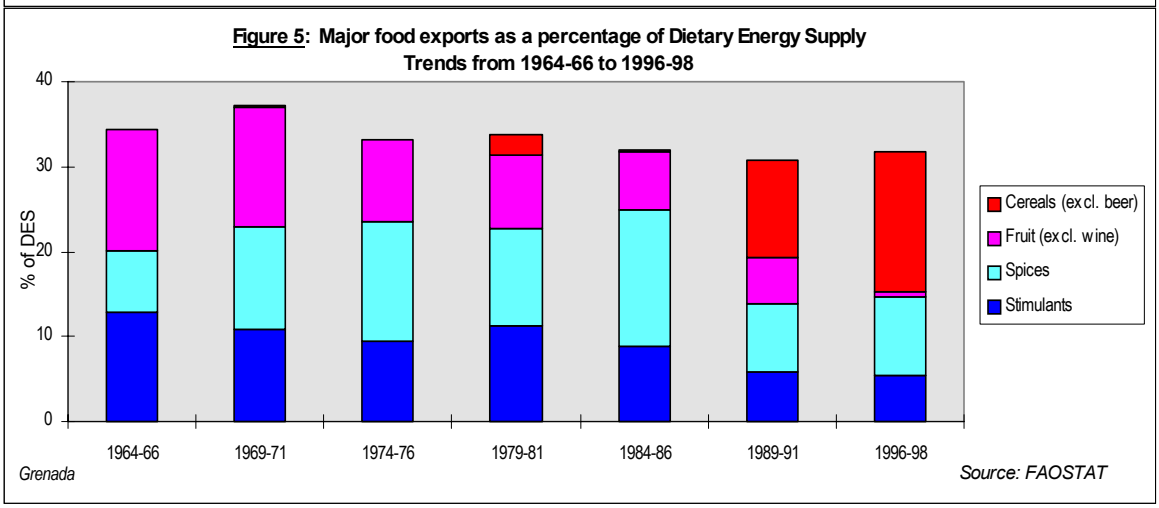


Energy: **Figure 3** shows that cereals remain the major share in DES over the period 1964-66 to 1998-2000, increasing in overall volume as well. The group sweeteners, which also increased in volume over the same period, followed. The share in DES of the other major food groups varied continuously between 1964 and1998, with the third to seventh largest shares interchanging between five of these food groups. Fruits and vegetables occupied third position between 1964-66 and 1974-76, fourth position in 1979-81, and then fifth position between 1984-86 and 1998-2000. Milk and eggs, which occupied sixth position between 1964-66 and 1974-76, occupied third position between 1979-81 and 1989-91, then this group was back to sixth position by 1998-2000. Pulses, nuts, oilcrops, vegetable oils, and meat and offals displayed a similar pattern of shifting position in terms of their share in DES.



Major food imports and exports: **Figure 4** shows the increase in food imports as a percentage of DES since 1964-66, which moved steadily from approximately 55% in 1964-66 to nearly 120% in 1996-98. Cereal imports increased by almost 200%, milk and products increased by over 150%, sweeteners increased by over 100%, and meat and offals increased by more than 600% between 1964 and 1998 (FAOSTAT, 1999). This increased reliance on imported foods to meet the energy needs of the population results in a heavy dependence on international food trade.





The major exports as a percentage of DES varied continuously between 1964 and 1998 (**Figure 5**). One of the primary food exports, spices, fluctuated throughout the period peaking at 16.2% of DES in 1984-86 and declining to 9.2% in 1996-98, compared with its 1964-66 level of 7.3% of DES. Stimulants export (coffee, cocoa beans and tea), as a percentage of DES, decreased steadily over the period (from 12.9% to 5.5%), except for a slight increase of the 1979-81 level (11.2%) over the 1974-76 level (9.5%). The export of fruit, after decreasing steadily between 1964-66 and 1989-91, made a further sharp decline between 1989-91 and 1996-98. Further, the export of cereals increased dramatically between 1979-81 and 1989-91 becoming the largest proportion of DES thereafter.

3. Food consumption

In 1992, as part of the iron fortification of wheat (counter) flour program, quantitative and qualitative baseline data on food purchase and consumption patterns (particularly of iron-rich foods), using a food frequency/dietary recall questionnaire, were collected from 1,726 persons in the country. The iron status of most of the participants was also determined by collecting and analysing blood samples (PAHO/CFNI, 1994). The quantitative dietary history was conducted using a list of commonly consumed foods, many of which were rich in iron. Based on this list, some of the foods consumed by Grenadians included: meat products – fresh and salted beef, fresh and tinned fish, poultry (including backs, necks and wings) and eggs; milk and milk products - fresh and powdered milk, and cheese; fruit and vegetables - green vegetables and fruits (citrus and others); baking flour/products – baking and counter flour,

bread and biscuits; Legumes – beans; and miscellaneous - cornmeal, rice and sugar (PAHO/CFNI, 1994). foods has shown a wide range of food items (PAHO/CFNI, 1994). From the quantitative data collected, only the iron content of the various food items were reported. No data was given in terms of the amount of energy, protein and fat consumed per person per day.

The baseline food consumption data (1992) showed that meat and meat products accounted for the largest proportion of daily iron. Baking flour, which is fortified, provided four times as much iron as counter flour, which was not fortified. No statistical differences were seen in the pattern of food consumption of the different socio-economic groups, but the overall intake of iron was smallest in the lowest socio-economic quintile. While no group had a mean intake below 66% of the RDA (a nutrient intake of a group is adequately if 66% of the RDA is being consumed by 100% of the group), in all the socio-economic groups there were families with intake below this level. This situation was found to be most prevalent in the lowest socio-economic groups and least in the highest. Large families and families with toddlers were also vulnerable with high proportions, 65.7% and 52.1%, respectively, in these groups satisfying less than 66% of their RDA for iron. The contribution of counter flour to dietary iron was greatest for persons in the lowest socio-economic quintile, which indicated that the fortification of counter flour should be an effective way of improving the iron status of this target group (PAHO/CFNI, 1994).

Information on the meal pattern in Grenada is very limited, but a 1982 survey indicated that 42% of the families surveyed had three meals per day, and 39% had four meals (ESN - NCP, 1988). As a part of the Caribbean it is likely that the bulk of at least two of these meals is comprised of starchy fruits, roots and tubers, yam and cereals such as rice and wheat flour in its many forms (CFNI, 1983.a). Bananas have traditionally been one of the main crops produced locally for consumption; they may account for between 10% and 12% of the total food consumption (ESN - NCP, 1988).

Very little information is available on the current child feeding practices in Grenada. A 1982 survey (ESN - NCP, 1988) conducted by the Grenada Food and Nutrition Council and the Caribbean Food and Nutrition Institute (CFNI), found that 95% of the mothers with children 0-6 months old were breastfeeding and bottle feeding at the same time. Approximately 54% of these children were introduced to the bottle before the age of 1 month. It is not certain if some traditional beliefs which discouraged prolonged breastfeeding (believed to encourage worms) and discouraged mothers from giving certain foods to young children (for example rice, meat, fish and eggs are thought to give worms, while cheese and eggs spoil teeth) still persists (ESN - NCP, 1988).

4. Anthropometric data

Information relating to recent anthropometric measurements of children on a national scale is limited in Grenada. Figures for the level of undernutrition (defined as < 80% median weight for age) among children 0-5 years from clinic data were only found for the years 1997 (4.3%) and 1998 (2.8%). Reported Overweight (defined as > 120% median weight for age) among the same age group, 4.0% in 1990 and 1.0% in 1996 (**Table 4a**). In a 1975 study carried out by Miguel Gueri among children 0-5 years, 39.7% were malnourished (< 90% median weight-for-age) based on the Gomez classification. Of the total number of children measured, 1.6% were severely malnourished (<60% median weight-for-age), 9.0% were moderately malnourished (60 - 74% median weight-for - age), and 29.1% were mildly malnourished (75 - 89% median weight-for-age) (Gueri, 1976). The prevalence of malnutrition increased with age, while the majority of malnourished children were from Victoria and Gouyave (**Table 4a**). These limited bits of data seem to suggest that severe malnutrition has not been a major problem in Grenada in the 1990s compared to the 1970s. Fairly high levels of mild to moderate malnutrition existed in the 1970s, but no data were found to confirm whether this is still the case.

The prevalence of low birth weight was 12.2% in 1975 (Gueri, 1976) and has shown a decrease to 9.7-10.6% between the years 1992-1995 (PAHO/WHO, 1999.a). No national data on anthropometric measurements were found for adolescents and adults in Grenada.

Table 4a: Anthropometric data on children

Source/ Year of survey	Location	Sample Size Number	Sex	Age Years	Percentage of malnutrition		
					Underweight % Weight for Age		
					< 80% median	>120% median	
CFNI, 2000	Clinic Data						
Obesity	1990	…	M&F	0-5.0	…	4.0	
Prevention and	1996	…	"	"	…	1.0	
Control,	1997	…	"	"	4.3	…	
1990 - 2000	1998	…	"	"	2.8	…	
					< 90% median		
					%		
Gueri M., 1976	National	1102	M&F	0-5.0	39.7		
Nutritional Status							
of Young Children							
in Grenada, 1975							
					< 60% median	60-74% median	75-89% median
"	National	1102	M&F	0-5.0	1.6	9.0	29.1
"	National	518	M&F	0-11.0	1.7	4.6	20.5
	"	318	"	12.0-23.0	1.6	13.8	32.7
	"	166	"	24.0-35.0	0.1	10.2	42.8
	"	69	"	36.0-47.0	2.9	14.5	39.1
	"	31	"	48.0-59.0	3.2	12.9	41.9
"	St.George's	437	M&F	0-5.0	2.1	6.4	24.9
	Sauteurs	249	"	"	0.4	5.6	28.1
	St.David's	173	"	"	0.0	12.1	28.9
	Victoria	51	"	"	3.9	41.2	51.0
	Gouyave	34	"	"	5.9	26.5	58.8
	Grand Bas	108	"	"	2.8	3.7	25.9
	Clozier, Forida						
	& The L'Anse	50	"	"	2.0	4.0	36.0

Notes: ... no data available

5. Micronutrient deficiencies

Like most of the English-speaking Caribbean countries, Grenada is faced with the problem of iron deficiency anaemia. Although this problem is most common in pregnant and lactating women, and in pre-school children, the most recent survey, carried out in 1992, indicated that iron deficiency continued into adulthood (CFNI, 1994). The results from this survey (**Table 5**) showed that, by the World Health Organization (WHO) standards, approximately 56% of the children 0-5 years were anaemic. The data also showed that generally more females were anaemic compared to males in the age groups 6-14 years and 15-44 years. The prevalence of iron deficiency found among pregnant (43.2%) and lactating (23.1%) women has to be interpreted with caution as only a relatively small number of these women was assessed.

In comparison with the 1992 results, the 1985 study (seven years earlier), using the same WHO cut-off points, there appeared to have been an increase in the prevalence of anaemia among the four age groups. More males (39.0%) than females (35.9%) in the 6-14 years age group were anaemic in this earlier study. Common to both the 1985 and 1992 studies was the higher prevalence of anaemia among males over 45 years old compared with those in the age group 15-44 years. Further, the prevalence of anaemia decreased with increasing age among the females (**Table 5**). The prevalence of anaemia among pregnant and lactating women appeared to have decreased between 1985 (CFNI, 1986) and 1992 (PAHO/CFNI, 1994), but due to the small samples used to make these assessments this cannot be stated with great certainty. However, figures from the Ministry of Health for 1993 (PAHO/CFNI, 1994), using WHO standards, showed a prevalence of 58.5% for anaemia among pregnant women, a significant decrease from the level of 73.7% for 1984 as reported by the Health Ministry (PAHO/CFNI, 1994). Interestingly a 1976 study reported Anaemia (Hb < 11 g/dl) in 51% of pregnant women (Gueri M, 1976).

The program of iron fortification of wheat flour has been in effect since 1993 aimed at significantly reducing the iron deficiency anaemia. However, no study has been found that evaluates the effectiveness of this program in reducing the prevalence of anaemia in Grenada. The baseline data collect to assist in future evaluation of the iron fortification program, revealed that dietary intake of iron was lowest among the poorest segment of the population, and the largest proportion of families with inadequate iron intakes was among this population segment (lowest quintile). Large families and families with toddlers were also vulnerable to inadequate dietary iron intake (PAHO/CFNI, 1994).

No data were found that indicated that vitamin A and iodine deficiencies were of public health concerns in Grenada

Table 5: Surveys on micronutrient deficiencies

Source/ Year of survey	Deficiency	Location	Sample			Percentage
			Size Number	Sex	Age Years	
	Iron					
CFNI/PAHO, 1994	< 11 g/dL	National	176	M&F	0-5.0	55.7
The Fortification of						
Wheat Flour, (Using	< 12 g/dL	"	197	M	6.0-14.0	54.8
th Nutribusiness	"	"	194	F	"	63.4
Strategy) Grenada						
1992	"	"	274	M	"	19.0
	< 13 g/dL	"	274	F	15.0-44.0	52.9
"	"	"	152	M	> 45	38.2
	< 12 g/dL	"	196	F	"	39.4
"	< 11 g/dL	"	13	Pregnant		43.2
"	"	"	39	Lactating		23.1
CFNI/PAHO, 1986	< 11 g/dL	National	199	M&F	0-5.0	43.7
Assessment of Iron						
Status of Grenadian	< 12 g/dL	"	136	M	6.0-14.0	39.0
Population, 1985	"	"	145	F	"	35.9
"	"	"	166	M	"	14.2
	< 13 g/dL	"	271	F	15.0-44.0	33.2
"	"	"	79	M	> 45	35.4
	< 12 g/dL	"	155	F	"	23.8
"	< 11 g/dL	"	62	Pregnant		62.9
	"	"	64	Lactating		47.0
Ministry of Health	< 11 g/dL	National	479	Pregnant		73.7
Report, 1984						
Ministry of Health	< 11 g/dL	National	400	Pregnant		58.5
Report, 1983						
Gueri M, 1976	< 11 g/dL	National	1171	M&F	0-5.0	51.0
Nutritional Status of						
Young Children in						
Grenada, 1974-75						

Notes: ... data not available

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References of data presented in Table 1, unless otherwise stated:

Source:	*Indicator:*
FAOSTAT. 1999/2002	*A.1-2, B, C.10-11, E.1-3, F, G*
UN. 2000/2001 rev.	*C.1-9, D.5*
World Bank. 2002.	*D.1*
UNDP. 2002.	*D.2*
Tabatabai H. 1996.	*D.3-4*
UNICEF. 2002.	*D.6*
FAO/WFS. 2002.	*H*