

**GRENADA FOOD AND NUTRITION SECURITY SITUATION
ANALYSIS**

2012

Government of Grenada

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ABBREVIATIONS AND ACRONYMS

CABI	Caribbean Biological Institute
CARDI	Caribbean Agricultural Research and Development Institute
CARICOM	Caribbean Community and Common Market
CCRIF	Caribbean Catastrophe Risk Insurance Facility
CNCD	Chronic Non-Communicable Diseases
CSC	Customs Service Charges
CSME	Caribbean Single Market and Economy
ECCB	Eastern Caribbean Central Bank
EPA	Environmental Protection Agency
FAO	Food and Agriculture Organisation of the United Nations
FNS	Food and Nutritional Security
GCA	Grenada Cocoa Association
GCIC	Grenada Chamber of Industry and Commerce
GCNA	Grenada Cooperative Nutmeg Association
GDP	Gross Development Product
GEF	Grenada Employers Federation
GFAFO	Grenada Farmers and Fishers Organisation
GFNS	Grenada Food and Nutrition Security
IICA	Inter American institute for Cooperation on Agriculture
MNIB	Marketing and National Importing Board
MOA	Ministry of Agriculture
MOE	Ministry of Education

MOH	Ministry of Health
MOF	Ministry of Foreign Affairs
MOL	Ministry of Labour
MOLA	Ministry of Legal Affairs
MOSD	Ministry of Social Development
NAWASA	National Water and Sewerage Authority
NEPAIU	National Environmental Protection Agency Implementation Unit
NSAs	Non State Actors
OECS	Organization of Eastern Caribbean States
RDA	Recommended Dietary Allowance
USAID	US Agency for International Development
VAT	Value Added Tax
WHO/PAHO	World Health Organisation/Pan American Health Organization
WTO	World Trade Organisation

INTRODUCTION

The document presents the findings of a situation analysis undertaken in Grenada to produce information relevant for the formulation of the Grenada Food and Nutrition Security Policy and the Plan of Action to Implement the Policy. From the start it was determined that the Policy and Plan of Action would need to be evidence-based, at least to the extent that the availability of data and documentation would allow. In this process experts were also consulted to complement the available information and documentation.

The analysis focused on three aspects: (a) the current and past food and nutrition security situation and four FNS components: food availability, food access, food utilization and nutritional adequacy, and stability in food supplies and access. An assessment of the most relevant regional and national policies is also included, as well as an identification of the stakeholders, both governmental and non-governmental institutions and organizations. The policy assessment focused on identifying current policy gaps for food and nutrition security; such gaps are partially a justification for formulating an overarching food and nutrition security policy. Understanding the institutional environment for food and nutrition security, and the limitations of that environment, is important for policy implementation, while making it possible to identify specific actions to make that environment more enabling for policy implementation.

Assessment of the food and nutrition security situation was challenged by the unavailability of reliable and current data on domestic production of food crops, livestock and agro-products in particular. The analysis therefore had to rely on production data from international sources which were sometimes suspect for accuracy and imputed data from industry organizations and other professionals in the various areas. Overall, however, the available information provides a fair assessment of the current situation for the purposes of crafting a policy for food and nutrition security in Grenada.

CURRENT FOOD AND NUTRITION SECURITY IN GRENADA

Food Availability

The availability challenge for food and nutrition security in Grenada is to strengthen its capacity to generate a sufficient internal food supply (via production, adequate storage and stocks and imports) to meet the basic food and nutritional needs of all social groups and also of expanding effective demand¹. This was reinforced by the FAO Voluntary Guideline 2.3² which advocates that *'States should promote adequate and stable supplies of safe food through a combination of domestic production, trade, storage and distribution'*.

Interestingly up to 1981 reliable and timely data on domestic agricultural production was readily available through the Statistics Department of the Ministry of Agriculture. Since then with the integration of this department in the Planning and subsequently the Statistics Department of

¹ FOOD SECURITY TRENDS AND PROSPECTS IN LATIN AMERICA - Solon Barraclough & Peter Utting: Working Paper #99 - August 1987

² THE RIGHT TO FOOD – VOLUNTARY GUIDELINES: FAO Rome, 2005 Adopted by the 127th Session of the FAO Council November 2004

the Ministry of Finance, and despite improvements in available statistical and electronic data collection and management technology the quality of data on the agriculture sector has declined significantly.

The importance of accurate, reliable and timely information on agricultural production cannot be understated given its importance to the computation of the sector's contribution to the GDP, assessment of the food and nutrition security situation, policy formulation, and monitoring and evaluation of the impact these policies and programs for the sector. This is highlighted in 'The Right to Food' Voluntary Guidelines #s 2.1 and 2.2 which advocates inter alia that *'States should establish policy goals and benchmarks based on the food security needs of their population'* and .. *'States should assess, in consultation with key stakeholders, the economic and social situation, including the degree of food insecurity and its causes, the nutrition situation and food safety'*. The achievement of these goals could only be assessed based on accurate and reliable data. This is a challenge which must be addressed by this policy given the importance of accurate information for decision making, monitoring and evaluation.

At the national level Grenada may be considered food secure. However, significant transitory food and nutrition insecurity exist at the household level and among vulnerable groups.

Based on FAO's Food Balance Sheet for Grenada (updated July 29, 2012), total food caloric availability (calories/caput/day) in Grenada averaged 27% above the RDA during the period 2005 to 2009 with an average annual growth rate of about 1%. During that same period protein availability averaged 41% above the RDA with average annual growth of 2% and availability of fats averaged 32% above the RDA with an average annual growth rate of 4%. Since the late 1960's the availability of the major macro nutrients (carbohydrates, protein and fats) have exceeded the RDA.

Threats to national food and nutrition security are therefore more related to the composition of the food supply, access, dietary patterns and choices, food quality, and trade rather than total supply.

Domestic Production

Agriculture is one of Grenada's most important economic activities, particularly for stimulating economic growth, providing employment, generating foreign exchange, revitalizing the rural sector, reducing poverty, and improving national food and nutrition security. In the 2010 Budget presentation, Government identified agribusiness as one of its five (5) pillars for economic development.

In 2011, Agriculture contributed about 4.09% of the GDP at current market prices up from 2.93% in 2007. Growth in the sector (by value) averaged 2% per annum during the period 2000 to 2004 but increased an average of 10% per annum between 2007 and 2011. Agriculture is Grenada's third largest employer providing employment for over 6,000 persons or 14% of the employed workforce in 2011 with the majority of farming taking place in rural communities. Seventy eight percent (78%) of the 4,003 registered commercial farmers were

males and 22% females³. For fishing, 100% of the 1,500 fishermen were males and all of the 40 fish vendors were females. The percentage of the workforce engaged in agriculture is highest in the rural parishes of St. Mark, St. John, St. Andrew, and St. Patrick which also experience the highest level of poverty.

Domestic agricultural production is comprised mainly of tree crops (nutmeg, cocoa and other spices), fruits, vegetables and root crops, livestock (mainly poultry, pigs and small ruminants), fisheries, and forestry products. Production activities are carried out mainly by low resource farmers on small farms averaging 2.6 acres⁴. The average acreage for food crop farmers was 0.27 acres and for permanent crops 2.1 acres. Unofficial estimates are that more than 50% of the 35,000 acres of arable lands was currently uncultivated. Annual growth in the value of production averaged 10% between 2007 and 2011. This growth was driven by increased prices. Total production during that period averaged 18,000 metric tons with stagnant growth and about 50% below the pre-hurricane level of production.

Agricultural exports accounted for 47% of total exports and are important for foreign exchange earnings and income generation for producers. Earnings from agricultural exports were however only 16% the value of food imports. Exports earnings have shown robust growth since 2007 increasing at an average annual rate of 16.4% between 2007 and 2011. This growth has been fueled mainly by an average annual 12.2% increase in export price and 2.4% annual increase in the amount of exports. The principal agricultural exports by value in 2011 were nutmegs, fish, and cocoa.

The Agro-Processing Subsector is relatively small but growing and is made up of a few medium sized agro-processors and over 265 small agro-processors. The majority of agro-processors produce jams, jellies, confectioneries and sauces. Sixty-five percent (65%) of them are women. The subsector also generates self-employment and approximately 1,325 temporary jobs. It has been conservatively estimated that the sector generates about EC\$10.6 million per annum. Most of the products are sold on the local market but a number of agro-processors have been able to penetrate the export markets through formal and informal arrangements and through internet marketing.

Manufactured agricultural products are also an important subsector of the agriculture sector in Grenada for both domestic consumption and export. These items comprise mainly nutmeg products, flour, and animal feed. With the exception of nutmeg products, all of the other products are manufactured from imported raw materials. Exports of manufactured products was dominated by flour and animal products and amounted to over EC\$11 million in 2011. Growth in this subsector has been relatively stagnant averaging 2.33% by value annually between 2000 and 2011. The growth was driven mainly by increased prices.

Grenada's agriculture evolved around production of primary agricultural raw materials products for export. These included tobacco, molasses and rum from sugarcane, fermented and dried cocoa beans, dried nutmegs and mace, and bananas commonly referred to as traditional exports. Production was carried out mainly on large estates with in most cases expatriate

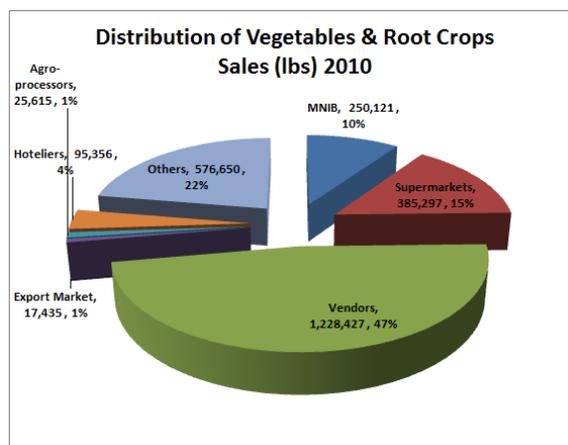
³ Ministry of Agriculture Farmer Registration data

⁴ Grenada Agricultural Census 1995

management. Significant investments were made in research and development (e.g. introduction, testing and selection of improved varieties of cocoa, nutmegs and bananas; soil testing, etc.), and production (plant propagation stations, intercropping, spacing, fertility management, pest and disease management etc.), post-harvest and processing (sugar mills and rum distilleries, cocoa fermentaries, nutmeg receiving and processing stations, banana receiving stations and boxing plants, etc.) and marketing (producer organizations, port facilities, shipping agencies, transportation, contracts with buyers, collaboration with regional and international companies and organizations, etc.) infrastructure to support the production and trading of these crops. Financing for these investments was generally provided by or made available through the colonial government through the local government.

The export marketing infrastructure was well organized around value chains from research and development to input supply, post-harvest, processing, storage, transportation and distribution, export, wholesale and retail to consumption. The domestic marketing infrastructure was however never developed with producers having to rely on the municipal markets, itinerant vending, and informal arrangements with wholesalers and retailers. This situation continues to the present day.

A survey conducted by the Ministry of Agriculture in 2010 with the assistance of the FAO and financed under the EU Special Framework of Assistance (GCP/RLA/167/EC SFA2006) showed that 75% of the food crops (vegetables, roots and tubers) were sold and the remainder disposed of otherwise. Spoilage accounted for 5% of total production, praedial larceny 1% and **home use 16%**. As it relates to the distribution of the vegetables sold, the majority went to vendors 46%, others 19%, supermarkets 16%, MNIB 12%, hoteliers 5% and agro processors 1%. Root crop produce sold for the period was as follows; vendors 50%, other retailers 30%, MNIB 5%, supermarkets 13%, hoteliers and agro-processors 1%. The most commonly reported problems by these farmers were availability and price of inputs, finance, lack of irrigation and labour. Marketing, praedial larceny and pest and diseases were also listed.

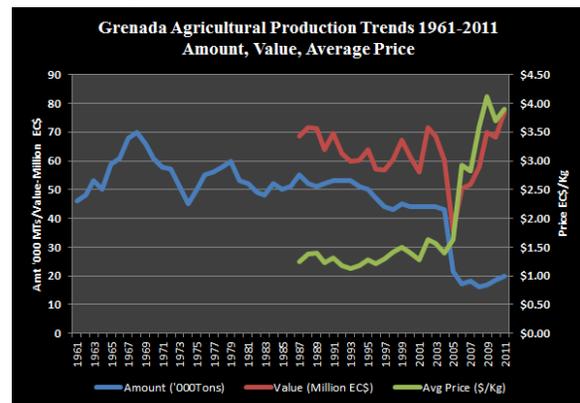


Fruit tree and food crop production was carried out on small areas on these estates and small plots mainly to provide food for the workers and in the case of some of the fruit trees to provide shade for the export crops during the establishment phase. Surplus production was traded on the local markets mainly on weekends. Most of the food for the general population was imported and paid for by revenue from exports. Imports also provided an important source of revenue for Government through tariffs and other import taxes, levies and duties to finance its public sector operations.

The weakening of commodity markets and prices as well as loss of competitiveness and preferential treatment during the post-colonial period was accompanied by the demise and fragmentation of the large estates and the gradual transformation of the economy from

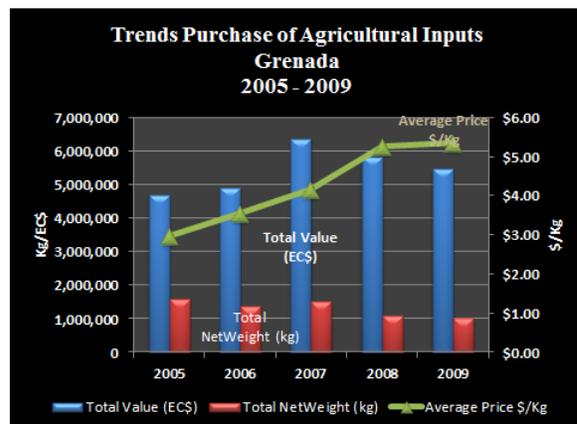
agricultural based to service based. Estate workers replaced expatriate managers and the local gentry as the owners and managers of small undercapitalized production units. Investments in research and development, production technology, postharvest, processing and marketing infrastructure stagnated. In the wake of these developments, production, particularly of the export crops, declined significantly, and much of the productive lands were left abandoned and used mainly as security for non-agricultural investments with a significant portion moving into non-agricultural uses. Between 1961 and 1995, the available agricultural lands declined by 42% from 60.2 thousand acres in 1961 to 35 thousand acres in 1995⁵. Most of the decline was in acreage of farms larger than 100 acres which declined by 69%. During that same period the number of farms declined 23% from 15,319 to 11,871 and average acreage per farm by 33% from 3.9 acres to 2.6 acres.

With the decline in acreage cultivated and other contributing factors such as weak commodity prices agricultural production has shown a declining trend since the 1960's further aggravated by the significant drop in production as a result of the 2004 and 2005 hurricanes. The trends in amount and value of production are illustrated in the attached figure. Growth in the sector during the post hurricane period was driven mainly by increased prices particularly for the export products in line with the global increase in prices.



With the transformation of the agricultural production in Grenada from one based on large estates to one based on small farms and production units farmers and other producers have organized themselves into a number of formal and informal organizations to enhance their competitiveness and improve economies of scale. These include commodity and community based statutory cooperatives, registered not for profit companies, registered and unregistered cooperatives, and other informal organizations. There are more than 26 of these organizations presently in Grenada representing various rural communities, crop producers, livestock producers, fisher folks, and agro processors. Most of these organizations are undercapitalized and need to strengthen their capacity to effectively represent their membership.

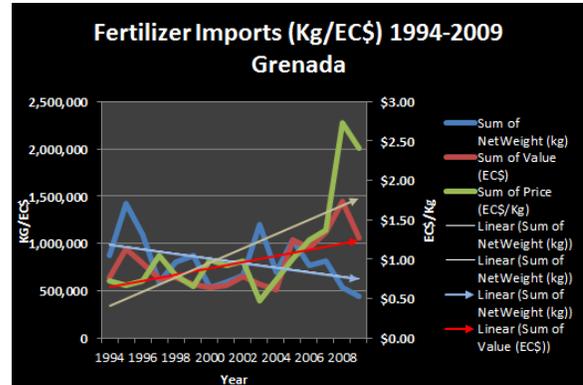
Use of production inputs declined significantly during the period 2005 to 2009 in response to increased import prices. Overall average price increased 81% and amount purchased declined by 36%. Fertilizer prices increased 140% and purchases declined 58%. Pesticides prices increased 105% and purchases declined 41%. Packaging material prices increased 12%.



⁵ Grenada Agricultural Census '95

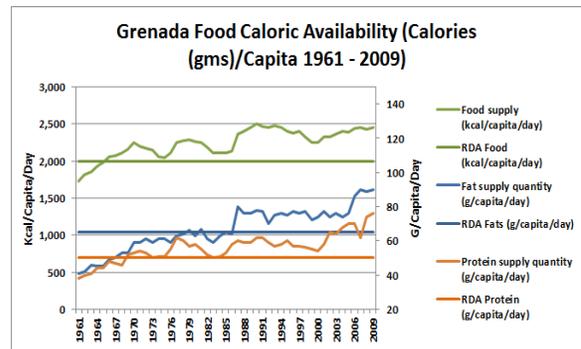
Reduced use of production inputs would adversely affect productivity in the absence of alternative treatments. Trends in purchases of the various categories of inputs are illustrated in the chart above.

Overall the use of fertilizer has been declining since 1994 in response to increased prices particularly from early 2000. This has serious implications for productivity unless alternative sources of nutrients are provided to increase and maintain soil fertility.

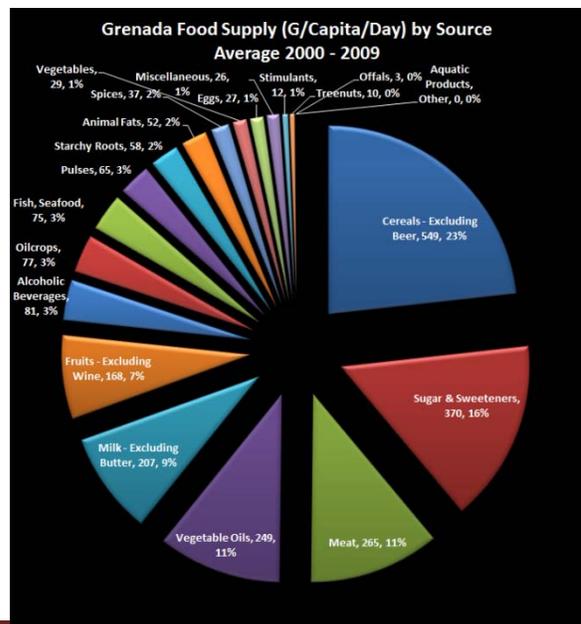


Composition of the Domestic Food Supply

The main sources of calories were cereals (23%), sugars and sweeteners (16%), meats (11%), vegetable oils (11%), milk (9%), fruits (7%) and alcoholic beverages (3%). An analysis of the products available within the various food groups show a heavy reliance on non-nutritious and poor quality imported products such as low grade chicken meat, margarine, biscuits and refined sugars most of which are imported.



In 2010, the food supply index which is a measure of domestic consumption to total supply was conservatively estimated at 104 and the self-sufficiency index which measures the proportion of the available food supply provided from domestic resources was estimated at 26. Ninety six percent (96%) of total supply which amounted to 76 thousand metric tons valued at EC\$194 million was available for local consumption. Exports which amounted to 3 thousand metric tons valued at EC\$41 million accounted for the remaining 4% of total supply.

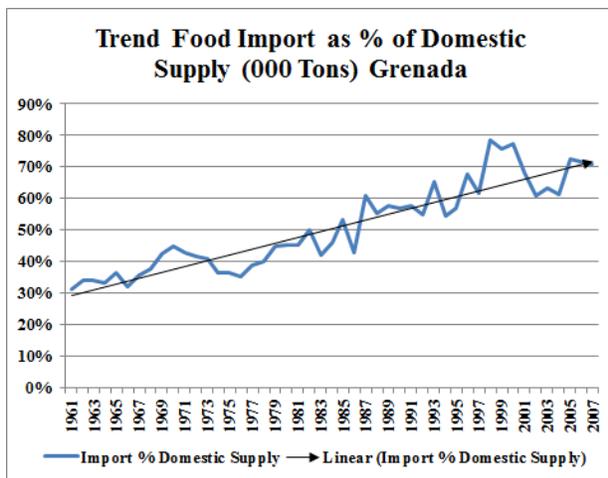


The low self-sufficiency index highlights the heavy dependence on imports to meet national food requirements. More than 70% of the available food for consumption was from imports. Grenada was self-sufficient for nutmegs, mace and other spices, cocoa and fish

with significant surplus for export. The self-sufficiency index was 97 for fruits, 94 for milling products (manufactured from imported cereals), 46 for vegetables and root crops, 18 for dairy products, and 14 for meats. All of the supplies of the other food categories namely cereals, sugar & confectionary, oil seed etc., cereal preparations, fats & oil, and miscellaneous edible preparations were imported.

Food Imports

Grenada is becoming increasingly dependent on imports for its food supply. The contribution of food imports to domestic food supply has been increasing steadily moving from an average of just over 30% in the 1960's to over 70% in 2005. During the period 2005 to 2010 however the quantity of goods imported has remained relatively stagnant in the wake of steadily increasing prices.

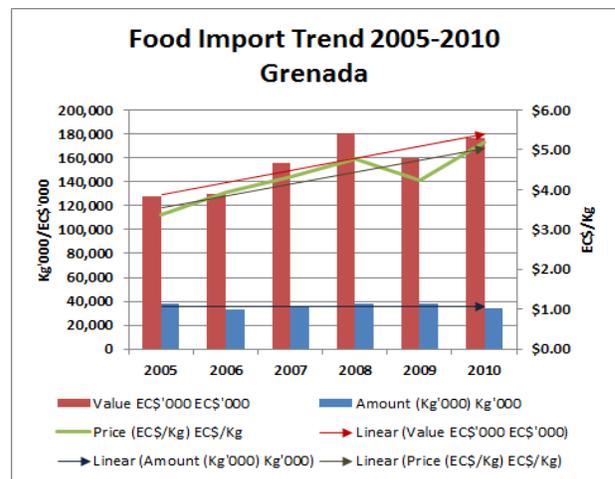


Total imports of food products in 2010 amounted to 59 thousand metric tons valued at EC\$142 million. The import situation by category of food imports using 2010 as the base year is summarized in the above chart.

Meat and edible offal was the largest category of food product imported by value (18%). Seventy one percent (71%) by value and 85% of the amount of total supply was imported. The main product in this category was chicken meat which accounted for 70% by value and 78% in amount of supply.

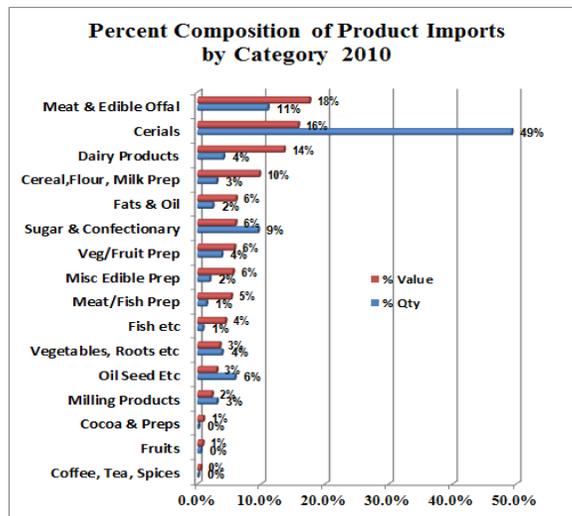
Seventy three percent (73%) by value and 87% by volume of the chicken meat supply was imported. The imported chicken meats consist mainly of frozen parts of generally poor quality.

Cereals raw materials for manufacture of food (flour) and animal feed were the second largest category of food imports by value (16%) and accounted for 49% of the volume of imports. All of the cereal supply was imported. The main items in this category were wheat (58% by value and 67% by volume of supply), maize (22% by value and 29% by volume of supply) and rice (20% by value and 4% by volume of supply).



Dairy products accounted for 14% by value and 4% by volume of total imports. Eighty percent (80%) by value and 81% by volume of the products in this category are imported. The main products imported in this category were milk (50% by value and 63% by volume of supply) and cheese (24% by value and 14% by volume of supply).

Cereal, flour, and milk preparations accounted for 10% of the value and 3% of the volume of total imports. The main product in this category were bread, pastry, cakes, biscuits and similar baked products which accounted for 54% by value and 48% by volume of supply in this category



Fats and oils accounted for 6% by value and 2% by volume of total imports. All of these products are imported. The main products in this category were margarine (50% by value and 43% by volume of supply), and soya bean oil (30% by value and 30% in amount).

Sugar and confectionary accounted for 6% by value and 9% by volume of total imports. All of these products are imported. The main products in this category were brown sugar (39% by value and volume of supply), refined white sugar (31% by value and 29% by volume of supply) and molasses (12% by value and 29% by volume of supply).

Vegetable and fruit preparation category accounted for 6% by value and 4% by volume of total imports. All of the items in this category were imported. The main items in this category were mixtures of juices (18% by value and 24% by volume of supply), prepared or preserved potatoes (21% by value and 23% by volume of supply), orange juice (20% by value and 23% by volume of supply) and prepared or preserver ground-nuts (9% by value and 2% by volume of supply)

Miscellaneous edible preparations accounted for 6% by value and 2% by volume of total imports. All of these products were imported. The main items in this category were food preparations (46% by value and 29% by volume of supply), sauces and preparations, mixed condiments and mixed seasonings (17% by value and 18% by volume of supply), Tomato ketchup and other tomato sauces (14% by value and 30% by volume of supply), and ice cream and other edible ice (7% by value and 9% by volume of supply)

Meat and fish preparations accounted for 5% by value and 1% by volume of total imports. All of these products were imported. The main products in this category were sausage & similar prod of meat, meat offal/blood & food preparations based on these products (38% by value and 36% by volume of supply), bovine meat and meat offal prepared or preserved- corn beef (16% by value and 18% by volume of supply), swine meat &meat offal including mixtures prepared or preserved (12% by value and 10% by volume of supply), mackerel, prepared or preserved, whole or in pieces (11% by value and 14% by volume of supply), chicken (gallus domesticus) meat prepared or preserved (7% by value and 7% by volume of supply), and hams and cuts thereof of swine prepared or preserved (7% by value and 6% by volume of supply).

Fish accounted for 4% of total imports by value and 1% by volume of total imports. Grenada is a net exporter of fish and 16% by volume and value of total fish supply is imported to complement local supplies. The main items imported were fish nes, dried, whether or not salted but not smoked (10% by value and 9% by volume of supply), herrings smoked, including fillets (1.2% by value and 1.9% by volume of supply), fish fillets, dried, salted or in brine but not smoked (0.8% by value and volume of supply), shrimps and prawns, frozen, in shell or not, including boiled in shell (0.8% by value and 0.4% by volume of supply), frozen fish fillets (0.6% by value and 0.4% by volume of supply), cod dried, whether or not salted but not smoked (0.6% by value and 0.5% by volume of supply).

Vegetables and root crops accounted for 3% by value and 4% by volume of total imports. Thirty two percent (32%) by value and 51% by volume of this category of products was imported. The main items in this category imported were potatoes, fresh or chilled nes (9% by value and 22% by volume of supply), onions and shallots, fresh or chilled (4% by value and 8% by volume of supply), potatoes seed, fresh or chilled (3% by value and 2% by volume of supply), garlic, fresh or chilled (3% by value and volume), peas dried, shelled, whether or not skinned or split (3% by value and 4% by volume of supply), lentils dried, shelled, whether or not skinned or split (2% by value and volume of supply), and carrots and turnips, fresh or chilled (2% by value and volume of supply).

Oilseeds accounted for 3% by value and 6% by volume of total imports. All of the items in this product category were imported. The main item in this category was soya beans which accounted for 91% by value and 96% by volume of supply.

Milling products accounted for 2% of total imports by value and 3% by volume. Fourteen percent (14%) by value and 17% of this product category was imported. The main products in this category were wheat or meslin flour (7% by value and volume of supply), and malt, not roasted (4% by value of supplies).

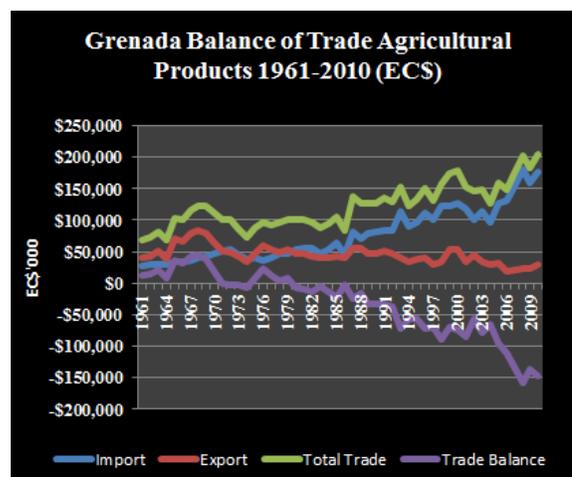
Cocoa and cocoa preparations accounted for 1% by value and volume of imports. Imports accounted for 22% by value and 11% by volume of this category. The main imported items in this category were chocolate & food preparations containing cocoa in blocks, slabs/bars (13% by value and 7% by volume of supply), cocoa powder, containing added sugar or other sweetening matter (4% by value and 2% by volume of supply), and chocolate and other food preparations containing cocoa nes (4% by value and 2% by volume of supply).

Fruits accounted for 1% by value of total imports. Ten percent (10%) by value and 5% by volume were imported. The main items imported in this category were bananas (3% by value and volume of supply), grapes (2% of volume and 1% of supply), and apples (1% by value and volume of supply).

While imports are a drain on the country's foreign exchange it also represents an important source of revenue for Government. In 2009 revenue from imports in the form of import duty, Customs (Service Charges (CSC) and Value Added Tax amounted to about EC\$32.5 million or 20% of the CIF value of the items imported. The VAT was the major revenue generator. These figures do not include revenue generated from port and other handling charges.

Grenada's balance of trade in agricultural products has worsened over the years and from the 1970's the country has been experiencing a growing net agricultural trade deficit.

Grenada's major trading partners in 2010 were the United States, Trinidad & Tobago and Brazil. The largest imbalance was with Trinidad and Tobago. It accounted for only 1% of our exports but was the second largest source of imports accounting for 16% of total imports. The United States was our largest trading partner supplying 29% of our imports and absorbing 49% of our exports. The main export to the US was fresh fish. Brazil our third largest trading partner supplied 12% of our imports. There were no exports to Brazil. The main product imported from Brazil was chicken parts.



CARICOM supplied 29% of Grenada's agricultural imports and absorbed 15% of our agricultural exports. The main export to CARICOM was milling products. The OECS supplied only 1% of our imports and accounted for 12% of our exports. The main imports from CARICOM and the OECS were cereals, fats and oils, sugar and other manufactured products. Grenada's main export to CARICOM and the OECS was also milling products. The chart above shows Grenada Trade Balance 2010.

Grenada's average tariff on agricultural products (WTO definition) is 18.2%; the final bound average tariff is 100.3%. The highest tariff rate on agricultural products is 40%. Grenada bound all its tariff lines during the Uruguay Round: with some exceptions, agricultural products were bound at 100%; some fruits and spices were bound at 200%.

Macroeconomic Challenges to Food Availability

- **Mobilizing budgetary financing for the increasing net trade deficit for agricultural products.** In 2010 the deficit on agricultural trade amounted to \$94 million. Government therefore had to raise the additional foreign exchange to finance food imports from other sectors of the economy putting additional strain on the country's financial resources.
- **Compensating for potential loss of revenue from measures to reduce food imports, and tariff reductions on imports to reduce cost and to comply with trade liberalization and other international trading agreements;** In 2009 Government revenue from duties and taxes (tariff, CSC and VAT) on food imports amounted to \$32 million or 20% the value of imports. In that same year foregone revenue from VAT and tariff reduction on food imports from CARICOM origin amounted to \$21 million. Compliance with the WTO and EPA also require progressive reduction of tariff in imports from partner countries covered under these agreements. The implication is that Government will have to find alternate source of the revenue foregone to finance food and other imports.

- **Mobilizing development financing for interventions to improve domestic food availability:** Significant financial outlay is required for infrastructure development (farm and feeder roads, upgrading sea and airport facilities, etc), research and development activities, and advocacy to create the enabling environment for the development of our domestic agriculture, food production and marketing. Government will have to strengthen its capacity to access donor aid financing through the various bilateral and trading agreements (WTO, EPA) as well as other agencies such as the GEF, FAO, IICA, USAID, etc. Government will also have to consider actions to promote increased investment by the private sector in the agriculture and food value chain. According to the ECCB, between 2008 and 2012 the percentage of total loans and advances from the commercial banks in Grenada averaged 2.18% (agriculture 1.18%; fisheries 0.13% and food and non-alcoholic beverages 0.87%)

Resource Management Challenges:

- **Preservation and optimization of limited resources for domestic food production (land, marine, forestry, water):** Between 1961 and 1995 the amount of cultivable land for agriculture declined by 42%. According to the 1995 Agricultural Census 69% of the agricultural lands was cultivated compared to 68% in 1961. With increasing demand for lands for real estate and other non-agricultural purposes it is important that the remaining agricultural lands be preserved for agricultural purposes and the use of the available land be optimized.

Grenada's water resources originate mainly from a system of permanent streams and rivers. Some groundwater is available from the limestone areas along the northwest coast. The entire population (rural and urban) have access to the domestic water supply. About 80% of the island is connected to the public water supply, 7% to standpipes while the remainder is supplied from rain water catchments. However, there is very little available from that supply that can be diverted to agriculture.

Irrigated agriculture is largely undeveloped. The irrigation potential has not been quantified and though there is water available from a number of surface and groundwater sources, these sources have not been tapped nor is the extent of this resource known. Currently for the island of Grenada alone, a total of 218.5 ha, or 1.5% of the area under cultivation, is under irrigation as compared to 4.8 ha in 1973. Micro-irrigation is utilized in more than 90% of the area, the remaining area being under sprinkler irrigation. Crops grown under irrigation include mainly vegetables (90%), fruit trees, and grapes (5%), cut flowers (2%) and maize, roots, tubers, and pulses (3%). Of the irrigated area, less than 1% is from river diversion, 6.5% from reservoirs while the remainder is from direct pumping from rivers. There is one limiting factor to the development of irrigation that has so far been observed, and that is that significant amounts of arable land are located in areas where there is no available water source, either domestic or otherwise. Costs for sprinkler and micro-irrigation systems are 6,200 and 8,700 US\$/ha respectively.

The National Water and Sewerage Authority (NAWASA) is responsible for the development of drinking water supplies as well as the sanitary disposal of sewage. The Ministry of

Agriculture's Forestry Division is responsible for the protection of water catchment areas, while its Agronomy Division is responsible for the development of irrigation on the island.

Over the last decade the annual rainfall ranged from 750 to 1400 mm. Two distinct rainfall patterns are evidenced. The dry season typically runs from January to May and the rainy season from June to December. Carriacou and Petit Martinique generally receive lower levels of rainfall and during the dry season can experience severe drought conditions. The rainfall pattern generally leads to seasonal production of vegetables.

There are a variety of coastal and marine resources in Grenada - coral reefs, sea grass beds and mangrove swamps, which have proven to be of crucial importance in the formation and sustenance of other resources as well as near-shore fisheries. The sea grass beds and mangrove wetlands are highly dependent on the presence of coral reefs (hydrodynamic barriers that dissipate wave energy) as it enhances the structure of the sea grass and mangrove. The breeding ground of the country's 17 main fish species (which provide 43 per cent of the total catch) may be negatively affected by damage to mangroves and reefs through warmer temperatures and sea-level rise.

- **Adopting environmentally and ecologically sustainable practices for the use of our physical resources:** The use of inorganic fertilizers and fossil fuel based pesticides are sub-optimal in Grenada. While the use of these products contributes to increased yield and productivity improper use can damage the environment and ecology. Increased cost and availability also pose a major challenge to increased use of these products. Consideration must be given to improved use of inorganic fertilizers to maximize benefits to plant nutrition and reduce contamination of the water resources. Alternative systems less dependent or not dependent of inorganic fertilizers should be considered e.g. organic production, permaculture etc. Integrated Pest Management Systems should be adopted wherever possible for pest control.

Trade Related Challenges:

- **Increasing exports of agricultural products to increase foreign exchange earnings reduce the trading deficit with partner countries and increase farmers income to purchase production inputs and foods that they do not produce:** Grenada has benefited positively from increased global prices for its key exports, Cocoa, Nutmegs, and Mace. Efforts should be made to increase production and productivity of these crops to maximize benefits from this opportunity and increase competitiveness. Demand for our fresh fish is also quite consistent and the focus should be on preserving the resource base to ensure sustainability. Significant unexploited opportunities exist for increased production of our fruits and vegetables both for domestic consumption and export. Development of the latter must be market drive. Specific target fruits and vegetables include: soursop; mangoes; june plums (golden apples); breadfruit; hot peppers; yams (yellow); dasheen; ginger; etc.
- **Accessing development financing available through the various regional and international trading agreements to which we are signatory (EPA, WTO, CSME, etc):** Most of the international trading agreements have development components. There

is the Aid for Trade component of the WTO Agreement and the development components of the EPA. The capacity of the country to identify opportunities for securing financing for development initiatives under these headings must be strengthened particularly in project preparation.

- **Protecting our domestic production enterprises from unfair trading practices and cheap, poor quality imported products within the framework of the trading agreements to which we are signatory:** Unfair trade practices such as dumping and subsidies in supplying countries can seriously impair the competitiveness and viability of local industries. As an example, the development of Grenada's poultry industry is seriously challenged by the supply of cheap poor quality poultry meat mainly from Brazil and the United States. Poultry meat is the single largest category of food products imported into the country accounting for more than 20% of food imports. There is concern that most of the imported poultry meats are sold below production cost in the supplying countries. Grenada however lacks the institutional capacity and resources to initiate actions to challenge this within the framework of the WTO trade dispute settlement procedures. Given the regional nature of this issue it may be more appropriate that the situation be addressed from a regional perspective. Policy measures are also required to identify other potential situations where subsidies and or dumping of products by supplying countries may be impairing the development of local industries.
- **Reducing import taxes on production inputs such as fertilizers, pesticides, packaging materials, equipment and machinery to reduce production cost while at the same time encouraging the use of inputs that have the least adverse impact on the environment:** This measure contribute to reducing prices paid by producers and thus encourage increased purchase and use leading to increased productivity. This must however be balance by proper use to achieve the greatest impact and minimize damage to the environment and ecology.
- **Compliance with international standards and health and safety regulations for market access to international markets:** All companies/business enterprises that produce, manufacture, process, pack, or store food, beverages, or dietary supplements for export are required to comply with the health and safety standards of the importing countries. This require firstly knowledge of the regulations and secondly the ability to comply. Compliance in many cases can be expensive and impose additional investment cost to suppliers.
- **Managing transportation and distribution logistics to regional and international markets:** Weak transportation and distribution logistics has been identified by numerous regional shipping and transportation studies among the key impediments to regional and international trade within the OECS and CARICOM and to international markets. Key issues include imbalance between inbound and outbound freight (capacity utilization); high and variable freight and port charges; and managing supply chain logistics. Recent initiatives to setup a regional OECS Distribution and Logistics Company should contribute to mitigating this impediment.

Producer & Production Related Challenges

- **Increasing production, productivity and competitiveness among small scale producers to improve the amount, quality and affordability of local foods through improved yield, nutritional fortification, and greater use of technology:** The key challenge here is the transformation of our agriculture, particularly among small farmers, from a production driven system, to an industry driven by technology, demand, innovation, creativity and competitiveness. With the predominance of traditional production and post-harvest practices, and the limited use of improved technology, yields are low and per unit production costs high making many of our local products with good market potential uncompetitive.
- **Consolidation and cooperation to achieve greater economies of scale:** Grenadian producers like most of their Caribbean counterpart are typically constrained by small-scale production and limited in terms of access to resources. These producers, therefore, cannot usually achieve economies of scale and international cost efficiencies, and consequently often cannot produce for mass markets or compete on a price basis. To participate effectively in the market place small scale producers need to organize themselves. In recognition of the importance of small producers and the need for cooperative action among themselves to improved food security, the FAO has embraced the theme 'Agricultural Cooperatives: Key to feeding the world" as its World Food Day 2012 theme. This is based on the realization that rural institutions like producer organizations and cooperatives contribute to food security by helping small farmers, fisher folk, livestock keepers, forest holders and other producers to access the information, tools and services they need. This allows them to increase food production, market their goods and create jobs, improving their own livelihoods and increasing food security in their own country and the world
- **Postharvest systems:** Postharvest systems, procedures and procedures are relatively undeveloped for most produce in Grenada. This contributes to significant postharvest losses throughout the supply chain and impairs the marketability of fresh produce. The FAO financed study in 2010 in Grenada showed that 5% of the vegetables and root crops (6% for vegetables, 3% for root crops) produced by small farmers were lost due to spoilage. Based on data from the Marketing & National Importing Board (MNIB), between 8-10% of the produce purchased are lost due to postharvest defects. Issues related to postharvest losses include maturity indices, handling, sorting and grading (standards for grades), field packing and transport, storage, transport to market, and packaging for retail, wholesale and export.
- **Adherence to good agricultural and good manufacturing practices (GAP and GMP):** With increased attention placed on health and safety in relation to foods and traceability it is important that producers adhere the voluntary guidelines for GAP and GMP. Producers must be aware of these practices and commit themselves to applying them in their production practices. Noncompliance can adversely affect entry to major markets.
- **Alignment of producers with markets through value chains:** It is common to hear producers complaining that they cannot find markets for their produce (products) and

buyers complaining that they cannot secure supplies of the produce (products) they require. This disconnect is generally a result of our producers and some policy makers focusing first on production and hoping to find a market without finding out what the market requirements are. This attitude must change.

It is well recognized that a critical aspect to assessing markets and high value-added specialty niche markets in particular is linking producers with buyers and consumers. It is vital that producers know what they can produce—in terms of quality, features, costs, quantities and delivery time—and evaluate these in terms of what the market and consumers want. Where there is a match between production possibilities and consumer preferences, there is good potential market. Details of the supply chain also have to be examined and understood in terms of costs and effectiveness. Also producers must be aware that the costs associated with the supply chain increase directly in relation to the number of intermediaries, so these need to be minimized where possible. Even at a minimum, costs beyond production will likely include packing and labelling, export customs clearance, freight and insurance, banking fees, import clearance, tariffs, warehousing, distributor mark-up, retailer mark-up. But these direct costs are not the only consideration. Additional issues have to be thought through—for example, expediency in clearing customs, delivery times, product safety, distributor's interest, exclusivity, advertising, retail displays, and so on may affect interest in the product, as well as the final price and profit yield.

Each element of the supply chain adds cost. The fewer the elements, the lower the final price can be, and the more the producer receives of the final price. The producer should eliminate any unnecessary elements of the supply chain; however, each element represents specialized expertise, and can only be eliminated if the producer can develop this expertise, and provide it at a lower cost.

The value chain approach addresses these issues and concerns. However it is critical that the possible value chains be carefully identified and prioritized for intervention. Our analysis has identified the following value chains that can be developed for improved food and nutrition security in Grenada. These are as follows:

1. Tree Crop Value Chains (cocoa, nutmeg and mace, spices (cinnamon, cloves, pimento, etc.));
2. Fruit Tree Crop Value Chains (soursop, mango, golden apples, avocados, citrus (oranges, grapefruit, limes, mandarins), coconut, banana, papaya, plantain, breadfruit, tamarind, sorrel, etc.);
3. Salad fruits and vegetables value chains:
 - 3.1. Salad fruits (watermelon, cantaloupe, pineapple, pumpkin, squash, etc)
 - 3.2. Salad vegetables (tomatoes, lettuce, cabbages, cauliflower, broccoli, celery, spinach, carrots, corn, pigeon peas, sweet pepper, hot pepper, vegetable spices and herbs, etc);
4. Root Crop Value Chains (yams – Jamaican yellow, dasheen, sweet potatoes, eddoes, tannia, ginger, sweet cassava)
5. Livestock value chains (chicken, pigs, small ruminant – sheep, goats, rabbits)
6. Fisheries Value Chains (tunas, lobsters, shrimp, others);

7. Agro-Products Value Chain (milling products, animal feed, fruit & vegetable juices, jams and jellies, sauces, fresh cut fruits & vegetables, confectionary – chocolate, cocoa balls, tamarind balls, etc,
8. Apiculture Value Chain (honey & other apiculture products)
9. Floriculture Value Chains (cut flowers, potted plants, etc.)
10. Agroforestry Value Chains - Most of the productive lands in Grenada are on slopes. This predisposes them to erosion and in addition to soil loss and damage to the marine environment. The integration of trees in agriculturally productive landscapes leads to multiple benefits, from land fertilizing and regeneration, soil health and food security, to diet diversification, fodder, timber and fuel wood production, diversification of income sources and inversion of the trend towards deforestation. Contour ploughing helps to slow water flow and increase infiltration which reduces erosion, preventing and mitigating the impacts of floods, storms and landslides. It is also highly effective for disaster risk prevention and mitigation.

The challenge for policy formulation is to establish criteria for selection from among the various possible value chains and to prioritize these based on food and nutrition security considerations.

- **Marketing support (product development, promotion, market research, market information, marketing infrastructure):** Small producers generally lack the resources to effectively market their product. In this regard the state may be expected to play a critical role to provide support systems to enable small producers to compete successfully, particularly in terms of exports. The state can play a critical bridging role to facilitate :
 - Market intelligence and research: State agencies can support small firms seeking to access niche markets in a variety of ways;
 - Incubators for encouraging new product or service concepts, export promotion strategies, small-business support systems, youth entrepreneurship programs, initiatives by the Chambers of Commerce, and bank programs, to mention only a few.

State-sponsored activities should include:

- support for market research and analysis;
- attendance at trade shows,
- establishment of distributors and sales organizations,
- development of Diaspora networks,
- creation and management of internet sales sites, and
- Encouragement of university linkages.

The challenge is to develop a mechanism for cooperation, collaboration and joint action between private producers, producers' organizations and the state to efficiently market produce from Grenada and better align production with market requirements.

- **Convenience and value added**

Primary and low value-added products constitute the majority of Grenada's agricultural production and exports. Analysis of production and trade data for 2010 show that 79% of

local production and 86% of exports were comprised of fresh and primary processed products. However, 58% of imports were of processed products.

As discussed above convenience is a major factor determining consumer choice of foods and the challenge here would be to encourage increased production of value added products in an environment where there is under-employment of available technologies by small scale producers with limited access to investment financing.

Vulnerability to Inadequate Food Access

A situational analysis was undertaken to determine the level of vulnerability to food and nutrition insecurity with the context of existing social protection/safety net programmes and to ascertain the accessibility of food to all Grenadians. The analysis was used as evidence to identify the appropriate policy areas of focus that would best achieve accessibility of food to ensure sustainable food and nutrition security in Grenada.

In general, vulnerability in Grenada has been assessed to be due to:

- Chronic poverty and the inter-generational transmission of poverty as well as transient poverty
- Low levels of human capital development among children and adolescents
- High unemployment and risky lifestyles among the youth population
- Limited or no income due to unemployment, poor health status or disability among the working age population
- Low income levels among the elderly because of retirement and/or poor health status
- Special groups: single headed households, migrants, persons living with HIV/AIDS, elderly who care for children

In summary, the groups that are most likely to be vulnerable to food and nutrition insecurity are:

- Households that fall below the poverty line, particularly those households that fall below the indigence line, in other words, low income households
- Children and adolescents with little education
- Youth without employment
- Adult working poor
- The elderly

It is apparent that the last four groups overlap with households that fall below the poverty line. Children and adolescents with little education are likely to belong to the low income households. The same is true for unemployed youth. Working adults who face uncertain employment conditions and receive low wages are poor. Finally, the elderly generally have low pension incomes, and often also care for children or other people with poor health. Low income households are more often headed by women.

Vulnerable Population: An Alternative List

The vulnerable population comprises persons who are deemed to be at risk/high risk of being food and nutrition insecure in Grenada. According to the Country Poverty Assessment Reports (2008 and 2011) and other supporting documents, vulnerable population groups represent approximately 26% of the total population and include:

- Person living below the poverty line (indigent poor)
- Senior citizens/elderly in households and institutions^{*6}
- Orphans*
- Unemployed single parents (most likely to be women)
- Persons living with HIV (PLHIV)
- Persons with disabilities (physically or mentally challenged)
- Unemployed youth (higher among women)
- Women-headed households
- Seasonal workers^{**7}
- Petty spice traders^{**}
- Pregnant women ^{**}
- Children 0-2 years^{**}
- Girls^{**}
- Working poor^{**}
- Forced Returnees^{**}
- Persons with Mental Illness^{**}
- Subsistence farmers and fisherfolk ^{**}

Between 1998 and 2008, the poverty rate increased from 32.1 to 37.7 percent (headcount ratio), while an additional 14.6 percent were thought to be vulnerable to falling into poverty, though not poor at the time.

Location of Vulnerable Population Groups

Vulnerable population groups can be found throughout Grenada. The highest poverty incidence is generally found in the rural communities. The parishes of St. Patrick and St. Mark had in 2008 the highest poverty incidence: 56.7 and 54.5 percent, respectively. The poverty gaps (16.0 and 18.3 percent, respectively) and poverty severity (6.8 and 9.2 percent, respectively) were also the highest in these two parishes. This compares to national averages of 37.7 percent (headcount index, 10.1 percent (poverty gap) and 4.0 percent (poverty severity) (CPA 2008).

Underlying Causes for Food and Nutrition Insecurity

In Grenada, the major contributors of poverty are unemployment (estimated at 25 percent in 2009), underemployment, inadequate income-generating activities, and little access to opportunities for skills development which in turn are affecting the ability and adaptability of households to achieve adequate levels of food and nutrition security. In Table 1 below vulnerability is classified by factors that contribute to poverty and identifies population groups most suffering from these vulnerabilities. The identified vulnerable groups are not mutually exclusive classifications.

⁶ * means that there are targeted programmes in place for this group

⁷ ** means that there is no programme that specifically targets this group

TABLE 1: Vulnerability Profiles of Specific Groups

VULNERABLE GROUPS	VULNERABILITY BY INCOME	VULNERABILITY BY AGE	VULNERABILITY BY EXTERNAL CRISES	VULNERABILITY BY DISEASE (CNCDs, HIV&AIDS, Mental Illness, Anaemia)	VULNERABILITY BY NATURAL DISASTERS
Women-headed households	X		X	X	X
Youth	X	X	X	X	X
Elderly	X	X	X	X	X
Children	X	X	X	X	X
Small-scale farmers and fisherfolk	X		X	X	X
PLHIV	X			X	X
Young girls	X	X	X	X	
Working poor	X		X	X	X
Persons with mental illness	X			X	

Food Prices

Another factor that poses a risk to adequate food access, particularly among low income households, is the trend in food price inflation. During the past decade, annual food price inflation rates consistently outweighed non-food inflation rates. Between mid-2006 and mid-2008, food price inflation amounted to 21 percent, while non-food price inflation to 8 percent, while food price increases amounted to 59 percent of overall inflation. Overall inflation was estimated in 2011 to be 3 percent, and was projected to be 3.2 percent in 2012.

Food Utilization and Nutritional Adequacy

Over the past twenty years or more, Grenada has been faced with a shift in the consumption patterns of its people. Traditionally the consumption pattern was based on foods grown on their land or backyard garden such as corn, peas, cassava (farina) and ground provision some of which was saved for the dry season. Part of this tradition is still being observed but mostly in

the rural parishes. This change from a traditional diet made of mostly complex carbohydrates and locally produced fruits and vegetables to a diet of imported refined products is as a result improvement in the local economy, more women in the workforce, rising middle class, mass marketing and, as such, there is an increase in the consumption of processed imported foods, sugar and fats. This is reflected in some of the top food items imported by Grenada; namely: Chicken (Protein and fat), baked goods (fats, sugar and refined flour) and fats and oils. Previously protein was obtained from poultry reared in the backyard; fish caught by local fishermen, meat reared and some imported pickled items.

In addition there is an increase in the number of food outlets within that same time frame indicating the consumption of meals away from home. The meals are usually balanced (four of the six food groups), but the proportion of vegetables to a standard serving is very small and they are usually high in starch and fat. In households where there are limited funds, the funds are used to purchase low cost imported items such as flour, rice, pasta and chicken and are easier to prepare.

This dietary transition being observed, a shift away from traditional to a diet high in energy, protein and fat, is not only seen in Grenada but in most of its adjacent states. This trend coupled with a sedentary lifestyle, lends itself to an increase in nutrition related non-communicable diseases such as diabetes, hypertension, stroke, heart disease and cancer. . Also, the relationship between Genetically Modified Organisms (GMO) and health and the national food supply is to be noted. Recent long term research has shown the negative effects of GMO on CNCD's and others diseases.

Obesity, an underlying risk factor for non- communicable chronic diseases, poor health and reduced longevity, has also been on the increase. This is seen in adults but also in School age children. A recent concluded pilot project conducted by the World Diabetes Foundation (WDF) on "Preventing Diabetes and other Chronic Diseases through a School Based Behavioural Intervention in Four Caribbean Countries" conducted between 2008 and 2011, showed an alarming increase in overweight and obesity. The base line data collected from two intervention high schools indicated that almost one third of the school population is either overweight and or obese. Though there is no comprehensive anthropometric assessment of the population, assessments of some segments of the population are conducted by the Grenada Food and Nutrition Council (GFNC). Some small scale community surveys conducted by GFNC showed a rise in overweight and obesity among women. The 2012 Day Care Survey of 3-5 years old assessed the weight for height of 670 children. The analysis of the data showed 47 children (7.3%) weight indicative of under nutrition (wasting); 6 children (.9 %) indicating chronic under-nutrition (stunting); 18 children (2.69 %) height for weight indicative of overweight and or obesity. More boys had abnormal weight than girls. Compared to the survey in 2009, there was an increase in the number of under-nutrition from 7.9% to 8.2% and also in over-nutrition from 2.2 % to 2.7%. A similar prevalence of relatively low levels of under-nutrition and over-nutrition is seen in disaggregated data for parishes indicate areas of very high levels of malnutrition. These are some of the areas assessed as below the poverty level in the 2008 Country Poverty Assessment (CPA).

Iron deficiency anemia is a major health issue for Grenada and has been on the rise since 2008. Assessment of the hemoglobin (Hb) levels revealed 51% of 1 year old screened for anemia was anemic in 2008; 47% in 2009 and 56% in 2010. This indicates the need for education on

breastfeeding and complementary feeding to increase awareness of their health benefits. Education is also a key component in the prevention and management of chronic diseases. In 2009 of the 3246 persons screened for the first time for diabetes 240 persons (7.39%) tested positive. In 2010, 2420 were screened, 199 (8.22%) were positive and in 2011, 2946 were screened 227 (7.7%) were positive. A similar pattern for hypertensive positive cases for 2009 (8%), 2010 (4.7%) and 2011 (8%) was observed.

Safe food from production to consumption not only improves the health of Grenadians but it is also a part of basic human right. A recent Burden of Illness Study showed that the incidence of food borne illness is not a major problem, but they do occur. These occurrences are seldom reported and do not pose a burden to the country. The National Food Safety Policy recently formulated and ratified by cabinet and enforced by the Ministry of Health has taken into consideration some of the short comings of previous Acts and will be implemented. In addition there are adequate testing facilities for the presence of microorganisms and chemicals by well trained staff at the Grenada Bureau of Standard and the Produce Chemist Lab.

Similarly the water supply is generally safe; although inconsistent supply and contamination during the rainy season could present a problem for diarrheal diseases.

Food Consumption Challenges

- **Influencing dietary choices and preference for more nutrient dense locally produced healthier foods:** Analysis of the composition of average daily diets shows a high dependence on imported refined carbohydrates, fats and oils in the typical Grenadian diet. Use of these products is reinforced by convenience, relatively low prices and aggressive promotion. Excessive use of these products have been associated with a wide range of non-communicable diseases such as various types of cancers, particularly colon and rectal cancer, diabetes, hypertension and heart diseases, obesity, etc. New evidence are also suggesting that the increased use of genetically modified products (GMO's) such as corn, soya beans, etc. in the food chain has been associated with increased incidences of the diseases referred to above as well as a number of new diseases that are becoming increasingly common.

With increased focus on health and wellness and healthy lifestyles the challenge is to get our people to eat more of the natural carbohydrates and nutrient dense foods such as fruits and vegetables that are more nutritious and healthy and are produced locally.

Recent studies have shown that the main factors driving consumer choices are:

- i. prices, especially as they relate to the affordability of food;
- ii. incomes, as a driving force behind changes in eating habits, in particular increasing the demand for convenience;
- iii. time constraints and time preference, as links to healthy eating habits and as forces behind current trends in eating patterns; and
- iv. Information and knowledge, having a prominent play as counter balances to economic forces driving eating habits.

Stability in Food Availability and Access

Grenada experienced instability in food and nutrition security for a short period following Hurricane Ivan in 2004 when food availability and accessibility were a problem. Climate variability and change will increase the risk of natural hazards such as droughts and floods and consequently disasters. Shocks from natural hazards occurring overseas could also result in instability in local food and nutrition security.

The Ministry of Agriculture Draft Interim Food Security Strategic Plan considers stability in the context of accessibility and availability at the national and household levels. It identifies natural hazards in particular hurricanes as the main threat to availability and accessibility of food supplies because of the problems experienced in Grenada in the aftermath of Hurricane Ivan in 2004. However climate change is featured prominently among those factors contributing to the increased vulnerability of the Caribbean. There are also other man made and natural hazards, which have the potential to negatively affect the stability of food and nutrition security in Grenada. They include the global economic crisis, the La Niña and El Niño phenomena and problem of praedial larceny. However, the changes in the global climate system have the greatest potential to affect stability of food and nutrition security in Grenada.

Table 2 shows climate system events and their potential impact on accessibility and availability of food.

TABLE 2: Climate Events and their Impact on Accessibility and Availability of Food

Events	Impact on access and availability
Changes in precipitation patterns	Changes in local rainy and dry seasons (growing seasons) affecting rain fed agriculture Prolonged dry periods reducing global food production making less available for export and increasing the prices
Increase in temperature	Reduction in food crops production (only crops tolerant of increased temperatures would grow), negative response by some crops and odisslon
Storm surge	Damage to fishing boats /gear and fisheries habitat
Increase in intensity of hurricanes	Damage to tree crops/vegetable production/fishing boats , gear/livestock housing and stock and loss of planting

	material
Out breaks of pest and diseases	Destruction of food crops and loss of planting material
Invasive species	Destruction of food crops and loss of planting material
El Niño	More frequent drought events resulting in reduction of food production especially vegetable production and loss of planting material. Loss of animals especially in Carriacou.
La Niña	More frequent flooding events resulting in loss of livestock and damage to vegetable production
Global financial crisis	Less money available to purchase imports
Regional and international disaster events	Disruption of regional and international transport and food supplies especially meat

The challenges for improved food and nutrition security can be summarized as follows:

1. Improving domestic self-sufficiency and reducing dependence on imports to meet food requirement;
 - 1.1. Increasing domestic production of salad fruits, vegetables and root crops in particular;
 - 1.2. Improved post-harvest handling of local produce
 - 1.3. Alignment of production with markets using the value chain approach
2. Encouraging changes in dietary habits
 - 2.1. Aggressive promotion of the health and nutritional benefits of healthy diet
 - 2.2. Investment in value added convenience products
3. Improving the balance of trade situation by increasing exports of traditional and nontraditional crops particularly to the CARICOM and OECS Communities;
 - 3.1. Removal of impediments to regional trade (transparent phytosanitary regulations; uniform port and customs charges; supporting infrastructure)
4. Strengthening the production and marketing capacity and infrastructure for non-traditional fruits, vegetables and root crops, livestock (poultry, pigs, and small ruminants).
 - 4.1. Support for initiatives to improve transportation and distribution services such as the ODTC

5. Influence the trade and regulatory policies to support increased use of more nutritious and healthy foods.
6. Investment in innovation and research and development
7. Financing the agricultural development process.
8. Development of an information platform to drive the process

THE POLICY AND PROGRAMME ENVIRONMENT FOR FOOD AND NUTRITION SECURITY

Food and Nutrition Security Policies and Programmes

Detection, Prevention and Treatment of Iron Deficiency Anemia

This program provides for the screening, prevention and control of iron deficiency anemia in children from birth to five years and pregnant women. Children are tested and diagnosed at one year based on hemoglobin values used to define anemia in Grenada. Guidelines are set forth for the appropriate treatment. Pregnant women are tested at their first visit, at 32 weeks and six weeks after delivery and appropriate treatment administered. Over the past three years the number of children screened for anemia at 1 year has dropped significantly due to the lack of HemoCue systems and reagent.

Food and Nutrition Policy and Plan of Action for Grenada, December 2007

This document described the role of the Ministries of Health, Education and Agriculture in the area of food and nutrition security and the programmes to be implemented to realize same. There is no document to inform whether this policy was evaluated and as such, objective information on the status of what was achieved is not available.

Food Security for the Hungry-Ministry of Finance/EU (2012)

The programme is designed to target children through interventions that provide food directly to, and monitor the nutritional status of the most vulnerable children and builds on strategies of existing programmes aimed at improving food security in poor households and includes improving the monitoring and evaluation capacity. The activities include (i) expand and enhance the school feeding programme by adding a breakfast component to the existing programme, (ii) expand and enhance the school agricultural programmes by updating policies and guidelines of the school-based agriculture programmes (SAP) and expanding the enrollment and production of the programme, (iii) improving food security in poor households by providing food directly to families of children, nutrition counseling, and capacity building, and (iv) monitoring and evaluation activities for the programme. However, the implementation of the programme is dependent on donor funding.

Food Security Strategic Plan for Grenada 2009

This document was developed by the Food Security Programme Unit/Ministry of Agriculture and states the 1996 definition of Food security. It was developed as a short term plan as a preparation for the now proposed comprehensive policy and action plan. The Plan provides information on the status of food security in Grenada based on the four components of availability, accessibility, utilization and stability. It presented strategies to address food security issues. The institutional framework was not addressed in the plan.

Food and Nutrition Policy and Plan of Action for Grenada (draft)- (2007)

The policy sought to address issues related to food and nutrition in a coordinated manner. Among its objectives are: (i) improve nutritional care for the socially vulnerable, (ii) strengthen the food and nutrition surveillance system, and (iii) improve household food security. GFNC was given the mandate to ensure the coordinated implementation of the food and nutrition-related activities. In this document, the socially vulnerable group comprises senior citizens, the disabled, unemployed single parents, some PLHIV, and some children 0-8 years.

Grenada Food Security Enhancement Programme 2010

This programme was pronounced in the 2010 Budget and focused on the promotion of the consumption of locally produced food and increased the production of certain food crops such as corn, yam, sweet potatoes, dasheen and cassava and increase use of these crops in the local diet. There is no evidence of formal evaluation of this programme.

Interim Food Security Strategic Plan (2009)

The strategies mentioned in the document include (i) greater targeting of persons registered to receive social safety net programmes, (ii) improvements to the School Feeding Programme, (iii) Household and School Gardening Programme, (iv) Development of guidelines on food consumption and incorporating low-priced items into menus for low-income households and communities, (v) food distribution programme to provide temporary support to low income needy households, and (vi) improvement in the linkage of the school feeding programme with the agricultural sector.

Regional Food and Nutrition Plan, 1973

Based on the literature review, attempts to address food and nutrition security were undertaken since 1973 with the development of the Regional Food and Nutrition Plan. There is not much information on the results of this plan. In July 2009 - which is thirty-six years (36) later - Heads of Government mandated that "*an integrated multi-sectoral and regional approach be taken for the achievement of food and nutrition security*". This mandate is known as the Liliendaal Declaration. The 1973 plan was referenced in the 2010 policy document.

Regional Food and Nutrition Security Policy, 14 October 2010

The policy was approved in 2011 and the Action plan covers a period of five years, ie. 2012-2016. This policy focused on increase regional food security; strengthen agricultural

development; and contribute to national and regional development. It discussed two critical challenges, that of land use planning and inadequate water resource policy and the implications that agriculture lands were used for commercial and residential purposes and that poor water management and infrastructure caused great losses to the agriculture sector due to inability to respond effectively in times of drought or excessive rainfalls. The document also listed a number of issues to be addressed to ensure regional food and nutrition security.

This document referenced international conventions such as the International Covenant on Economic, Social, and Cultural Rights and the Convention on the Rights of the Child.

The document alluded to the global, regional and national institutional framework in general in which Ministries and Institutions and some of the organs of CARICOM have a critical role to play.

The Action Plan however directed that national food and nutrition security policies and action plan be developed within the framework of the regional policy. The fact that the implementation of this policy hinges on systems and standards that are not yet in place at the national suggests that implementation of the regional policy would need a phased approach.

School Feeding Programme

The mission of the School Feeding Program (SFP) is to enable all Primary and selected Pre-Primary and Secondary Schools to give improved services through the provision of a nutritionally adequate meal to indigent children from low income families, single parent household and distant homes.

The objectives of the program are to:

- Help improve school enrollment and regular attendance therefore minimizing drop out and repetition rates.
- Improve an awareness of the nutritional value of local foods thereby making maximum use of these foods in the preparation of school meals.
- Improve local food production at school level for utilization in the program.
- Refurbish and upgrade school kitchens and dining facilities to accommodate an expanding program.

This programme currently provides lunches to 9,500 children in all public primary schools, 9 secondary schools, and 15 pre-primary schools and day care centres, with free meals being provided to students who are identified as poor. However, there is no information on the number of students who receive free meals. A school feeding manual gives practical guidance for food services, management techniques, and principles of food preparation and nutrition. Food is mainly imported for the school feeding programme with the exception of fruits and

vegetables which are procured locally through the farmers and sometimes through the 4H network which is involved in a school garden programme.

However, there is no school feeding policy guiding the programme. The programme is also plagued with inadequate human resource. Funding is ad hoc and has experienced delays in paying the supplier for the imported goods. Schools may not always have the required funds to pay the local farmers for the fruits and vegetables. No clear procedures for the allocation and recording of free school lunches, the waivering of school meal fees, and the process by which the needy students are identified. In the secondary schools, there is reluctance to request fee waiver due to the stigma and discrimination attached to receiving a free meal.

Relevant Sector Policies and Programmes

Environmental Health Department(EHD):

The EHD is responsible for monitoring & ensuring the best Environmental Health practices are adhered to at all times. Its Public Health Safety Services include but not limited to the following: food safety investigation, water quality, waste management, monitor and evaluation, control and evaluation of the spread of infectious diseases and investigate as well as control the spread of hazardous materials.

Grenada Agricultural Policy (draft)-(2006)

The vision statement and goal of the Grenada Agricultural policy mentions that it will guarantee an improved food security status for the people of Grenada. Also, one of the objectives is to improve the national food security status of the country.

Fisheries Policy-Grenada (2012)

The Fisheries Policy contains two (2) themes that are directly related to food and nutrition security. Theme 1: Enhancing the status and capacity of fishers. Policy issue: Fishermen taking more responsibility for their own socio-economic situation. Theme 4: Maintaining the sector's role in sustaining livelihood of the poor. Policy issues: Fisheries Livelihood for the poor and Segments of the fishery available to the poor.

4H Network Programme

The 4H Network programme in 61 primary schools and 5 secondary schools and is located in the Ministry of Agriculture. The programme is mainly concentrated on poultry and vegetable gardening. The produce is sold to the general public in the markets and through the school feeding programme. The programme is not specifically developed to address vulnerability but rather to encourage children to become involved in school and by extension home gardening initiatives. However, there is no system in place to work with vulnerable families located close to school compounds.

Grenada Agricultural Policy (draft)-(2006)

The vision statement and goal of the Grenada Agricultural policy mentions that it will guarantee an improved food security status for the people of Grenada. Also, one of the objectives is to improve the national food security status of the country.

Grenada Investment Promotion Strategy 2012

This document described the thrust of Government to move away from the two 92) pillars to five (5) transformational sectors. Furthermore, the Strategy underlined the need of forging linkages between the sectors of Agriculture and Tourism to capitalize on the inherent ability of the Tourism sector to diversify the economy, stimulate entrepreneurship, be a catalyst for investment and assist in social development in local communities. The Strategy recommends strengthening of economic planning and raised as a critical challenge the absence of development strategies for the five transformational sectors. The Strategy made mention of the investment opportunities for Grenada as a small and vulnerable Economy (SVE) based on the WTO classification of countries as developed, developing and least developed.

The Strategy also present a detailed institutional SWOT analysis of the Agriculture Sector.

Grenada Market Access and Rural Enterprise Development Project 2011-2017

This programme is a six year programme and will be implemented from 2011-2017. It is financed by the Government of Grenada (GoG) with additional financing through a loan agreement with the International Fund for Agriculture Development and the Caribbean Development Bank. The allocate funds is US\$8.5 million.

The goal of the programme is to contribute towards the reduction of poverty in 50 rural communities in Grenada and Carriacou. The target groups are unemployed and underemployed men and women, crop farmers, fisher folks, livestock farmers, agro-processors, craft producers, community based organizations, members of producers groups, associations, cooperatives and vulnerable persons to build their capacity and increase their income and livelihood. The specific objectives are: (i) increase the level of empowerment of rural communities and the capacity of males and females to participate in development opportunities, (ii) create employment opportunities for young rural men and women, (iii) establish/strengthen rural businesses and microenterprises, and (iv) improve sustainable agriculture through linkages to production chains, access to markets, and financial services.

The programme has a rural financial facility and assistance will be given in the areas of enterprise development, market access, product development in the areas of livestock, fish, crop, production, agro-processing and other services. The project was derived from a reformulation of another project and hence it is too early to measure outcome and impact. However, a linkage between the proposed Food and Nutrition Security Policy with the MAREP programme would be necessary to address issues of capacity building and poverty reduction.

Programme for Adolescent Mothers

The programme for adolescent mothers is designed to empower teenage mothers and pregnant adolescents by providing counseling and continuing education through an integrated programme of traditional academics, skills training, and health and family life education. With regards to food and nutrition security, the programme has a kitchen garden component and the programme is included in the school feeding programme. Additionally, the girls are given free breakfast and the babies are also given free milk and lunch. Nonetheless, there is no linkage with the 4H Network School Gardening Programme. Donation funding is affecting the ability to purchase the desired amount of fruits and vegetables on regular basis.

Programmes involving Private Sector and Civil Society Organizations

In addition to the government employment initiatives, the private sector is also involved in providing employment to vulnerable population as well as employment within vulnerable communities. Some of the civil society organizations are directly involved in food production with the aim of producing high quality foods. The challenge is limited collaboration between 4H network and other government-based programmes and community-based agricultural organizations.

SEED Programme

The SEED (Support for Education, Empowerment, and Development) is a consolidation of existing cash assistance programmes namely transportation, necessitous, into a cash transfer programme. The recipients are selected via a beneficiary identification system which is developed using an appropriate means test. The programme is developed to build capacity and to break the intergenerational cycle of poverty by the addition human capital development conditions of regular attendance at school, visits of infants to health centres, pre-natal visits for pregnant women. The programme provides monetary transfer to poor households conditional upon their compliance with programme requirements. The conditionality is 95% attendance in school, registration in the nearest health centre, adhering to regular health checks. The expected outcome is to provide benefits for at least 30% of the children who are poor instead of the existing 10% of the poor children who are now receiving some type of public assistance.

However, the Social Safety Net Assessment (2009) stated that the analysis of the parish distribution of beneficiaries and of poverty suggested that errors of exclusions (eligible persons who were not in the programme) were more pronounced in some parishes, with St. Patrick and St. Andrews being particularly underserved. The student assistance schemes are only reaching 10% of the students who are poor. The conditionality of school enrollment/attendance in the SEED is not linked to school performance. CPA (2008) showed that although 97% attendance in secondary school with net enrollment of 78.4% only approximately one in ten students (14%) achieved 5 or more CXC passes. This low achievement rate has implications for the ability to participate formally in the productive sector of the economy.

Social Safety Net Policy Framework (draft)- (2011)

The Social Safety Net Policy Framework provides a new approach to deliver social assistance and covers all the social safety net programmes. The new approach embraces the strategies to promote equitable and sustainable development outcomes, to reduce social vulnerability, to achieve MDG 1 (halving poverty), MDG 3 (gender equality and empowerment), MDG 5 (maternal health, and MDG 6 (combating HIV and AIDS), and to strengthen the policy and legislative frameworks to meet the international commitments that mandate the provision of social safety nets.

In Grenada the following targeted programmes have been implemented to contribute to improving food access for vulnerable population groups as follows:

- SEED (Support for Education and Empowerment Development)
- School Feeding Programme
- Programmes of the Grenada Food and Nutrition Council
- Programme for Adolescent Mothers
- Market Access and Rural Enterprise Project (MAREP)
- 4H Network Programme
- Food Security for the Hungry-Ministry of Finance/EU (2012)
- Programmes involving Private Sector and Civil Society Organizations

Table 3 shows the vulnerable groups that are covered by the existing programmes that are described above.

TABLE 3: Vulnerability Groups by Existing Programmes

GROUPS	SEED	SCHOOL FEEDING	PMTCT	PENSION	PAM
Female-headed households	X				
Youth		X (in some secondary schools)			X (young girls with children)
Elderly				X	
Children	X	X (primary schools)			
Small-scale farmers and fisherfolk					

PLHIV			X (babies 0-6 months)		
Young girls					X
Working Poor					
Mentally Ill					

Overarching Development and Poverty Reduction Policies

Alternative Growth and Poverty Reduction Strategy-2012

The Alternative Growth and Poverty Reduction Strategy (AGPRS) was developed by the Non State Actors Panel (NSAP) as an alternative response to the GPRS document that was developed by the government. AGPRS is expected to be a more coherent and have a prescriptive approach to poverty reduction in Grenada. This document discussed the high level of food import and recommended a programme of agricultural production for domestic consumption in order to increase food security, reduce import bill of food and address the imbalances of the Balance of Payments.

Grenada Growth and Poverty Reduction Strategy, 2012-2015 (Draft May 27, 2011)

This policy document was developed with funding from the Caribbean Development Bank (CDB) and articulates " the strategic vision for promoting growth and reducing poverty and the related objectives and key actions to be pursued. It highlighted the removal of barriers to access services and opportunities and the expansion of the economic space, i.e. employment creation and involvement of all social partners.

This document alluded to the five transformational sectors but included also the Construction sector. The major differences in income distribution were discussed. The strategy is aligned with the Millennium Development Goals and the Country Poverty Assessment of 2008. Two main areas of strategic actions were listed: (i) partnership for achieving food and nutrition security and (ii) reverse the amount of local revenue spend on food import.

The following key priorities were identified as it pertains food and nutrition security:

- Food security and Cuisine development
- Land reform
- Mainstreaming of Climate Change Adaptation; and
- Development of projects in Agribusiness support and Coastal fisheries development

Grenada National Strategic Development Plan 2012-2017

This plan consists of twelve (12) goals of which three (3) are relevant to Food and Nutrition Security. These are goal 9, 10 and 12.

Goal 9: Agriculture - An enhanced contribution of the agricultural sector to the national economy and to livelihoods.

The related objectives are as follows:-

- 9.1 To reform the agricultural sector, enhancing its contribution to food security and exports
- 9.2. To promote the interest of the younger population in the sector as a sustainable means of employment and income
- 9.3 To rehabilitate and reform the nutmeg and other spice industries
- 9.4 To promote non-traditional agricultural crops and products
- 9.5 To promote institutional linkages between the Ministry of Agriculture and the schools, the tourist, trade, Commodity Boards and Farmers' Organisations
- 9.6 To promote Spice Isle as a brand
- 9.7 To secure funding and financing arrangements for agriculture
- 9.8 To secure markets for agricultural products

Goal 10: Agro-processing - An improved contribution of agro-industries to national development

The related objectives are as follows:-

- 10.1 To develop and promote unique product lines e.g. spice value added products
- 10.2 To arrest the decline in exports and address issues such as the high cost of manufacturing, low economies of scale and lack of finance
- 10.3 To improve the availability of fruits and other raw material inputs
- 10.4 To provide skilled manpower to the sector

Goal 12: Economic Infrastructure

- 12.1 To reduce the dependence on imported energy
- 12.2. To address the high cost of utilities
- 12.3 To reduce the vulnerability of infrastructure /distribution lines to natural hazards
- 12.4 To improve the flexibility of specialist training in the utility sectors and to address the issue of the high cost of training in this sector
- 12.5 To ensure a sustainable supply and quality of water to meet domestic and business requirements
- 12.6 To regularize the land survey and sale process

Growth and Poverty Reduction Strategy (2011)

The Growth and Poverty Reduction Strategy (GPRS) is a 5-year road map (2012-2015) for poverty alleviation and sustainable poverty reduction through economic growth. The vision and guiding principle include the protection for the most vulnerable. One of the strategic orientations of the GPRS is the promotion of human development and social safety which discusses the provision of social support for those most in need, with special emphasis on children and youth living in poverty. The document is expected to mainstream MDG

achievement into Government's economic and social development strategies and is specifically related to MDG1 which is halving hunger.

International Treaties Relevant to Food Security

Grenada has ratified the following six International Treaties:

- Inter-American Institute for Cooperation on Agriculture (Ratified 22nd December, 1980)
- International Plant Protection Convention (Accession in 1985)
- International Covenant on Economic, Social and Cultural Rights (Accession 6th September, 1991)
- Cartagena Protocol on Bio-safety (Ratified 5th May, 2004)
- Food and Agriculture Organization of the United Nations; and
- Codex Alimentarius

Grenada is presently not a Signatory Party to the International Treaty on Plant Genetic Resources for Food and Agriculture. It is recommended that Grenada becomes party to this Treaty since the country is already a Party to the Convention on Biological Diversity. The Convention on Biological Diversity provides a framework for the conservation and sustainable utilization of genetic resources, but does not address the particular problems associated with Plant Genetic Resources for Food and Agriculture (PGRFA).

The international Treaty on Plant Genetic resources for Food and Agriculture was negotiated in order to address the special problems associated with PGRFA. It was adopted by the FAO Conference in November 2001 and came into force on 29th June, 2004. The Treaty provides, in particular, for the establishment of a Multilateral System - as opposed to the implementation through bilateral negotiations - of access and benefit-sharing for plant genetic resources of the major crops of most importance for food security and on which countries are most interdependent.

THE CURRENT INSTITUTIONAL ENVIRONMENT FOR FOOD AND NUTRITION

SECURITY

Situational analysis of institutional framework for inter-sectoral policy

implementation in Grenada

The CARICOM Regional Food and Nutrition Security Policy and Action Plan articulate the importance of integration, policy and implementation coherence, consistency of efforts relative

to food and nutrition security at the national level and the need for donor coordination due to the fact that such policies is multi-disciplinary in nature.

Furthermore, the regional policy alluded to following considerations with respect to Institutions:

- Governance arrangements relative to food and nutrition security;
- Building/reforming existing institutions and realignment of functions of organizations with a role to address agriculture and food security; and
- Strengthening of coordination and partnerships

The situational analysis of institutions in Grenada is informed by the abovementioned considerations as well as by the existing global and regional initiatives and institutional arrangements which are as follows:



General Assessment of the National Institutional Environment

Factors	Assessment
Institutional mandate	The mandate for the key primary stakeholders is in place. However, the mandate of some of the secondary stakeholders need to be revisited and may be broadened to allow for dealing with emerging issues relative to Food

	and Nutrition Security.
Policies and Protocols	<p>There are a range of policies that need to be aligned so as to coordinate actions between Ministries/Departments and other non-government agencies</p> <p>No evidence of formal horizontal protocols to guide actions between some of the key stakeholders</p>
Processes of shaping decision-making	<p>Food and Nutrition security is not a standing item on the agenda of the Senior Managers' Board. Being a multidimensional issue, it may be appropriate to place it on the agenda and do so frequently.</p> <p>The Ministry of Agriculture, Forestry and Fisheries constituted the National Food Security Committee which is an inter- sectoral platform for stakeholders to work together to address food and nutrition security matters. However, the Committee meetings are infrequent and functioning of the Committee needs to be revisited. The reporting requirements of the Committee to cabinet need to be established.</p>
Level of compliance with legal and other International reporting requirements	<p>Efforts are being made to submit reports on compliance with treaties and conventions. Tracking of compliance is constraint by the number of staff employed in this area.</p> <p>The Ministry of Foreign Affairs has no legal officers on staff - as is customary in many CARICOM member countries - and referral of matters to the Ministry of Legal Affairs delay responsiveness.</p> <p>In some instances, data is outdated and as</p>

	<p>such the impact for national policy outcomes cannot be adequately substantiated. No evidence of formal protocols on data collection with respect to Treaties associated with Food and Nutrition Security.</p>
Assignment of resources	<p>Absence of a strategic commitment to assign financial and human resources to strategic policy areas in order to build capacity to carry out the mandate.</p> <p>It should be noted that the number of staff in the Planning Unit of the Ministry of Agriculture was increased from 2 to 5 and capacity building training exercises has been conducted. However, the recently conducted Human Resource Audit revealed that officers were under loaded - an average of 25% to 30% was noted - which suggest that the level of efficiency should be improved.</p>
Mobilization of resources	<p>Many of the stakeholders are dependent on local revenue and as such shortfalls in local revenue impact adversely on the implementation of programmes</p>
Mode of decision making	<p>Seems to be ad hoc</p> <p>Absence of formalized horizontal system to facilitate strategic communication between the sectors of Agriculture, Trade, Health and Nutrition</p>
Processes and procedures	<p>Monitoring and evaluation systems are weak and not coordinated which result in delays of reporting and communication of strategic information to various stakeholders. Implementation of programmes is being realized at a high administrative cost.</p>

	Insufficient leverage of technology to collect and analyse data so as to inform monitoring and evaluation
Accountability mechanisms	Absence of formalized interdepartmental accountability mechanisms. The SMB is the only formal interdepartmental governance structure.
Policy implementation	Evidence of efforts of public-private dialogue, but concerns were expressed about inadequate feedback mechanisms, a general low rate of implementation of programmes and ability to sustain programmes
Portfolio changes and frequency of changes at the level of the Permanent Secretary	The number of changes seems to have an adverse impact on operations of the Ministry/Department and disrupt programme implementation or the level of efficiency in the implementation.

Stakeholder Institutions and Organizations

PRIMARY STAKEHOLDERS	STAKE IN THE PROPOSED FOOD AND NUTRITION SECURITY POLICY
Ministry of Agriculture Forestry and Fisheries	<p>Mandate to administer food and nutrition security programmes</p> <p>Oversight responsibility regarding the National Food Security Committee</p> <p>Mandate to develop, implement, monitor and evaluate the proposed National Food and Nutrition Security Policy</p> <p>Implement programmes through Extension Division</p>

	<p>Optimise use of land use tools and agricultural planning methodologies</p> <p>Strengthen communication systems with respect to agro-meteorological data so as to inform actions of all stakeholders</p> <p>Conduct Agricultural Census</p>
Ministry of Health	<p>Mandate to implement anaemia protocol and collate and analyse data on health status of the population.</p> <p>Implement protocol for health surveillance, inspection and certification of businesses in the Agriculture sector in collaboration with other institutions such as Grenada Bureau of Standards.</p>
Ministry of Finance	<p>Allocation and disbursements of financial resources to implement policy</p>
Ministry of Education and Human Resource Development	<p>Implementation of school feeding programmes that satisfy the nutritional requirement for children and as such contribute to healthy growth and development</p> <p>Administrate Food and Nutrition in the curriculum of Secondary schools</p>
Ministry of the Environment, Foreign Trade and Export Development	<p>Issuance of import licences</p> <p>Mandate to coordinate/mainstream climate change adaptation in national programmes and plans</p>
Ministry of Legal Affairs	<p>Track compliance at the national level with Treaties associated with Food Security</p>

Ministry of Carriacou & Petite Martinique/Agricultural Division	Mandate to develop programmes and implement same relative to the agricultural sector in Carriacou and Petite Martinique
Ministry of Social Development	Develop, implement and monitor social safety nets programmes Create linkage between the proposed Food and Nutrition Security Policy, SEED and the Social Safety Net policy Framework
Grenada Food and Nutrition Council	Implement policies and protocols in the area of nutrition security, monitor babies with low birth weight and support pregnant and lactating women through services of community health centres Implement national food based dietary guidelines Create awareness on national recommended nutrient intake or equivalent tables
MNIB	Marketing of agricultural produce of Grenada; encouraging the production of local food crops by providing an outlet for farmers to sell produce and sell specified imported commodities
SECONDARY STAKEHOLDERS	STAKE IN THE PROPOSED FOOD AND NUTRITION SECURITY POLICY
Ministry of Foreign Affairs	Reporting on Treaties and Conventions associated with Food security
Ministry of Tourism and Civil Association	Issue information on weather reports to the relevant stakeholders in a timely manner so as to inform agricultural planning and response plan for disaster management
Ministry of Housing, Lands and Community	Community Development: implement

Development	community projects to create access to farms Lands: prepare Conveyances for signing by Governor-General
Ministry of Youth Empowerment and Sports	Alignment of National Sports policy with the proposed policy on food and nutrition in the are of national programmes for physical activity
Ministry of National Security	Enforce the law to mitigate against the social risk of praedial larceny
Ministry of Works, Physical Development and Public Utilities	Implement programmes to maintain and expand the feeder roads network
Ministry of ICT, Information and national Mobilization	Leverage technology to provide public information and promote public education programmes
Ministry of Finance/Department of Cooperatives	Implement programmes at the community level with commodity, farmers and fishermen associations
Grenada Industrial Development Corporation	Create linkages between the Grenada Investment Promotion Strategy and the proposed Food and Nutrition Security policy by establishing investment objectives for the Agribusiness sector
NAWASA	Implement Water for Agriculture programmes
Financial Institutions and Credit Unions	Develop programmes to address matters of agricultural financing and insurance
IAGDO	Advocacy of pro-poor policies and public education in communities on food and nutrition security matters
Development partners: IICA, PAHO, FAO, Chinese Agricultural Mission,	Provide technical assistance and funding in the development and implementation of the policy and related protocols and guidelines

	Support for inputs in the agricultural sector
Farmers Associations	Implement programmes to support farmers
Fishermen Associations	Implement programmes to support fisher folks
Poultry Associations	Implement programmes to support poultry farmers
Cabinet Office	Coordinate reporting to the Cabinet to inform international reporting on food and nutrition matters
Cabinet	Clear directives for Ministers in sharing the vision of Food and Nutrition Security Designate a Champion for food and nutrition security
Agricultural Input suppliers (seeds, tools, agrochemicals) Renwick & Thompson Farm & Garden Centre O'Neals Agri supply shop Sauteurs PJL Enterprises Grenville	Support for agricultural programmes relative to expansion of local food production
The Grenada Chamber of Industry and Commerce	
Faith based organizations	Advocacy of nutrition awareness amongst citizens
Grenada Bureau of Standards	Mandate regarding monitoring of food safety and enforcement of standards
Suppliers of Planting materials: Agricultural Stations and Private Nurseries	Collaboration mechanism between public and private nurseries to ensure that supply meets the demand of the agricultural sector

National Food Security Committee

The Government of Grenada has recognized that in order to achieve long term food and nutrition security a more holistic approach has to be embraced. This challenge of food security being multi sectoral and multi dimensional was acknowledged by the Cabinet of Ministers, Government of Grenada as an area for strategic focus in that food and nutrition security is critical for sustainable social and economic development. In that connection, Cabinet gave approval for the establishment of a National Food Security Committee on 18th August, 2008 which comprised representatives of the following institutions and organizations:

- Ministry of Agriculture
- Ministry of Finance
- Ministry of Health
- Ministry of Education
- Ministry of Youth Empowerment and Sports
- Ministry of Social Development
- Marketing and National Importing Board
- Grenada Food and Nutrition Council
- Non-Governmental Organisations
- Farmers Association
- Private Sector; and
- Food Security Programme Manager, Ministry of Agriculture

The responsibilities of the National Food Security Committee were defined as follows:-

- Develop a comprehensive, coherent national plan for improving the Nation's food security;
- Monitor the progress of the plan;
- Ensure co-ordination, collaboration and coherence of activities; and
- Set targets for purposes of monitoring and evaluating the performance of the plan, it's implementing components and personnel.

Grenada Food and Nutrition Council

The Grenada Food and Nutrition Council (Council) was established in 1980 to promote the nutritional well being of all segments of the population and has done so through many programs. The Community Nutrition Program is serviced by community nutrition officers assigned to each parish. The Grenada Food and Nutrition Council offers a variety of products and services to individuals and communities through nutrition education, nutrition counseling, surveillance, product development and training, and community nutrition programmes in group and individual sessions at health facilities and at homes on healthy eating, healthy eating during pregnancy, breastfeeding, complementary feeding, meal preparation, food sources of iron etc.

The target population comprises children 0-5 years especially low-birth weight babies, pregnant and lactating women, persons diagnosed with CNCs, the elderly in geriatric homes, and community groups interested in food-related training.

In addition, low birth-weight babies and underweight children are obtained through monitoring and referrals from hospitals, community health facilities, private doctors and members of the community. There is however a gap in the referral system for mothers tested positive for HIV and HTLV. The Council also monitors and evaluates children identified as mild, moderate or severely malnourished and provides food parcels on a monthly basis. The content of parcels is not consistent due to the dependency on funds raised by the Council through its caterings services and donations from businesses and other charitable organizations. The Council also conducts on a monthly basis Nutrient cost analysis for food items 2400 calories diet, promotes the Food Based Dietary Guidelines for Grenada, community training in meal planning and preparation and develops new recipes and products.

Despite a significant number of children being identified as being 'food insecure', the GFNC has only identified 19 children in the programme hence not all children are being targeted for the food assistance programme. The programme is also highly dependent on food donations for distribution to identified vulnerable families. There is no linkage with the Ministry of Health 'Prevention of Mother to Child Transmission Programme' which is supplying formula to babies 0-6 months who are born to mothers living with HIV and to follow up with those children subsequently or until the HIV status of the child is known.

FINAL CONCLUSIONS

Although Grenada produces an abundance of food, significant threats to national food and nutrition security remains especially at the household level and among vulnerable groups. Declining acreage under agriculture and the recent negative impact of hurricanes Ivan and Emily (2004 and 2005) have resulted in a decline in local production paving the way for increased imports of food supply. In 2005 over 70% of Grenada's food supply came from imports. Meats especially chicken and cereals accounted for the greatest share of imported foods.

The organization of food production has evolved from estate production to small scale farming. Farmers, fishers and livestock producers are now organizing themselves in formal and informal groups to produce food for local consumption. Agricultural financing, preservation and optimization of limited resources for domestic food products and increasing production for local consumption exports remain Grenada's greatest challenges in food availability

Although food supplies, local and imports, are generally available, there are groups of persons that are at risk to adequate food. These groups are classified as :-

- Households that fall below the poverty line
- Unemployed youth
- Adult working poor; and
- The elderly

Vulnerable groups are found throughout Grenada with concentration in some parishes and communities within parishes. The major contributor to poverty and as a corollary access to food is employment.

Consumption pattern has changed with changing food supply – local products, that are generally nutrient dense are being sidelined for imported processed foods that are generally charged with nutrients –sugars and saturated fats – that are associated with Chronic Non – Communicable Diseases. The challenge is to reverse this trend.

Grenada's stability in food availability and access is conditioned by changes due to climate variability and change and shocks from natural hazards occurring beyond its borders. Hurricane Ivan and Emily and the 2009 drought have highlighted the problem of food stability and has encouraged the government and non state actors to work together to address this threat.

In addition, the analysis examined the programmes in place to address the concerns of food and nutrition security. The analysis of these programmes was conducted to better understand the current situation so as to design actions to address the policy gaps. Finally, the analysis on the enabling environment for building an institutional framework for action was examined so as to pave the way for the establishment of an institutional framework for the effective implementation of Grenada's Food and Nutrition Security Policy and Action Plan.

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