

CASE STUDY

BARBADOS

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EXECUTIVE SUMMARY

This Case Study on Barbados has been undertaken within the framework of the United Nations Conference on Trade and Development (UNCTAD) Project entitled *Analysing SIDS-Specific Needs in Multilateral Liberalization in the Agricultural Sector*, which is being pursued in fulfilment of a mandate contained in the UNCTAD X Bangkok Plan of Action. The study examines how “small-islandness” affects agricultural production and competitiveness in Barbados, identifies products of interest to Barbados in relation to both domestic production and exports, and assesses how the modalities proposed in the ongoing negotiations on agriculture within the World Trade Organization (WTO) would affect Barbados’ production and trade through their impact on products of interest.

Barbados, one of the small island developing States (SIDSs) in the Caribbean region, has an area mass of approximately 432 sq. km, a 95-km coastline and a population of approximately 268,000. Barbados possesses many of the typical characteristics of SIDSs, including vulnerability to natural disasters, a highly open economy with a high level of dependence on imports, dominance of a single commodity – sugar – in the agricultural sector, high-cost and uncompetitive production systems, limited production and consumption capacity, and limited technical and financial capacity to respond to major challenges.

Several factors, directly related to Barbados’ small area and limited natural resources, limited market size and other inherent structural weaknesses, have had profound negative effects on the production and competitiveness of domestically produced agricultural products. With respect to land, of its total land area of 43,176 ha, less than 20,000 ha are available for agriculture. The increase in competing demands for land (for housing, social/recreational purposes and alternative economic activity such as tourism), coupled with the practice of holding agricultural land for speculative purposes, has resulted in agricultural land being priced out of the reach of farmers. As a consequence, adequately sized tracts of land for commercial farming are in very limited supply, which inhibits the capacity of agricultural operations in Barbados to benefit from the economies of scale that characterize production in larger developing and developed countries.

Water is also a very scarce resource in Barbados which, with an estimated 300 cubic metres of water per citizen, ranks among the world’s 15 most water-scarce countries. While the water rates for farmers operating in the Government managed schemes are in the range of 0.33 – 0.44 Barbados cents per cubic metre, it should be stressed that those farmers outside the scheme face domestic water rates of 2.12 Barbados dollars (BD\$) per cubic metre, which makes viable agricultural production extremely challenging, particularly in the drier regions of the country.

Achieving competitiveness in domestic agricultural production and marketing is also constrained by the small domestic demand base, which makes it extremely difficult to produce at sufficiently high levels to achieve economies of scale. For example, domestic consumption of poultry in Barbados is only approximately 0.12 per cent of United States consumption. Therefore, in Barbados, the scope for investing in large-scale production operations and processing plants severely constrains the technologies employed and efficiencies realized.

The supply of inputs to the agricultural sector in Barbados is another problematic area that undermines international competitiveness. The existence of imperfect and undeveloped markets for inputs and services is a feature characteristic of SIDSs such as Barbados, resulting in higher input prices.

It is not surprising, therefore, that only a few select agricultural commodities have a competitive advantage in Barbados. Analyses conducted by the Ministry of Agriculture and Rural Development (MARD) have found that products such as poultry, pork, tomatoes, cauliflower and lettuce are domestically competitive only with the application of bound rates of duty. Such analyses have been supported by a report on the agricultural sector in Barbados commissioned by the Food and Agriculture Organization of the United Nations (FAO),¹ which reveals that there are only a few domestically produced commodities,

¹ *Strategic Report for the Barbados Agricultural Sector*, prepared by Dr. Bernard Francois, consultant, FAO, July 2000.

such as certain cuts of poultry, hot peppers and sweet potatoes, which are competitive with the imported product.

Apart from structural factors concomitant with “small-islandness”, other factors, such as productivity and cost of labour, availability and cost of credit, and the relatively high cost of services, affect the cost of production and hence the competitiveness of Barbadian agricultural products.

While remoteness has not been a major challenge to Barbados, the relative distances from major markets have proven problematic. In many cases, exported volumes are relatively small, requiring the purchase of space on commercial passenger lines; and such space, due to excess demand, is often expensive when compared to dedicated freight. In addition, although Barbados has not recently suffered from severe natural disasters such as hurricanes, such an event presents a clear and ever-present threat to its agricultural sector, given the location of the island in relation to the path of tropical depressions, storms and hurricane systems which develop off the African coast.

The Government of Barbados (GoB) has initiated policies to address some of the inherent disadvantages facing its farmers. The key thrust of the Government and the Ministry of Agriculture and Rural Development (MARD), as articulated in the *Strategic Plan for the Agricultural Sector, 2001 – 2010*, has been to enhance competitiveness through a focus on non-price factors such as product quality and niche marketing. In addition to this overall focus, several initiatives have been undertaken which seek to address some of the constraints inherent in its “islandness”. These include the finalization of a Land Use Policy, the implementation of the Land for the Landless Programme (an initiative that seeks to provide land to those landless farmers engaged in commercial agricultural production), provision of agricultural water through the Integrated Rural Development Programme, establishment of an Agricultural Development Fund (ADF), which will provide grant and loan funding to the farming community and the delivery of a revamped and improved Agricultural Incentives Programme administered by the MARD. Government policy measures have also provided an enabling trade environment, initially through non-automatic import licensing, and, more recently, through the application of bound rates of duty and special safeguards designed to stimulate and safeguard the production of sensitive commodities.

Technical support continues to be administered to the farming community by a number of local, regional and international institutions such as the Ministry of Agriculture, the Caribbean Agricultural Research and Development Institute (CARDI), the University of the West Indies, the FAO and the Inter-American Institute for Cooperation on Agriculture (IICA).

The performance of the agricultural sector, particularly in the most recent past, has been conditioned by significant changes in both the domestic and external trade and economic environment. While the contribution of the agricultural sector to gross domestic product (GDP) has been on the decline over the past 10 years, this indicator does not fully reflect the important multifunctional role played by the sector. Nevertheless, the sector continues to be plagued by adverse weather conditions, labour shortages and relatively low labour productivity, decreased acreage under cultivation, declining yields, larceny and the high cost of inputs and services.

The need to ensure an acceptable level of food security, based on an optimal combination of domestic production and imports, at the national and household levels, has served as a major policy objective guiding the development of the agricultural sector in Barbados. In addition to food and nutrition security, rural development, poverty alleviation and environmental protection, including the preservation of biodiversity, are key non-trade concerns (NTCs). The production of sugar cane is of particular relevance in this regard, since sugar cane cultivation contributes in large measure to the aesthetic appeal of the rural landscape and to the preservation of the environment, with obvious implications for the tourism industry.

Given the importance of NTCs, several products have been identified as sensitive within the agricultural sector in Barbados. In relation to the domestic market, products such as poultry, eggs, milk, pork,

tomatoes, cabbages, sweet peppers, lettuce, okras, carrots, cucumbers, melons, onions and sweet potatoes have been identified as highly sensitive, while others such as beef, mutton/lamb and yams are of strategic importance, and benefit from targeted policies. In addition, Barbados considers the production of key fruits such as bananas, plantains, mangoes, guavas, Barbados (West Indies) cherries and papayas, as well as herbs such as thyme, shallot and parsley, to be integral to the development of the agricultural sector.

Barbados implemented its WTO-compliant-tariff-only regime in April 2000. This market liberalization has had a negative impact on domestic production of such commodities as poultry, carrots, cabbages, pork, onions, tomatoes and sweet peppers.

Barbados reserved the right to utilize the Special Safeguard (SSG) provision under Article 5 of the Uruguay Round Agreement on Agriculture (AoA) to safeguard sensitive domestic production. However, analysis by the Ministry of Agriculture, and experience since the enactment of legislation to give effect to the SSG, have shown that this tool, in its current form, does not provide adequate coverage for all domestically produced, sensitive agricultural commodities.

The trade performance of Barbados has been similar to many other developing countries during the 1990s. The increasing divergence between imports and exports, and the further entrenchment of its status as a net food importing developing country (NFIDC), have been the predominant features of its trade over this period. Sugar has traditionally been, and continues to be, the predominant agricultural export crop in terms of both volume and value. However, export earnings from this commodity have, with the exception of 1996 and 1997, been on the decline.

Sugar has benefited for many years from preferential access to the market of the European Union (EU). As such, trade preferences have provided the basis upon which the agricultural sector in Barbados (and many other SIDSs) has developed. Despite the positive contribution of trade preferences to the sustained development of many small developing economies (SDEs) and SIDSs like Barbados, these arrangements have been subject to severe pressures and challenges in recent decades due to a number of developments and factors. These factors, individually and combined, could result in changes in the structure of the EU's sugar regime to the detriment of suppliers in the African, Caribbean and Pacific (ACP) group of States. This is a matter of major concern for Barbados, one of the highest-cost producers of cane sugar in the world, since it has serious implications for the levels of Government support that would be required to maintain this important industry.

Apart from the export of sugar under preferential arrangements, Barbados' experience in the export market over the period 1991 – 2000 has involved a wide range of products, but has been generally disappointing. Products exported included sweet potatoes, breadfruit, hot peppers, okras, yam, avocado, cut flowers and foliage, coconuts (not shelled), golden apples, paw paw, and sour sop. Barbados is currently exploring the possibilities for further developing non-traditional exports, with emphasis on value-added and higher priced (niche market) products such as herbs and spices.

With respect to market access opportunities arising from trade liberalization, there are a number of factors which retard the progress of SIDSs like Barbados. The relatively poor performance of countries such as Barbados, even with significant tariff preferences, demonstrates that there are other factors, apart from low tariffs (supply-side problems, limited export capacity, non-tariff barriers (NTBs) and domestic support policies), which need to be addressed before such countries can participate meaningfully in global trade. For Barbados, these have proven to be the greatest hindrance to increased market access and to any material benefits from WTO-related trade liberalization.

The peculiar circumstances and inherent structural weaknesses, which severely limit the capacity of SIDSs such as Barbados to participate and benefit from the multilateral liberalization process, must therefore be at the core of the development of optimal modalities for continuation of the reform process in trade in agricultural products. Full recognition of the diversity found in developing countries will be

a critical prerequisite for the development of a package of special and differential treatment (S&DT) provisions that is responsive to the needs of the smallest and most vulnerable economies, including SIDSs.

In the case of Barbados, the modalities must address **food security concerns**, the **multifunctional role of agriculture** and, in particular, sugar cane production, **preferential market access** and the need for adequate technical and financial assistance to address supply-side constraints and **build export capacity and international competitiveness**. Optimal modalities from the perspective of Barbados are presented in summarized form in the table below.

Summary table of possible optimal modalities for SIDSs in multilateral trade negotiations on agriculture

Item/parameter	Optimal modalities for SDEs and SIDSs
MARKET ACCESS	Tariffs
1. Product coverage	SDEs and SIDSs should identify list of food-security-sensitive products, which would be exempt from further reduction commitments as an S&D provision, possibly through a negative list approach. Criteria to be developed which would relate directly to a measure of the respective product's importance in the domestic food basket; domestic support levels should be below an agreed threshold (e.g. <i>de minimis</i>) to qualify for exemption.
2. Tariff reduction	For developed countries, a harmonized formula or similar approach to be developed to effectively address tariff peaks and tariff escalation. For SDEs/SIDSs, continuation of the Uruguay Round (UR) approach may be most suitable, particularly for sensitive products; the tariff reduction rate should be significantly lower (at least 50% lower) than that applicable to developed countries; the level of minimum tariff cut per tariff line to be lower than that required in the case of developed countries (e.g. 5%) so as to provide greater flexibility; a longer implementation period (10 years +) should be allowed.
3. Renegotiating bindings	SDEs/SIDSs with zero or low bindings should be allowed to renegotiate, particularly where products are food-security-sensitive products (this is not as relevant to Barbados as to other SIDSs).
	Special Safeguard Mechanism (SSM)
	Developing countries (DCs), including SDEs and SIDSs, should have recourse to a SSM with the following elements: DCs, including SDEs and SIDSs, would designate eligible products using agreed criteria, and list these in a Schedule of Commitments; flexibility to use the measure would be accorded to countries using lowest levels of domestic support and export competition measures; it would be triggered when the import quantity exceeds a reference level of (X% e.g. 110%) of the average import level over the previous (Y e.g. 3 years) or when the c.i.f. import price of the shipment falls below the reference level equal to the average domestic market price in the previous (Z e.g. 3 years); The SSM would take the form of a quantitative restriction in terms of a quota or an additional duty which completely offsets the fall in prices; the duration would be for 1 year with a right to extend it; immediate notification to the Committee on Agriculture (CoA).

Item/parameter	Optimal modalities for SDEs and SIDSs
MARKET ACCESS	Tariff quotas
	<p>SDEs and with tariff rate quota (TRQ) commitments should be exempt from further commitments (increase in volumes, reduced in-quota tariffs) for food-security-sensitive products, utilizing an approach which mirrors that proposed in the case of tariffs;</p> <p>Developed countries with TRQs for products of export interest to DCs should be required to expand volumes, reduce in-quota tariffs and improve their administration and transparency;</p> <p>Review of existing TRQs should not negatively affect current market access provided to DCs under preferential arrangements.</p>
	Trade preferences
	<p>Non-reciprocal tariff rates to DCs should be improved and bound during the reform process;</p> <p>Existing preferential arrangements should be exempt from challenge under Article XXIII of the GATT;</p> <p>A TRQ mechanism should be established with the following elements:</p> <ul style="list-style-type: none"> Minimum percentage of the total annual volume of each TRQ should be reserved for imports from countries which are small-scale exporters of the product at an in-quota rate of 0%; All TRQs allocated to small-scale exporters that are unused after six months shall become available to other exporters on a most-favoured-nation (MFN) basis; A “small-scale exporter” is defined as a country whose export share of the product concerned in the world market is less than (X%); A list of products of export interest to small-scale producers shall be drawn up and will form the basis for members to open TRQ to small-scale exporters, the volume of which shall be determined as X% of domestic consumption of the product.
DOMESTIC SUPPORT	“Green box” or exempt measures
	<p>A review is needed of “green box” criteria with a view to tightening the “green box” resulting in two categories of support – measures exempt and measures non-exempt from reduction commitments;</p> <p>Payments used by developed countries under AoA Annex 2, paragraphs 5-7 should be excluded from the “green box” or exempt category;</p> <p>SDEs and SIDSs should continue to have recourse to the category of “exempt” measures as established in Annex 2, with necessary adjustments and expansion to address DCs’ concerns</p>

Item/parameter	Optimal modalities for SDEs and SIDSs
DOMESTIC SUPPORT	“Green box” or exempt measures
	The following measures should be included in the exempt category: Government assistance to the agricultural sector to address the adverse effects of sudden changes in exchange rates on the prices of principal agricultural exports; Measures taken in the structural transformation of the agricultural sector to adjust away from a reliance on preferential markets; Domestic support measures to assist in the revitalization of rural areas in general, or to assist specific groups or subgroups of producers within rural areas.
	Special and Differential (S&D) Box – Article 6.2
	The S&D Box should be expanded to include: Support to encourage agricultural processing; Investment and input subsidies of a product-specific nature; Support to all farmers in SDEs and SIDSs that participate in productive activities which contribute significantly to the attainment of key development objectives, thus removing the limitation of such support to low-income, resource-poor farmers or small-scale, household farmers; Subsidies to agricultural marketing costs, including internal transport, post-harvest, storage and product quality improvement, both generally and of a product-specific nature.
	De minimis provisions
	For SDEs and SIDSs, the <i>de minimis</i> level should be increased to at least 20% for both product-specific and non-product-specific support; For SDEs and SIDSs, the value of <i>de minimis</i> for non-product-specific domestic support may be reallocated to product-specific domestic support for products that are essential for food security and rural development in addition to product-specific <i>de minimis</i> .
EXPORT COMPETITION	Export subsidies
	Export subsidies that have a negative impact on food production systems in DCs, SDEs and SIDSs should be substantially reduced/eliminated. Two issues need to be addressed: Further develop instruments to operationalize the Marrakech Decision (e.g. provide technical and financial assistance for improving productivity and efficiency in domestic food production and marketing); and Provide safeguard preferences by offering flexibility to preference-giving countries in making commitments.

Item/parameter	Optimal modalities for SDEs and SIDSs
EXPORT COMPETITION	Export subsidies
	For SDEs and SIDSs, the provisions of Article 9.4 should be extended indefinitely, and expanded to include price risk management schemes and export credits, guarantees and insurance schemes.
	Export credits, guarantee and insurance schemes
	Need to discipline these forms of export competition to address subsidy elements, particularly where these are used for products of interest to SDEs and SIDSs.
OTHER SPECIAL AND DIFFERENTIAL TREATMENT PROVISIONS	Provision of technical and financial assistance to SDEs and SIDSs is needed to address supply-side constraints, build export capacity and competitiveness as a legally binding component of S & D. Necessary administrative and budgetary support should be clearly identified.

I. INTRODUCTION

I.1. Background to the case study

This case study on Barbados represents one of a number of country case studies conducted within the framework of the UNCTAD project entitled *Analysing SIDS-Specific Needs in Multilateral Liberalization in the Agricultural Sector*. The mandate for this project is provided in the UNCTAD X Bangkok Plan of Action, which, in paragraph 133, states: "... In its analytical work [on the multilateral negotiations in agriculture], UNCTAD should also address the needs of small island developing economies."

In fulfilment of this mandate, the UNCTAD Secretariat has facilitated the undertaking of an analytical study, comprising one diagnostic study and a number of country case studies which cover the representative regions where small island developing States (SIDS) are to be found. This case study on Barbados represents the Caribbean perspective.

The case study is divided into three sections. The first section examines, with the use of concrete examples, how "small-islandness" affects agricultural production and competitiveness in Barbados, and identifies some of the policies measures used as well as those envisaged to meet the challenges associated with "small-islandness". The second section seeks to assess Barbados' negotiating concerns by identifying and examining products of interest to domestic production as well as exports. The third section examines how the modalities proposed in the current agricultural negotiations within the World Trade Organization (WTO) would affect Barbados' interests in agricultural production and trade, through their potential impacts on products of interest.

It is hoped that this case study on Barbados, along with the other country case studies and the diagnostic study, will facilitate the development of a package of optimal modalities which SIDSs may propose in the current negotiations with a view to ensuring that the final outcome of the negotiations fully recognizes and accommodates the special circumstances of SIDSs. Such an outcome would enhance the integration of SIDSs into the multilateral trading system and contribute significantly to their sustained social and economic development.

I.2 Profile of Barbados – a small island developing State

Barbados, one of the small island developing States (SIDSs) in the Caribbean region, is the most easterly of the Leeward Islands chain; it is located at latitude 13° 10' north and longitude 59° 35' west. It has an area mass of approximately 432 sq km, with a 95-km long coastline and a population of approximately 268,000. Barbados possesses many of the typical characteristics of SIDSs, including vulnerability to natural disasters such as hurricanes, droughts and floods, a high level of dependence on imports, reliance on a monocrop – sugar – within the agricultural sector as the major source of foreign exchange, and the existence of production systems which are relatively high cost and uncompetitive. In addition, Barbados, like other SIDSs, has a rather limited production and consumption capacity, which has given rise to a general inability to influence key markets for inputs and outputs. Like many other SIDSs, it does not possess the requisite capacity — technical, financial and infrastructural — to adequately support key programmes that seek to address concerns relating to items such as food security and environmental degradation.

Barbados has a highly open economy; it imports more than 70 per cent of its food requirements, the majority of its inputs into agriculture and manufacturing and most consumer goods. It is a net food importing developing country (NFIDC) with food imports significantly exceeding food exports.

The domestic economy is highly vulnerable to changes in the international trading environment for both goods and services and to related external shocks, as well as to the economic performance of its major

trading partners, the United States and Europe (predominantly the United Kingdom). Whilst Europe is the main source of Barbados' exports, primarily under preferential trading arrangements, the majority of its imports are from the United States and Canada, with an increasing level of imports from within the region through the Caribbean Community and Common Market (CARICOM) trading arrangements.

Over the last 50 years, the Barbados economy has been transformed from an agriculture-based economy, heavily reliant on sugar production and exports, to a more diversified, service oriented economy, which is now heavily dependent on tourism and related services. During this transformation process, significant economic growth and development has taken place, which has in turn resulted in improved standards of living for Barbadians and the development of relatively high quality social services (such as education and health) and related infrastructure (telecommunications, transportation, electricity and water). Per capita income in 2001 stood at US\$ 7,850 — 0.2 percentage point below that for 2000. At the end of 2001, the import cover stood at 37 weeks, compared to 21.7 weeks at the end of December 2000.

II. “SMALL ISLANDNESS” AND ITS IMPLICATIONS FOR AGRICULTURAL PRODUCTION AND TRADE IN BARBADOS

II.1 Smallness and its impact on production and competitiveness

Several factors directly related to Barbados' small area, limited market size and other inherent structural weaknesses have had profound negative effects on the production and competitiveness of domestically produced agricultural products. To a large extent, these effects are the result of an apparent inability to achieve economies of scale in production and marketing, and have precluded Barbados, and indeed many SIDSs, from fully participating in, and benefiting from, the multilateral trade liberalization process. Some of the limiting factors and their effects on competitiveness are identified below.

Land/farm size issues

In a small island like Barbados with a total land area of 43,176 ha, land is a very limited resource, with obvious implications on cost and availability for agricultural activities. The last Barbados Agricultural Census, conducted in 1989, found that the agricultural land resource had decreased from 24,905 ha in 1971 to 22,000 ha in 1989/90. Preliminary estimates and observed trends within the last five years indicate a further reduction in the agricultural land resource to less than 20,000 ha. Given this severely limited land resource, it has been found that competing uses such as housing, social and recreational facilities (e.g. schools and playing fields), and alternative economic uses such as golf courses and tourism-related projects, raise the price of agricultural land out of reach of the average farmer.

In addition, the overwhelming demand for land for competing uses has resulted in agricultural land being held for speculative purposes, and consequently not being actively cultivated. The relatively low average financial return to agriculture, which is less than the return to other activities such as tourism and real estate development, makes agriculture an unattractive area for investment by landowners. Compounding the issue of land cost and its availability is the fact that the area with the most fertile soils and greatest rainfall — the Scotland District (which covers one seventh of the total area of the island) — is prone to severe land slippage and erosion. These factors have collectively reduced the availability of adequately sized tracts of land for commercial farming, thus reducing the country's ability to realize its full potential with respect to agricultural production. In addition, even where land is available, it is priced so high that, if purchased for agricultural use, the impact on the overall cost of agricultural production would be significant, with serious consequences for international competitiveness.

The limited land resource available also has implications for the distribution of this scarce resource within the agricultural sector. According to the 1989 Agricultural Census, Barbados had a highly skewed land distribution pattern, with less than 1 per cent or 94 of the holdings (sugar plantations)

accounting for approximately 78 per cent of total agricultural land, while the other 99 per cent or 17,000 of the holdings accounted for the other 22 per cent of agricultural land. While this structure may have changed somewhat since the last census, analysis of data from the ongoing crop production survey reveals that this skewed land ownership pattern persists.

The 1989 Agricultural Census also revealed that approximately 90 per cent of the farmers in Barbados operate on holdings of 0.5 hectare or less. Landless farmers, classified as those with holdings of less than 0.025 hectare, accounted for approximately 24 per cent (4,161) of the total number of holdings. There was only one farm within the 500–1,000-ha range during that census period. That farm, Allendale Plantation in St. Peter, has since been taken out of agricultural production. Once again, while changes may have occurred since the last census, available information and observation suggests that a significant proportion of the farmers in Barbados continue to operate holdings of 0.5 hectare or less. This has serious implications for the capacity of these operations to benefit from economies of scale, with obvious consequences for the relative cost of production. It should be noted that the average size of holdings in excess of 50 ha was 180 ha, which, while considered large by local standards, would be considered small by international standards.

Water constraints

Like land, water is a limited resource in Barbados, with serious consequences for production and productivity in the agricultural sector. Under international standards, countries with less than 1,000 cubic metres of water per citizen are deemed to be in the water scarce zone. Barbados has an estimated 300 cubic metres of water per citizen, and ranks among the world's 15 most water scarce countries.

A “dry” year is considered a year when rainfall is below an annual average of 1,016 millimetres per parish. Annual rainfall for the period 1991–2000 averaged 1,360 millimetres per parish, which would be considered a relatively “wet” average by Barbadian standards (annex table 1). However, most of this rainfall occurs during the latter half of the year and, given the topography of the island and the lack of rivers and lakes, a high proportion of this rainfall runs off into the sea. In addition, several parishes in Barbados, where agriculture is practiced, receive relatively less rainfall. Coupled with this phenomenon is the fact that although Barbados does not have very dry years (a noted exception being 1997), severe dry spells do occur. For example, Barbados was forced to make *force majeure* claims for sugar exports below quota levels in 1995 and 2002 due to adverse weather conditions.

During the 1989 Agricultural Census, the drip irrigation system was predominantly found on plantations within the range of 20 to 50 ha. Smallholdings, which accounted for nearly 90 per cent of the total number of agricultural holdings, only had 4.8 per cent of the total irrigation equipment in 1989. Since 1989, there has been a marked increase in the number of small holdings utilizing drip and other forms of irrigation due to the implementation of Government programmes, which seek to provide technical and financial assistance and the necessary infrastructure for improved water access and management. Estimates show that agriculture currently uses around 6 million gallons per day, mainly on irrigated vegetables.

Within the rural districts, irrigation has been provided, since the mid-1980s, through the Irrigation Engineering Unit (IEU) of the Barbados Agricultural Development and Marketing Corporation (BADMC). This Unit currently operates and maintains 20 pump sites in 10 irrigation districts, and services over 490 farmer-clients with 560 service connections in the predominantly rural areas of Barbados. The water rate through this scheme is 44 cents per cubic metre, except in the Spring Hall Land Lease Programme, which charges a rate of 33 cents per cubic metre. For those farmers outside the scheme (which would include over 90 per cent of the total number of farm holdings), domestic water has traditionally been, and continues to be, a significant source of irrigation water. However, such farmers are charged the domestic rate of BDS\$ 2.12 per cubic metre, which makes viable agricultural production, using domestic water, difficult. Many of these farmers, who fall outside the established irrigation schemes, have little choice but to engage in rain-fed type production, which severely limits

production to certain times of the year.

The irrigation potential of Barbados has been documented in several studies, including the Barbados Water Resources Study.² This study estimates that water available for irrigation is sufficient to supply about 1,600 ha of land annually. In addition, the irrigation potential in the Scotland District has been widely acknowledged. However, the required resources to harness this water potential are limited, and, consequently, the ability to increase production throughout the year is limited. In the event that Barbados has to employ more technologically driven methods of harvesting water, the cost of water for agricultural purposes will increase, resulting in a corresponding increase in the cost of production.

Limited domestic market

Achieving competitiveness in domestic agricultural production and marketing is also constrained by the small domestic demand base, which makes it extremely difficult to produce at sufficiently high levels to allow for an adequate spread of overhead costs. This limited domestic market is understandable, given the fact that Barbados has a population of just over one quarter of a million people, which is small by international standards. Total domestic consumption levels for major agricultural commodities are insignificant in global terms, as evident by a comparison of domestic consumption and production/consumption levels in larger countries. For example, total consumption of poultry meat in Barbados is estimated at 15,000 tonnes per annum, which is miniscule when compared with consumption in the United States, China and the EU, which stood at an estimated 12.6 million, 11.8 million and 7.6 million tonnes, respectively, in 1998. The smallest plant in the United States processes approximately 600,000 birds per week, while the largest plant in Barbados processes an estimated 80,000 birds per week. Therefore, the scope for investing in large-scale production operations and processing plants in Barbados is severely constrained, with consequences for the technologies that can be employed and efficiencies realized.

Despite the growth in the tourism sector, with stay-over arrivals increasing from 394,222 persons in 1991 to 545,027 persons in 2000, ad hoc estimates show that the tourist population accounts for less than 5 per cent of the total resident population in Barbados. It is therefore quite easy, based on absolute arrivals, to overestimate the demand potential in the tourism sector there. Using an optimistic estimate of 5 per cent additional demand, this segment is not sufficient to raise consumption demand to the levels needed to achieve greater economies of scale and lower the overall costs of domestic production.

In addition, the *Five Segment Agribusiness Survey, 1999*, conducted by CARDI in collaboration with IICA, the ACP-EU Technical Centre for Agricultural and Rural Development (CTA) and the Caribbean Culinary Federation (CCF) in 17 Caribbean countries, analysed demand in the hotel and restaurant industries for key agricultural products. In the *Barbados Report*, it was estimated that in 1998 the average consumption per stay-over tourist for selected livestock products (chicken, pork, beef and lamb) was 7.22 lbs. per visitor, representing 7.4 per cent of total consumption that year. Similarly, estimated consumption of root crops by stay-over tourists using the results of the Five Segment Study, accounted for 5.9 per cent of total consumption. Thus the proportion of consumption by the tourist sector is not sufficient to compensate for the small domestic consumption of the resident population.

In addition, the close linkage between the players in the distributive sector, who tend to be biased towards imports, and the tourism sector, precludes greater advantage being made of any increased demand for agricultural products in the tourism sector. Such demand is often met through increased imports. Furthermore, the relatively high cost of domestic agriculture compared to imported products, the desire for the Barbados tourism product to remain internationally competitive, and the unreliability of guaranteed supplies and quality militates against increasing the share of domestic production to meet demand in the tourism sector.

² Barbados Water Resources Study prepared for the Government of Barbados by Stanley Associates Engineering Limited and Consulting Engineers Partnership Limited, 1978. Updated in 1997.

Further, the similarity in climatic conditions between Barbados and most other CARICOM countries means that similar products and varieties are produced throughout the region. As such, given the lower cost structures in some CARICOM countries, due to lower energy, labour, inputs and land costs, among others, Barbados tends to be a net importer of agricultural products from the CARICOM region. This further limits domestic production and attempts to capitalize on the liberalization of agricultural trade in the CARICOM region.

This limitation on production due to the small domestic market is further exacerbated by the lack of alternative marketing opportunities for domestically produced agricultural products, given the limited value-added processing linked to domestic production and the poor state of non-traditional agricultural exports. It is interesting to note that the underdeveloped state of value-added processing and agricultural exports is a direct result of the lack of competitiveness associated with high costs and limited levels of production of domestic agricultural products. This in turn is due to the structural weaknesses associated with “small islandness”.

Input supply constraints

The supply of inputs to the agricultural sector in Barbados is another problematic area that undermines international competitiveness. Owing to the relatively low level of domestic production, it is generally difficult for Barbadian farmers to influence pricing policies of agricultural inputs either at the international level or at the domestic level, given the presence of an oligopolistic distributive sector, with a few main firms operating in the domestic market. The existence of imperfect and undeveloped markets for inputs and services is a feature characteristic of SIDSs such as Barbados. As a consequence, input prices are significantly higher than in other countries and these high prices contribute to the high cost of agricultural production.

In addition, the relatively small domestic production sector is unattractive for investors to undertake production of key agricultural inputs for sale in the local market, and where they do, as in the case of animal feeds — where there is a single manufacturer in Barbados — the operations suffer from diseconomies of scale, given the low level of domestic agricultural production and input use. In many larger economies, industrial operations produce some by-products, which are made available to the agricultural sector at minimal cost. The opportunities for these kinds of linkages are severely restricted in SIDSs owing to the low level of industrial activity and production of such useful by-products.

In general, because the agricultural sector is therefore heavily dependent on imported inputs, it is extremely vulnerable to external developments that may affect the supply of inputs. This high dependency on imported inputs also has implications for the quality of such inputs in terms of their appropriateness, given the significant differences between local conditions and the conditions in some of the countries where these inputs are manufactured.

Competitiveness of domestic production

It is not surprising, therefore, that only a few select agricultural commodities have a competitive advantage in Barbados. Any advantage is largely a result of the relatively high bound rates of duty that are applied to “sensitive”³ commodities, rather than an inherent price competitiveness. Analyses conducted by the Ministry of Agriculture and Rural Development concerning the implementation of bound rates of duty, reveal that key commodities only remain competitive as a result of the application of the bound rates of duty. As illustrated in annex tables 2 and 3, this applies to products such as poultry, pork, tomatoes, cauliflower and lettuce. Such analyses have been supported by an FAO-commissioned report on the agricultural sector in Barbados.⁴ Given the current production costs, and using the competitiveness index (CI) concept, defined as the difference between the domestic and imported product prices divided

³ ‘Sensitive’ in the current context refers to products which have been important in terms of their contribution to employment and farm income (particularly in the rural areas), to product diversification and to food security.

⁴ *Strategic Report for the Barbados Agricultural Sector*, prepared by Dr. Bernard Francois, consultant, FAO, July 2000.

by the import price [$CI = (Pd - Pf) / Pf$], this study reveals that there are only a few domestically produced commodities, such as certain cuts of poultry, hot peppers and sweet potatoes which have a CI of less than one and are therefore competitive with the imported product.

Structural factors associated with “small-islandness” may be the primary reasons for the high cost of agricultural production in Barbados, negatively affecting its competitiveness. However, it must be noted that there are also other factors having an impact on competitiveness. Factors such as productivity and labour costs, availability and cost of credit, and the relatively high cost of services affect the cost of production and hence the competitiveness of Barbadian agricultural products. Although no analyses have been undertaken to measure the extent to which various factors associated with “small-islandness” are responsible for the uncompetitive nature of domestic agricultural production, it is safe to assume that such factors have contributed significantly to this, as discussed below.

II.2 Issues relating to remoteness and the effects of natural disasters

Remoteness

Barbados and many CARICOM countries have relatively easy access to transportation both by air and sea. Therefore, whilst remoteness has not been a major challenge to Barbados, the relative distance from major markets has proven problematic. In many cases, the exported volumes are relatively small, requiring the purchase of space on commercial passenger lines. Such space, due to excess demand, is often expensive when compared to dedicated freight carriers. Freight rates are in the range of US\$ 0.86 per kg to New York (depending on passenger load) to US\$ 1.35 for 500 kg and over. The regional carrier, British West Indies Airways (BWIA), offers the most competitive rates. Small export volumes, due to limited availability of key resources, notably land, and from high costs of inputs, such as agricultural chemicals, are made even more uncompetitive by higher than average transport costs. The small volumes exported offer little or no scope for bargaining to reduce the costs of air and sea transport. In the case of sugar exports to the United Kingdom, dedicated maritime transportation is available, but the relatively long distance involved has caused Barbados and other ACP sugar exporting States in the past to express concern about availability of appropriately sized vessels and the cost of transport in general.

Natural disasters

Although Barbados has not recently suffered from severe natural disasters, such as hurricanes, floods and other disasters, the possibility of such an event is a clear and ever-present threat to its agricultural sector. For example, the passage of tropical storm “Lili” in September 2002, with winds of a mere 60 kilometres per hour, resulted in estimated damages of BDS\$ 525,000 (approximately US\$ 262,500) to the agricultural sector alone. It can be almost guaranteed that in the event of a severe natural disaster, the agricultural sector in Barbados will suffer significant damage.

The lack of severe disasters in recent years has also resulted in a limited and outdated disaster recovery plan for the agricultural sector. This is coupled with the fact that, in general, Caribbean governments do not have a history of providing recovery payments to the agricultural sector in the case of natural disasters such as floods and hurricanes. The focus in many cases has been on rebuilding infrastructure such as bridges and houses, and the restoration of services such as water and electricity. The costs of natural disasters for selected countries in the Caribbean region over the 10-year period, 1991–2000, as illustrated in table 4, includes primarily costs for the rebuilding and restoration of key social services. Agricultural damage, except in subregions with specific disaster insurance (such as the banana industry in the Windward Islands), usually has to be borne by the farming community itself. In addition, the table shows that in some cases, although disaster occurred, costs were borne internally, and thus no figure for damage was included. Therefore, it can be reasonably concluded that the reported damage costs in table 4 are significantly lower than the actual damage resulting from severe natural disasters in

selected Caribbean countries.

II.3 Policy measures to address the challenges arising from smallness

The Government of Barbados (GoB) has initiated policies to address some of the inherent disadvantages facing farmers in Barbados. However, the Government's ability to implement measures to adequately address the factors contributing to the uncompetitive nature of domestic agricultural products is constrained by limited financial resources, demands from other sectors and commitments under international agreements such as those connected with the WTO.

The key thrust of the GoB and the Ministry of Agriculture and Rural Development (MARD), as articulated in the *Strategic Plan for the Agricultural Sector, 2001 – 2010*, has been to enhance competitiveness through a focus on non-price factors such as product quality and niche marketing. Consequently, emphasis has been placed on value-added and signature products such as Barbados Blackbelly (BBB) Sheep and West Indian Sea Island cotton (WISIC). There is also a greater emphasis on research and development into new varieties and appropriate, cost-effective technologies as well as promotion of a farm management and agribusiness approach to farming.

In addition, firms and agribusiness enterprises are being encouraged to adopt measures and implement systems that facilitate trade such as Hazard Analysis Critical Control Point (HACCP), and procedures based on the International Standards Organization (e.g. ISO 9002), particularly where exports are concerned. Efforts are also being made to develop and enact revised legislation relating to sanitary and phytosanitary (SPS) measures.

Besides the overall focus on non-price competitiveness factors, several initiatives have been undertaken which seek to address some of the constraints related to being an island. Key amongst such initiatives is the finalization of a Land Use Policy, and its strict enforcement, aimed at preventing the further movement of land out of agriculture. The Land for the Landless Programme, an initiative which seeks to provide land to those landless farmers engaged in commercial agricultural production, aims to address some of the constraints to increasing the competitiveness of domestically produced products.

With respect to water as a resource, the provision of agricultural water through the Integrated Rural Development Programme has contributed significantly to the development of the agricultural sector, primarily in the rural communities in which the scheme operates. The Government is considering initiatives such as the creation of dams in the Scotland District which receives a significant proportion of the island's rainfall, greater harvesting and storage of water, promotion of the use of tertiary treated water from sewage systems for irrigation purposes, particularly for borderline uses such as for golf courses. Small farmers have also been educated on the use of water saving systems such as drip irrigation, micro-sprinkles and mulches. Incentives in the form of rebates are also provided to promote the use of such devices.

In November 2000, the GoB established an Agricultural Development Fund (ADF) which will provide grants and loans to the farming community. Such funding will assist in improving the technology used by farmers thereby helping to increase cost competitiveness. For example, poultry farmers will be able to access this Fund for the installation of wind tunnel systems, which will improve profitability by reducing bird mortality. The ADF is complemented by the Rural Enterprise Fund, administered by the Rural Development Commission (RDC).

A revamped and improved Agricultural Incentives Programme, administered by the MARD, provides rebates for key agricultural products and duty free access to inputs such as seeds, chemicals and key machinery. For example, a rebate on land taxes for agricultural lands (up to a maximum of 50 per cent) is also available to the sector.

The Incentives Regime seeks to promote the development of value-added and high-end products, such as West Indian Sea Island cotton and BBB Sheep. Another focus is the development of stronger cooperatives and farmers' organizations, which will be better able to undertake investments and make bulk purchases to reduce costs as well as bargain for better prices from distributors.

Government policy measures have also provided an enabling trade environment, designed to stimulate and safeguard the production of sensitive commodities. As such, prior to implementing its WTO commitments, the policy of a restrictive licensing regime on certain sensitive commodities was enforced. The granting of licences for the importation of sensitive commodities depended, to a large extent, on available domestic production. During the Uruguay Round negotiations, Barbados accordingly identified relatively high bound rates for sensitive agricultural commodities, and reserved the right to impose additional duties under the Special Safeguard Provision of the WTO Agreement on Agriculture.

Technical support continues to be administered to the farming community by organizations such as the BADMC and the extension division of the Ministry of Agriculture. In addition, farmers in Barbados can benefit from research undertaken at the regional level through institutions such as the Caribbean Agricultural Research and Development Institute (CARDI) and the University of the West Indies (UWI). Regional institutions such as Caribbean Export and the Caribbean Development Bank (CDB) have also played key roles in promoting the export of value-added products.

International and regional organizations such as the FAO and the Inter-American Institute for Cooperation on Agriculture (IICA) also provide considerable assistance to the agricultural sector in the region, including Barbados. FAO assistance includes that relating to assessing the agricultural potential of the Scotland District, the programme for eradication of the Tropical Bont Tick, fisheries development and projects related to enhancing food security. The IICA cooperation programme for Barbados includes projects relating to organic farming, agro-tourism linkages, and the development and promotion of signature Barbados products such as Barbados Blackbelly Sheep. The IICA is also involved in distance learning programmes, including farm management and agribusiness and e-commerce, formulated to enhance the skills of farmers and farm managers. Technical support is also negotiated through bilateral agreements between CARICOM and countries such as Chile, Mexico and Cuba, among others. However, to date, full advantage has not been taken of such bilateral technical cooperation initiatives.

III. MAJOR PRODUCTS OF INTEREST TO AGRICULTURAL DEVELOPMENT IN BARBADOS

III.1 Introduction: The agricultural sector

The performance of the agricultural sector, particularly recently, has been influenced by significant changes in the external trade and economic environment, which in turn affects domestic economic conditions and policy flexibility. The contribution of the agricultural sector to gross domestic product (GDP) has been declining over the past 10 years (table 5). In 2000, the agricultural sector contributed BDS\$ 190 million, or 4.4 per cent of nominal GDP, with non-sugar agriculture accounting for BDS\$ 126.8 million, or approximately 3 per cent of GDP. This, however, does not fully reflect the important role the sector plays, as it does not capture the linkages that agriculture has with other sectors such as tourism, and its consequent effects not only on GDP, but also on employment and food security.

The sector continues to be plagued by adverse weather conditions, labour shortages and relatively low labour productivity, decreased acreage under cultivation, declining yields, larceny and the high cost of inputs. Despite the declining trend in agricultural employment, partially attributable to higher wages in competing activities, such as the construction boom over the past eight years, the agricultural sector, nonetheless, employed over 4,700 persons, or 3.7 per cent of the labour force in 2000. The sector has also had to compete with other sectors for funding from commercial banks and from the central

Government within its annual budget.

The Government of Barbados recognizes that as a SIDSs with limited land and other resources, total self-sufficiency in food production is unattainable, and that Barbados will always depend on regional and international markets for a significant proportion of its food supplies. Nonetheless, the attainment of a desired level of domestic production is considered an indispensable component of food security, in addition to its capacity to import food. The need to ensure an acceptable level of food security at the national and household levels, based on an optimal combination of domestic production and imports, has therefore served as a major policy objective guiding the development of the agricultural sector in Barbados. The increasing trade imbalance with respect to food and the further entrenchment of Barbados' status as a NFIDC is of concern to the Government.

Global events in late 2001 provided concrete demonstration of the vital need for countries to ensure some level of food security through enhanced domestic production capability. Immediately after the events of 11 September 2001, the issue of food availability assumed particular importance in Barbados. Although financial resources to purchase food were available, given the uncertainty in the external environment and the disruption in the transportation system, some supermarkets recorded low or non-existent stocks during the weeks subsequent to 11 September. These events, in addition to generating much needed debate and discussions on Barbados' food security, also resulted in the development of a comprehensive, updated food security plan for the country.

It is therefore not surprising that legitimate non-trade concerns (NTCs) such as food security have increasingly become integral elements of the overall economic development strategy of Barbados. Given the highly open nature of the economy, its heavy dependence on its natural resources to attract visitors, and the linkage between agriculture and tourism, Barbados has identified a number of non-trade factors, which influence policy and necessitate the maintenance of an agricultural sector. Food and nutrition security, rural development, poverty alleviation and environmental protection, including the preservation of biodiversity, are key non-trade concerns. An excellent example of this linkage between agriculture and other sectors can be found in the sugar industry. Sugar cane cultivation contributes in large measure to the aesthetic appeal of the rural landscape and to the preservation of the environment, with obvious implications for tourism. In addition, the long tradition and rich history of the sugar plantation system has given rise to heritage-based tourism activities as well as to socio-cultural linkages to the extent that the main cultural festival on the social calendar is the "Crop-Over Festival" based on the sugar crop.

As a SIDS, and highly susceptible to external trade and economic shocks, efforts have also been made to achieve balanced economic growth and development through some degree of diversification of the economic base. As such, agriculture has been identified as one of the sectors that will provide for such diversity and balance.

III.2 Major products for the domestic market

Given the importance of non-trade concerns such as food security, farm income, rural development and rural employment, among others, several products have been identified as sensitive within the agricultural sector in Barbados. The Government has therefore pursued trade and economic policies tailored to provide support of a special nature to these products with a view to stimulating domestic production. In terms of the domestic market, products such as poultry, eggs, milk, pork, tomatoes, cabbages, sweet peppers, lettuce, okras, carrots, cucumbers, melons, onions and sweet potatoes have been identified as highly sensitive, while others such as beef, mutton/lamb and yams are of strategic importance and benefit from targeted policies.

Data limitations have proved to be a major challenge to the Ministry of Agriculture in the formulation and execution of policy. Whilst a number of commodities have been identified as important for food security, farm income, rural development and employment, in some cases statistical data to support this assertion are lacking. As a consequence, although Barbados considers the production of key fruits such

as bananas, plantains, mangoes, guavas, cherries and papayas, as well as herbs such as thyme and parsley, to be integral to the development of the agricultural sector, data limitations preclude analysis of these products. Thus the collection and analysis of statistical data relating to agricultural production in Barbados needs to be strengthened. Accordingly technical assistance has been sought from the FAO for updating the methodology for the collection and analysis of agricultural statistics, as well as for the computerization of such statistics to enable easier access and data manipulation.

(a) *Product identification and analysis*

The key domestic products identified in the previous section are analysed under five major categories: livestock and dairy, vegetables, root crops, fruits, and herbs and spices. Individual data on the products of the first three categories are included in tables 6 to 8. Within the fruit category, production data for most of the period is available only for watermelons, but is insufficient for all the other fruits identified. Domestic production is increasing for the emerging category of herbs and spices, but there is currently insufficient production and price information about it. As such, production data on individual herbs and spices do not form part of these appendices. It should also be noted that Barbados did not implement its tariff only regime until April 2000, and therefore any change in domestic production cannot be explicitly linked to increasing liberalization within the WTO framework.

The GoB, as a trade policy measure to safeguard sensitive commodities, has applied the maximum allowable bound rates to imports of key, sensitive commodities from extraregional sources. The exceptions to this general policy are products destined for infant use, and certain products, such as chicken and turkey wings, which the GoB sought to provide as low-priced sources of poultry protein affordable to low-income households. Other exceptions are inputs for the manufacturing sector. Products not tariffed can attract up to the maximum ceiling binding of 100 per cent, but the applied rate for most of these products is the CARICOM Common External Tariff (CET) rate of 40 per cent. All products sourced from the CARICOM region — whether sensitive commodities such as tomatoes, or less sensitive commodities such as yams — enter Barbados free of duty.

Commodity development in Barbados benefits from the provision of general domestic support, in keeping with Barbados' commitments to the WTO. During the Uruguay Round negotiations preceding the establishment of the WTO, Barbados did not have trade-distorting domestic support, and therefore included a zero figure for its total Aggregate Measurement of Support (AMS) in its Schedule of Commitments. The domestic support provided to the agricultural sector in Barbados is therefore in conformity with the provisions of Annex 2, Article 6.2 and 6.4 of the WTO Agreement on Agriculture.

The following are included in Barbados' domestic support calculations and notifications to the WTO: the research and development budget of the MARD, the expenditure under the Agricultural Incentives Scheme for items such as spray cans, irrigation grants and pasture development, and the MARD expenditure on extension services. Expenditure on the Agricultural Incentives, for example, totalled BDS\$ 237,626 for the period April 1998–March 1999 (the Government financial year). There are also a few product-specific input subsidies such as the rebate on the purchase of a tunnel ventilation system by poultry producers and the cane replanting incentive provided to sugar cane producers, which, whilst specific, does not constitute a significant proportion of the total value of these industries.

Livestock and dairy products (table 6)

For products such as poultry (excluding offal and poultry under tariff head 0207.30, which face a rate of 40 per cent, and turkey wings which are subject to a rate of 110 per cent), eggs, fresh milk and pork, the applied rates are the bound rates. Importation of these products from extraregional sources currently face bound/applied rates of 201 per cent, 147 per cent and 155 per cent respectively. The domestic poultry, eggs and fresh milk industries have traditionally satisfied a significant proportion of the domestic consumption of these products. However, increasing liberalization, even with bound rates at these levels, has resulted in increased imports and, given a relatively unchanged demand base, declining

domestic production. All three products (poultry, eggs and fresh milk) recorded declining average production for the period 1996–2000, compared to the period 1991–1995. In 2000, the year of liberalization, eggs and milk recorded slightly increased production, but output of poultry declined marginally.

Domestic pork production satisfies relatively less of the overall consumption (domestic and manufacturing) of pork, but meets the demand of a significant proportion of households and individuals. Compared to the period 1991–1995, average domestic production of pork increased in 1996–2000, from 1.9 million kg to 2.5 million kg. Production however declined from 2.4 million kg in 1999 to about 2 million kg in 2000.

Beef and lamb, were not tariffed and thus a maximum of only 100 per cent could be applied to imports of these commodities from extraregional sources. In 1999, in response to the adverse effects on the domestic industries of the relatively low tariffs, the rates on imports of lamb and beef were raised from 0 per cent and 30 per cent respectively, both to 40 per cent, which is the current rate applied to imports of these products from extraregional sources. Domestic production of beef, except for partial recovery in 2000, has been on the decline. Domestic production of mutton, with the exception of record production in 1996, has recorded fairly constant domestic production, averaging approximately 53,000 kgs over the 10-year period.

Given the threat to domestic industries and the importance of these industries to food security, Barbados obtained the approval, in 2001, of the Council for Trade and Economic Development (COTED) for a derogation of the CET rate for these products. This has given it the policy flexibility to increase these rates to 100 per cent. A significant proportion of beef and lamb for domestic consumption is, however, imported. Due to this and to the administrative difficulties associated with applying different rates to different tariff lines, to date there has been no resort to the option to increase these rates to the maximum of 100 per cent.

Vegetables (table 7)

Similar to livestock and dairy, for all sensitive vegetable products the maximum bound rates are also the applied rates. The current bound/applied rates for vegetables range from 120 per cent for products such as cabbages, lettuce, carrots and cucumbers, to 175 per cent for products such as sweet peppers and okras, and 218 per cent for tomatoes. Vegetable production has generally increased over the period, with products exhibiting mixed changes due to a variety of factors; thus they show no clear growth or declining trends. Carrots, tomatoes, cucumbers, lettuce and okras comprise the most significant proportion of total domestic vegetable production. Sweet peppers and melon, although produced on a smaller scale, are nonetheless important to food security and to efforts at diversification of non-sugar agriculture.

Root crops (table 8)

In the case of root crops, only sweet potatoes and onions have been tariffed, and therefore have an applied rate that is equivalent to the bound rate (175 per cent and 236 per cent respectively). For all other root crops such as yams and cassava, the applicable rate for extraregional imports is 40 per cent and the ceiling binding is 100 per cent.

Major sources of carbohydrates, sweet potatoes and yams are the most widely produced root crops, with high local demand for the locally grown varieties of sweet potatoes. Domestic production of root crops, except for the period 1995–1997, has generally been on the decline. Sweet potatoes, in particular, have recorded widely fluctuating production from one year to the next. Onions have been a particularly important domestic crop, increasing in production over the period, with record production in 1995 and some even being exported. Average production during the period 1991–1995 (786.7 thousand kgs) was higher than during the 1996–2000 period (528.5 thousand kgs).

Fruits

Although little data on domestic fruit production is available, this category is important for maintaining a diversified food basket of sensitive products. With the notable exception of melons, currently subject to a rate of 161 per cent, most fruits imported into Barbados face a rate of 40 per cent, which may partly account for the general decline in domestic production in this category.

Herbs and spices

In the case of herbs and spices, only shallots face tariffs, with an applied rate that is equivalent to the bound rate. For all other herbs and spices such as thyme, marjoram and the like, the applicable rate for extraregional imports is 40 per cent and the ceiling binding is 100 per cent. This emerging category, of importance to domestic production, provides relatively good yields and has important linkages to the agro-processing industries. Most of the fresh herbs consumed locally have traditionally been sourced from domestic production.

(b) *Policy objectives and tools for the agricultural sector*

The constraints associated with “small-islandness” identified in Section II and the economic and business climate in Barbados militate against the price competitiveness of primary agricultural production. Barbados, like many SIDSs, with the advent of the multilateral trading process within the framework of the WTO, has had to find new and innovative ways of responding to the challenges posed by increasing trade liberalization and the erosion of preferential markets. Such challenges include making agriculture viable and attractive for investment in the national economy and developing a strong agribusiness and marketing focus.

Given the traditional predominance of mono-crop culture in Barbados, and indeed in many SIDSs, agricultural producers would not achieve international competitiveness in production, processing and marketing systems without carefully directed State support. Ongoing research and development on both crops and livestock is conducted by the Ministry of Agriculture and Rural Development and the results are shared with the farming community.

The GoB has also provided the impetus for private-sector-driven initiatives, such as the “Buy Local” campaign that started in the manufacturing sector, and which seeks to engender consumer awareness of and loyalty for local products. Similarly, the creation of a logo easily identifying locally produced agricultural products is a marketing measure that is fully supported by the Ministry of Agriculture. This is complemented by regulatory efforts for the mandatory labelling of all livestock products to allow consumers to easily differentiate the imported from the domestically produced product.

In August 2001, the Prime Minister of Barbados announced a new policy aimed at expanding the domestic market for agricultural commodities. In outlining this policy in the *Economic and Financial Policies of Government*,⁵ it was stated that the Government would lead the way by increasing the consumption of locally produced agricultural products in schools and other Government institutions. The policy provided that at least 60 per cent of the requirements for beef, lamb, poultry, fish, vegetables, root crops and herbs and spices should be sourced locally.

Barbados has traditionally used trade policy to assist in the development of sensitive commodities, which, judging by the production figures over the last 10 years, has met with considerable success. The non-sugar agricultural subsector currently contributes more to GDP than sugar. Prior to the implementation of Barbados’ WTO commitments in April 2000, the importation of sensitive agricultural commodities was limited using a non-automatic licensing system, which restricted the importation of

⁵ Financial Statement on the Economic and Financial Policies of Government, presented by the Rt. Hon. Owen Arthur, Prime Minister and Minister of Economic Affairs, Barbados, 8 August 2001.

sensitive products primarily to periods of shortages. Under the current liberalized regime, trade policy, through the application of the maximum allowable bound rates and recourse to the SSG, is used to safeguard sensitive domestic production.

In November 2001, the GoB introduced a National Emergency Economic and Financial Programme as a temporary measure to safeguard domestic food security, provide conducive conditions for the recovery and revitalization of the key subsector critical to Barbados' food security basket, and to maintain a satisfactory level of economic activity to ensure Barbados' continued ability to finance the necessary levels of imports. This measure had its genesis at a Special Consultation on the economy, involving both private and public sector personnel, which resulted in a 90-day emergency package to cushion Barbados from the uncertainty of events following 11 September 2001. This programme is no longer in effect.

The Agricultural Incentives Scheme (AIS) complements trade policy supportive of domestic production. This scheme has been designed to lower costs and stimulate production. It provides for incentives and rebates to agricultural producers in a number of areas, from land preparation and cultivation to post-harvest and farm management. Since the AIS had not been used to maximum effect by the farming community, it was revitalized in 2001 to include new incentives, greater advertising of the available incentives, improved administration of the scheme and assignment of an officer to oversee its implementation and management.

The aforementioned policies and programmes are further complemented by increased emphasis on intersectoral linkages by the MARD. In this regard, the MARD has been forming strategic partnerships with ministries, such as the Ministry of Tourism to increase the percentage of domestically produced foods being utilized in the hotel and restaurant industries. This collaborative effort between the Ministries of Agriculture and Tourism, known as the Linkages Project, has seen completion of Phase One, namely an assessment of the supply capability of domestic producers; Phase Two, which involves assessment of demand in the hospitality sector, is scheduled to be implemented shortly. Other initiatives with respect to the tourism sector include the promotional cook-off designed by the Barbados Agricultural Development and Marketing Corporation (BADMC) to heighten awareness and use of BBB lamb in hotels and restaurants. The BADMC also aims to launch a recipe book of BBB lamb dishes to further promote its use by chefs and cooks. The farming community in Barbados comprises mainly an ageing population. To heighten awareness about the agricultural sector and ensure its survival, the MARD has launched initiatives involving youth and youth participation in agriculture. These include programmes at the Barbados Community College and the Samuel Jackman Prescod Polytechnic, as well as support to youth groups such as the 4-H Foundation.

(c) *The impact of recent market liberalization and related factors on the domestic market*

Barbados implemented its WTO-compliant tariff only regime in April 2000 and, as such, there is insufficient time series data to provide pre- and post-implementation statistical analysis. Recent market liberalization has negatively affected domestic production in a number of key industries; the experience of industries such as poultry, and the sharp decline in the production of some commodities such as carrots and cabbages is instructive. It is also noteworthy that whilst the distributive sector increased its volume of imports, in many cases sourcing imports at very low prices, such savings were generally not passed on to the consumer. Informal surveys have not revealed a fall in agricultural food prices and, since the advent of trade liberalization, the retail price index (RPI) for food has not shown any noticeable decline. Thus while the ratio of imports to domestic production has increased since 2000, placing domestic production, farm income and food security at risk, the major beneficiary has been the distributive sector at the expense of both the farming community and consumers.

Poultry imports for the period 1991–1999 averaged 1,737 tonnes. In 2000, the year in which Barbados liberalized its trade regime, imports of poultry amounted to 2,676 tonnes. For the month of June 2000,

they were more than double the average for the same month in 1999 and 1998. At that time, imported poultry was sold at a slightly lower price than that of local poultry. The industry has blamed increasing imports of poultry as the major cause of the reduction in the labour force and worker hours, and excess of stock to unprecedented levels. It was only because of key policy interventions by the GoB that the damaging effects on the domestic poultry industry were averted.

Liberalization has also negatively affected the pork industry. Prior to the opening up of the market in April 2000, domestic output received preference in the manufacturing process for pork products, with at least 50 per cent of the required pork input being sourced domestically. Domestic producers have lost this market segment since April 2000 when this informal arrangement ceased. However, faced with increased imports and a declining market share, domestic producers have responded with innovative marketing tools that seek to differentiate the imported product from the local product. Essentially, the marketing campaign seeks to raise awareness of the quality of the local product, highlighting this characteristic rather than price. This campaign has been so successful that currently domestic supply is insufficient to meet local demand.

Liberalization has also had a negative impact on domestic vegetable production. Domestic production of cabbage and carrots fell from 1,015.2 tonnes and 1,734.6 tonnes in 1999, to 780.8 tonnes and 1,025.3 tonnes respectively in 2000. Preliminary estimates indicate that production in 2002 has further declined. Similarly production of tomatoes, cucumbers, sweet potatoes, yams and onions has also recorded declines.

Barbados reserved the right to utilize the SSG under Article 5 of the AoA to safeguard sensitive domestic production. However, analysis by the Ministry of Agriculture, and experience since the enactment of legislation to give effect to the Special Safeguard provision, have shown that, in its current form, this provision does not provide adequate coverage for domestically produced goods in SIDSs. The additional duties calculated under this measure do not adequately address the problem of low-cost products from countries that spend exorbitant amounts in domestic support and export subsidies to their farmers.

Barbados' food trade performance has been similar to that of many other developing countries during the 1990s. It has experienced a widening gap between imports and exports and the further entrenchment of its status as a NFIDC during this period. Barbados' food trade imbalance grew from BDS\$ 144.1 million in 1991 to BDS\$ 364.2 million in 2000. Population statistics reveal that over this period, the resident population increased by only 6,000, from 262,000 in 1991 to 268,000 in 2000. With the exception of 1992, 1996 and 1997, Barbados' trade imbalance in food has exceeded BDS\$100 million every year (table 9). Between 1999 and 2000, food imports increased from BDS\$ 278.1 million to BDS\$ 478.6 million, while exports experienced a further decline, from BDS\$ 118.5 million to BDS\$ 114.4 million. Food exports as a percentage of total exports declined by 0.5 per cent and food imports as a percentage of total imports increased by 8.2 per cent. The food imbalance in 2000 (BDS\$ 364.2 million) was only surpassed by the imbalance of BDS\$ 399.8 million recorded in 1993.

The last 10 years have also witnessed a structural change in the composition of agricultural and food imports and exports. For example, while the average value of food imports over the period 1997–1999 increased by BDS\$ 65.2 million over the 1995 figure of BDS\$ 226.2 million, it is interesting that the total volume of food imports declined. The average volume of food imports for 1997–1999 was 143.3 million kg, compared to 184.4 million kg in 1995. Imports of cereals and cereal preparations (SITC head 04) significantly declined in volume (from 94.2 million kg in 1995 to an average of 31.3 million kg in 1997–1999), but recorded increased import value from BDS\$ 43.5 million in 1995 to an average of BDS\$ 55 million in 1997–1999. Thus, in general, Barbados has been importing *less* food in terms of volume but *more expensive* food products overall. This anomaly is explained by the fact that as the Barbadian population has become increasingly affluent, and as the middle class in Barbados has expanded, there has been a shift in food tastes, which is reflected in the demand for higher priced and better quality foods. The influence of advertising has also resulted in greater demand for certain brands of products, particularly those originating from North America.

In addition, while the United States, Canada and the EU (primarily the United Kingdom) continue to be the main source of food imports, CARICOM states are gaining an increasing market share in the Barbadian market, in part stimulated by duty-free access as a result of the CARICOM Treaty and the prospects of higher prices in the Barbadian market. Barbados' exports have also shifted away from primary products to more processed and semi-processed products. Apart from the sugar exports to the EU, CARICOM is becoming an increasingly important market for Barbadian exports of processed products such as sausages and fish, as traditional importers such as the United States are imposing greater non-tariff barriers.

(d) *The impact of agricultural support programmes in exporting countries on the domestic market*

Measures, whether export subsidies or domestic support, which engender unfair competition in SIDSs markets, negatively affect domestic production in the SIDSs. Insofar as such schemes are applied to products of interest to Barbados, making the export from these countries artificially competitive in comparison to the domestically produced alternative, the demand for, and consequently domestic production of certain products is negatively affected. In many cases, the volumes, although not excessive to the exporting country, constitute a significant proportion of domestic consumption in the SIDSs, thereby affecting domestic production and leading to doubts about its continued viability.

Export support programmes

The majority of products that benefit from major export subsidies, such as coarse grains, are not produced by Barbados, and hence domestic production of sensitive commodities is not directly affected. In fact such subsidies benefit Barbados, as a NFIDC by reducing the cost of these products and hence the total food bill. Due to the lack of detailed information on the general and product-specific application of export credits and export insurance/guarantee schemes, it is difficult to assess the impact such schemes have on domestic production. It is likely, however, that export credits, insurance and guarantee schemes, when considered in tandem with domestic support programmes in developed countries, could place producers and exporters in these countries in an advantageous position vis-à-vis producers in developing countries, and in particular SIDSs.

Domestic support programmes

Domestic support programmes can adversely affect domestic production in SIDSs, since such programmes may stimulate and artificially maintain production, thereby creating excess capacity, which facilitates export, usually to DCs. In addition, domestic support programmes that provide massive support to farmers in developed countries can maintain prices at artificially low levels. Such low-cost products, when entering the markets of SIDSs, wreak havoc on domestic production which, in addition to the inherent disadvantages of SIDSs, mentioned earlier, does not benefit from excessive amounts of domestic support.

III.3 Major products for the export market

Sugar remains the predominant agricultural export crop in terms of both volume and value. Apart from the export of sugar under preferential arrangements, Barbados' experience with exports over the period 1991–2000, though involving a wide range of products, has been somewhat disappointing. Those products which had a minimum average export volume of 10,000 kg over the 10-year period included sweet potatoes, breadfruit, hot peppers, okras, yam, avocado, cut flowers and foliage, coconuts (not shelled), golden apples, paw paw and sour sop. In general, the commodities with the greatest volumes earned the greatest export revenues. However, cut flowers and foliage recorded the fourth highest average export value over the period, but in terms of volume this category was the seventh highest (table 10a and b).

Barbados is currently exploring the market potential for non-traditional exports, with emphasis on value-added and higher priced (niche market) products such as herbs and spices, and for signature products such as BBB sheep, Barbados Cherry and West Indian Sea Island Cotton. Such a plan could result, for example, in the export of semi-processed and processed West Indian Sea Island Cotton (WISIC) products, rather than lint. Although comprehensive statistical data is not available for some of these non-traditional and emerging products, and they have accordingly not been individually analysed in this study, the continued viability and existence of an agricultural sector in Barbados will depend on a greater emphasis on such products.

In addition to concentrating on niche markets, trade data shows that Barbados has, within the last five years, experienced growth in the export of agro-processed products such as sausages, margarine, luncheon meat and juices. In 1998, for example, exports of canned sausages earned over US\$ 2 million, which is much higher than the export earnings from any single primary agricultural commodity (with the exception of sugar) in any year during the period 1991–2000. Thus, although prominence is given in the present study to primary agricultural products, any progress and competitive advantage Barbados has made, or develops, in both primary and agro-processed products should be fully exploited.

Barbados is also analysing the market potential for products such as hot peppers, sweet potatoes, yam and cut flowers and foliage, which have demonstrated export viability but have seen a significant decline in export volumes and values over the past five years. Technical assistance is needed for a review of the country's export programme and for identifying the factors that have led to its decline over the past 10 years.

(a) Product identification and analysis

This sub-section is divided into sugar and those products within the non-sugar sub-sector for which Barbados has recorded the greatest export values over the period.

Sugar

Sugar is a bulk commodity exported by a single exporter (the BAMC) to the EU under preferential trading arrangements. Although sugar can be traded on the world market, the comparative prices render the EU the most lucrative prospect for exports of bulk sugar from Barbados. The prospects and challenges for sugar traded under the ACP/EU preferential scheme are addressed in the section on preferences.

Sugar as a commodity does not benefit from relatively high bound rates, as the applied rate for sugar imported from extraregional sources is currently 40 per cent, and sugar exports do not benefit from export subsidies. However, sugar cane producers do benefit from some domestic support measures such as the cane replanting incentive, which is designed to promote the planting of canes that provide better yields and higher sucrose content. Payments under this scheme averaged BDS\$ 1.25 million per annum for the period 1994/95 to 2000/01, with no payments being made under this scheme during the financial year 1999/00. In addition, sugar cane producers have benefited from deficiency payments (made within the 10 per cent *de minimis* limit) for the 1999/00 and 2000/01 crops amounting to BDS\$ 3.5 million and BDS\$ 3.68 million respectively. These payments were necessary due to the falling exchange rate resulting in lower prices for the producers. For example, the prices paid to sugar cane farmers dropped by 16.5 per cent, from BDS\$ 82.77 per tonne in 1998 to BDS\$ 69.13 per tonne in 2001.

Sugar exports over the period have been mixed, with a high of 65.7 thousand tonnes in 1991 and a low of 38.5 thousand tonnes in 1995 (table 11). Sugar's declining contribution to the national economy has been partially attributed to the increasing divergence between its average export price and the cost of domestic production. Export earnings from this commodity have, with the exception of 1996 and 1997, been on the decline. The declining value of the euro vis-à-vis the US dollar, since its introduction in January 1999, has exacerbated the situation; in 2000 the value per tonne of exports was the lowest for

the period.

Non-sugar agriculture

As the production and profitability of sugar has declined, there has been an increased interest and export drive for other products that offer greater scope to exporters and farmers. In particular, the four products for which Barbados recorded the greatest export values over the period were breadfruit, hot peppers, sweet potatoes and cut flowers and foliage. In addition, cotton, which has been exported in the past, features prominently in Barbados' focus on niche market products, and is part of the strategy for the revitalization of its export programme.

There are a few key exporters of commodities within the non-sugar agriculture sector, primarily exporting to the markets of the United Kingdom and Canada. Although individual commodities exported under this category may be small in relation to some other countries and even to the sugar industry, as an aggregate such exports, apart from benefiting exporters, are an important source of revenue and income stability to farmers.

Whilst the export of commodities, excluding sugar, during the period 1991–1995, could be considered small relative to that of other countries, over the period 1996–2000, Barbados' exports of agricultural commodities drastically declined, particularly in 1999 and 2000. For example, exports of hot peppers recorded a high of 714,916 kg in 1994, but fell to 5,574 kg in 2000. Similarly drastic declines were recorded in exports of sweet potatoes, breadfruit and cut flowers and foliage (table 12).

(b) Policy objectives and tools to enhance exports and build export capacity

The desire to enhance exports and build export capacity is intrinsically linked to the need to maintain an agricultural sector in Barbados for the purposes of economic diversification, food security and environmental considerations. Barbados has adopted a holistic approach to the development and promotion of products for export that includes elements aimed at production, marketing and export promotion. To assist in food production and manufacturing, the GoB has provided tax concessions and implemented incentives schemes and rebates through various ministries including the Ministry of Agriculture and Rural Development, the Ministry of Commerce, Consumer Affairs and Business Development and the Ministry of Industry and International Business.

With respect to export facilitation, the GoB has provided agricultural exporters and exporters of food products with various incentives, including export credit schemes. In the past, facilities such as an export revolving fund and the services of an export marketing company, the Barbados Marketing Corporation, were available to exporters of agricultural produce. Assistance with the preparation of export documentation, package design and other trade facilitation services were also provided through the former Barbados Export Promotion Corporation (BEPC), later subsumed into the Barbados Investment and Development Corporation (BIDC). The Government has also sought to involve the various missions and embassies in market development activities and product promotion drives.

Production

At the production level, incentives and rebates through the Agricultural Incentives Programme have been introduced to increase production, lower costs and improve quality. For example, support is provided for the establishment of on-farm storage and post-harvesting facilities such as chill rooms. To enhance the production of value-added and niche-market products, incentives have been introduced for such initiatives as organic farming. Coupled with incentives for items such as approved farm management computer programs and rebates on the adoption of new technologies (such as greenhouses and hydroponics systems), it is envisioned that overall production costs will be reduced and the production of items for which there is a growing demand, and for which price is not the primary consideration, will be stimulated. Farmers are also being educated about sanitary and phytosanitary (SPS) measures,

hazard analysis critical control points (HACCP), and other standards which have an impact on the quality of produce and thus on its export performance.

Marketing and export promotion

Within the Agricultural Incentives Framework, incentives have been specifically targeted at exporters. A rebate of 30 per cent, up to a maximum of BDS\$ 10,000 has been introduced to defray the cost of international transport and freight for exporters of fresh produce. Exporters can also benefit from a technical assistance fund of BDS\$ 250,000 to assist producers and marketers in the conduct of feasibility studies, access new technologies and implement quality assurance schemes related to the export of fresh agricultural produce.

The most recent initiative targeted to assist exporters was announced within the framework of the annual budget presented by the Prime Minister and Minister of Finance on 23 October 2002, in which the establishment of an Export Development Fund of BDS\$ 500,000 was announced. It is envisaged that this Fund will serve as an export credit facility to facilitate the timely payment of farmers by exporters. This has been a key issue negatively affecting the performance of the export programme for fresh agricultural produce.

The Ministry of Agriculture and Rural Development has also sought assistance from international agencies such as the FAO and IICA for conducting assessments and studies to identify the products with the greatest potential, and possible markets. Assistance is also being sought for enhancing Barbados' regulatory systems with respect to conduct and certification regarding risk analyses, minimum residue limits, Hazard Analysis and Critical Control Points (HACCP) and International Standards Organization requirements to ensure that SPS standards are met and maintained.

The role of the Government at this juncture is important for creating a climate conducive to investment and trade, with particular emphasis on value-added and niche-market products. The achievement of this objective requires key action steps, including:

- (1) The conduct of basic research and developmental work, where feasible, in joint partnership with the private sector, to support agricultural producers; joint partnerships and technical assistance from organizations such as FAO and IICA in these areas should also be pursued.
- (2) The provision of incentives and tax concessions to attract investment in agricultural and food manufacturing activities.
- (3) The development of export and trade facilitation services such as revolving funds and credit guarantee schemes. This idea was presented as part of the key findings/recommendations of the Nurse Study,⁶ which highlighted the need for such facilities aimed at providing exporters with short-term capital to pay farmers for produce so as to rebuild confidence in the export promotion programme.
- (4) The development of standards, legislation and regulations to guide production and manufacturing norms and address emerging concerns from increased trade liberalization.
- (5) The development of financial and technical assistance instruments that support investment in technologies, and which facilitate the attainment of international standards.
- (6) Lobby the international donor community to provide much needed technical and financial assistance, in particular to small and medium-sized firms in their efforts to build brand recognition and implement product differentiation strategies.

⁶ *Review of the Export Promotion for Agricultural Commodities in Barbados*, May 2002, prepared by consultant James Nurse, in conformity with the guidelines under FAO Project TCP/BAR/0168.

- (7) The development of a structured programme to promote organic production and the production of other environmentally preferable products, including facilitation of the certification of domestic producers and development of the local market for organic products.
- (8) Make effective representation to the main trading partners to ensure that non-tariff barriers do not adversely affect efforts to access markets, and participate in multilateral and other forums to ensure that SPS and technical barriers to trade (TBT) are not used as non-tariff barriers to exports from developing countries.

(c) *The role and importance of preferential market access*

As mentioned earlier, the principal agricultural export of Barbados, sugar, has benefited for many years from preferential access to the EU market. As such, trade preferences have provided the basis upon which the agricultural sector in Barbados, and many SIDSs, has developed. The revenues, which accrued from the export of sugar were used to fund a range of critical public sector investment projects that have collectively provided a foundation for social and economic development in Barbados. Despite the declining fortunes of the sugar industry in Barbados, preferential market access arrangements continue to be extremely important and relevant. There is no doubt that in the absence of these trade preferences, given the state of the world market for sugar, the sugar industry would have collapsed years ago, with serious consequences for the agricultural sector and the Barbados economy as a whole. As a result, Barbados, along with other CARICOM members, attaches great importance to the maintenance of these preferential arrangements and their accommodation within the multilateral trading system.

Despite the positive contribution of trade preferences to the sustained development of many SDEs and SIDSs like Barbados, these arrangements have been subject to severe pressure and challenges in recent decades. The EU's sugar regime provides the framework under which sugar exports from the ACP States enter the EU market in specified volumes and at guaranteed prices. Reform of the EU's sugar regime could have negative effects on the current market access conditions offered to the ACP sugar producers such as Barbados. The possible changes include reform of the EU's Common Agricultural Policy (CAP), adjustments associated with EU enlargement, the Everything-but-Arms Agreement and the need for the EU to meet its obligations under WTO agreements. The recent request by Brazil and Australia for consultations with the EU concerning WTO compatibility of the EU's sugar regime is instructive in this regard. These factors, individually and combined, could result in changes in the structure of the EU's sugar regime to the detriment of ACP suppliers. In the final analysis, even if a guarantee of access is maintained for traditional suppliers, there could be significant downward pressure on the price paid to ACP suppliers. It is a matter of major concern for Barbados, one of the highest cost producers of cane sugar in the world, since there are serious implications concerning the level of government support that would be required to maintain the industry.

In addition to preferential access under current agreements such as the ACP/EU Sugar Protocol, preferential access needs to be granted for key products of importance to SIDSs. The erosion of traditional preferences necessitates that new and accommodating measures be instituted to avoid SIDSs being marginalized in the multilateral trading process. Such marginalization would negatively affect foreign exchange earnings and hamper attempts to diversify the economic base, making the economy more susceptible to changes in the external environment.

(d) *Market access opportunities arising from liberalization*

It was postulated that liberalization within the framework of the WTO would bring benefits to all countries involved in the process, and in particular to developing countries such as Barbados. In practice however, these countries have not been able to take advantage of available market access opportunities for a number of reasons.

The reduction in tariffs, including tariff peaks and tariff escalation, particularly in developed countries, and the implementation of more transparent trade practices should have improved market access opportunities for developing countries like Barbados. However, it should be noted that, despite the fact that Barbados is a beneficiary of preferential tariffs (at a preferential rate of 0 per cent in many cases) for a number of agricultural commodities under arrangements such as the ACP/EU Trade Arrangements, the Caribbean Basin Initiative (CBI) and CARICOM/Canada Trade and Economic Cooperation Agreement (CARIBCAN), very few gains in terms of non-traditional agricultural exports have been realized. This relatively poor performance demonstrates that there are other factors, apart from low tariffs (supply side problems, limited export capacity, non-tariff barriers and domestic support policies), that must be addressed before SIDSs like Barbados can participate meaningfully in global trade. In fact, tariff reductions, particularly by developed countries, will erode the margin of preference currently enjoyed by countries like Barbados and result in more competitive markets. However, where tariff escalation exists in developed countries, there may be some market access opportunities provided for value-added products exported by countries like Barbados. A joint UNCTAD/WTO study⁷ revealed that for products of particular interest to developing countries, such as processed products, tariffs were often levied at some of the highest rates.

The emergence of new forms of non-tariff barriers, such as TBT and SPS measures, have limited the capacity of SIDSs to reap any tangible benefits from the multilateral trading process. For Barbados, these have proved to be the greatest hindrance to increased market access and any material benefits from WTO trade liberalization.

Market access opportunities have also been adversely affected by the level of domestic support provided to domestic producers in the target markets. The overall reduction in the levels of domestic support should have benefited Barbados. However, the practice of shifting support from non-allowable categories into “green box” measures — without the requisite discipline needed in this category — has resulted in overall levels of support increasing, rather than remaining constant or decreasing, as postulated in the multilateral trading process. This has negated the growth potential of SIDSs’ exports into traditional and non-traditional markets.

The prospects for increasing exports to developed countries as a result of trade liberalization are not as encouraging as they may appear to be. The non-traditional markets of other developing countries may actually offer better opportunities for SIDSs like Barbados provided that logistical difficulties (e.g. sea and air transportation links, limited business contacts and established linkages) are overcome. However as a high-cost producer, Barbados will have to develop products that can compete on the basis of non-price competitive factors. Value-added processing offers greater scope for the development of such products and, as a consequence, technical and financial support needs to be mobilized to assist the small firms that operate in Barbados to reposition themselves to participate in the global marketplace.

IV. OPTIMAL MODALITIES FOR SUSTAINED AGRICULTURAL DEVELOPMENT IN BARBADOS

IV.1 Introduction

The preceding sections of this report provided the background against which modalities could be considered and developed to address the main concerns and challenges facing sustainable agricultural and rural development in Barbados. This section therefore seeks to identify those optimal modalities for Barbados in relation to the market access, domestic support and export competition components of the Agreement on Agriculture (AoA) within the context of the ongoing negotiations. In this connection, the

⁷ UNCTAD/WTO, The post-Uruguay Round tariff environment for developing country exports: Tariff peaks and tariff escalation. Joint Study, UNCTAD doc. no: TD/B/COM.1/14/Rev-1 UNCTAD, January 2000.

initial modalities proposed by WTO members during 2001–2002, as compiled by UNCTAD, were reviewed and evaluated in terms of how these interact with country-specific concerns and products of interest listed in Section Two.

It is generally accepted that developing countries will require special and differential treatment (S&DT) if their development concerns are to be adequately addressed in the current negotiating process. Unfortunately, however, experience has shown that acceptance of the need for S&DT has not been accompanied by the development and implementation of a package of S&DT provisions that responds in real terms to the circumstances of all developing countries, and, in particular, to the peculiar circumstances of the most vulnerable developing countries, including SIDSs like Barbados. In the absence of a clear recognition of the diversity that exists among developing countries, and with a continuation of the “one size fits all approach”, it is unlikely that any modalities emerging from the current negotiations will go far enough to address the concerns of the smallest and most vulnerable economies, including SIDSs.

The peculiar circumstances, inherent structural weaknesses and constraints which severely limit the capacity of SIDSs like Barbados to participate and benefit from the multilateral liberalization process must be at the core of, and should therefore form the basis for, the development of optimal modalities for continuation of the reform process in trade in agricultural products.

In the case of Barbados, the modalities must address the fact that the country is highly dependent on food imports and is becoming even more so as imports continue to displace domestic production, which is characterized by high production costs and a general lack of competitiveness. As a consequence, **food security** is a major issue that should be addressed in the current negotiations, particularly for SIDSs like Barbados.

The modalities also need to recognize the **multifunctional role of agriculture**, and in particular sugar cane production, in generating foreign exchange earnings and economic activity, fostering rural development and rural employment, preserving the environment and rural landscape and promoting beneficial socio-cultural linkages. **Preferential market access**, which has been critical to the survival of the sugar industry, will continue to be essential for the sustained development of the agricultural sector. The modalities should also recognize the limited capacity of the Government of Barbados to finance large domestic support programmes, given the size and level of development of the economy. As a consequence, **border measures will be the principal tools/instruments** for safeguarding and promoting domestic production.

The modalities should facilitate the participation of Barbados in global trade by addressing supply-side constraints and providing support in **building export capacity and international competitiveness**. Technical and financial assistance will be as important as any trade instrument in this regard. S&DT should therefore include, as a major element, the provision of technical and financial assistance to disadvantaged countries, including SIDSs like Barbados, beyond the levels of assistance currently provided by specialized institutions and the donor community.

It is against this background that Barbados has sought to participate in the ongoing negotiations to influence the outcome in such a way that the emerging modalities are responsive to its concerns as a SIDSs. In this connection, Barbados, as a member of the Caribbean Community (CARICOM) has co-sponsored a number of proposals during the first and second phases of the current negotiations, which address market access, domestic support — “green box” subsidies, export competition, non-trade concerns, S&DT, trade preferences, SSG measures and food aid.

In addition Barbados co-sponsored a note on non-trade concerns (G/AG/NG/W/36) as well as a proposal by SIDSs (G/AG/NG/W/97 Corr.1). These proposals identify, in a general sense, the kinds of modalities that Barbados would welcome in the final outcome.

IV.2 Optimal modalities with respect to market access

While the modalities in all three areas (market access, domestic support and export competition) are considered to be of great importance to Barbados, those in the area of market access have special significance, and are particularly important given the circumstances and challenges which confront this small island. The final outcome of the negotiations in the area of market access are expected to determine in large measure how the agricultural sector in Barbados will perform in the medium to long term.

Modalities in the area of market access must be considered from two broad perspectives. First, the modalities that would focus on market access commitments applicable to other WTO members, and in particular to developed countries. These modalities will considerably influence the conditions under which exports from Barbados will enter the markets of other WTO members. There are three issues that require mention in this context: (i) the need for significant technical and financial assistance to address supply-side constraints and build export capacity and competitiveness; (ii) the need for reforms outside the AoA which will address the use of SPS measures and technical barriers to trade as non-tariff barriers; and (iii) the future of preferential trading arrangements within the context of trade liberalization.

Secondly, there are the modalities that would apply to Barbados, other SIDSs and SDEs within the context of S&DT, and which would determine the conditions under which exports from other members enter the domestic market of Barbados as imports. There is already significant pressure on the domestic market from recent market liberalization, which points to the need for greater flexibility with respect to the border measures utilized by SIDSs like Barbados.

(a) Tariffs

In terms of commitments to be made by Barbados, the approach to tariff reductions should be at the core of the market access modalities, given recent experience in market liberalization and the adverse impact on achieving food security objectives. There are a number of proposals that address the concerns of Barbados in relation to the possible negative impacts of further tariff reductions.

Exemptions relating to product coverage

The non-paper by Cuba, the Dominican Republic and other like-minded countries on the “Development Box”, the CARICOM negotiating proposals on Special and Differential Treatment and Non-Trade Concerns, and similar proposals by other members such as Turkey are particularly relevant in this regard.

The non-paper on the “Development Box” calls for basic food security crops to be exempt from reduction and other commitments using a positive list approach.

CARICOM, in its proposal on non-trade concerns, suggests that small developing economies should be allowed to maintain appropriate levels of tariff bindings as a S&DT provision for food and nutrition sensitive agricultural products through their exemption from further tariff commitments. This negative list approach proposed by CARICOM is similar to that proposed by Turkey and others. Appropriate tariff levels in this context refer to tariff levels that are effective in safeguarding domestic production of key sensitive commodities by significantly dampening the demand for imported competing products. These tariff levels would vary from product to product depending on the relative differential between domestic and c.i.f. prices.

Given the food security status of Barbados, with its extremely high import dependency, there are a number of sensitive agricultural products that will require measures such as exemption from reduction commitments. These products include poultry meat, eggs, pork, milk and food crops such as onions, tomatoes, cabbage, carrots and melons, among others. Such action would be justified on the grounds of the apparent inadequacy of current tariff levels and the adverse impact further liberalization would

have on food security. This approach is also justified given the very low levels of domestic support currently provided to the production of food crops and livestock products in Barbados and the limited capacity of the Government to finance large domestic support programmes. It also makes border measures such as tariffs even more relevant and important.

Eligibility for such exemption would have to be based on agreed upon criteria, with particular emphasis on the contribution of the product(s) to the food security basket. Eligibility should also be linked to the use of total domestic support which is below prescribed levels (e.g. below the *de minimis* level). Moreover, other criteria might need to be developed for the identification of eligible products.

Renegotiating zero or low bindings

A number of proposals also call for zero or low tariff bindings to be renegotiated at appropriate levels, particularly with regard to products of vital importance to food security. This issue of renegotiation of tariff bindings would not be applicable to Barbados, since most of the sensitive agricultural products were subject to the process of tariffication which resulted in relatively high bound rates. The issue would, however, be relevant for other CARICOM members who entered very low bindings during the Uruguay Round.

Tariff reduction

With respect to commitments to be made by other WTO members, and particularly by developed countries, the objective should be to improve market access opportunities for products of export interest to SIDSs like Barbados. It should be noted that Barbados currently benefits from preferential access to the United States, Canadian and European markets under the CBI, CARIBCAN and EU-ACP Trade Relationship, which means that its agricultural exports already benefit from relatively low tariffs and, in some cases, no tariffs at all. In this regard the perceived benefits associated with tariff reductions may not be as significant for Barbados as for other developing countries which do not benefit from these preferential schemes. Addressing tariff escalation may therefore provide greater benefits to the extent that it improves market access opportunities for value-added products.

A number of modalities have been proposed for tariff reduction including the harmonizing formula approach, a cocktail approach, the UR approach, the “staging” approach, a sectoral approach, a non-formula flexible approach and the approach advanced by CARICOM countries, including Barbados, which seeks to link tariff cuts to cuts in agricultural support measures.

Developed countries should adopt the modality that has the greatest impact on tariff peaks and tariff escalation and provides improved market access for products of export interest to DCs, SDEs and SIDSs. This may involve the adoption of one of the aforementioned approaches or a combination of the approaches identified for tariff reduction in developed countries; it should be the subject of detailed analysis to be undertaken on behalf of SDEs and SIDSs. Available information suggests that the harmonizing formula approach, or some modification of the same, would be the most effective for addressing tariff peaks and tariff escalation.

In the case of sugar, for which ACP SIDSs like Barbados benefit from trade preferences, special consideration is required in terms of the tariff reduction approach to be adopted by preference-giving developed countries.

The tariff reduction modality to be adopted by SIDSs and SDEs like Barbados should be developed as an S&D measure characterized by:

- An approach that offers SIDSs and SDEs the necessary space to maintain effective tariff bindings on sensitive products (The UR approach may be more appropriate

for sensitive products than the harmonizing formula approach, which would have a greater impact on tariff peaks and undermine efforts by SIDSs like Barbados to safeguard sensitive products.).

- A tariff reduction rate which is significantly lower (at least 50 per cent lower) than that applicable to developed countries.
- A minimum level of tariff cut per tariff line which is lower than that required of developed countries (a level of 5 per cent would provide some flexibility to countries like Barbados to maintain tariffs for sensitive products which may not qualify for the above-mentioned proposed exemption from reduction commitments. Such flexibility would be even more critical where product exemptions are not realized).
- A longer implementation period (10 years or more) for SIDSs to reduce tariffs.
- In the event that exemption from reduction commitments is not obtained, SIDSs like Barbados should be granted flexibility in tariff reduction commitments that allow for minimal reductions in tariff levels for sensitive products.

(b) *Special safeguard measures*

Experience has shown that even with a standstill in terms of tariff bindings, countries like Barbados will find it difficult to compete with imports of selected products, given the dynamic nature of international markets. Consequently, special safeguards will be an essential policy tool for the attainment of food security and rural development objectives.

CARICOM, in its market access submission G/AG/NG/W/100, proposed the establishment of a mechanism similar to the current SSG to facilitate the adjustment of small developing economies, including SIDSs. The mechanism should take the form of a S&DT provision for developing countries, and its application should be confined to a restricted list of eligible products deemed important to the food and nutrition security status of SDEs, including SIDSs. It should be noted that other members have tabled proposals which identify the need for some form of special safeguard provision.

Barbados is one of 38 WTO members that have recourse to the current Special Safeguard Provision under Article 5 of the AoA, and only recently (in July 2002) implemented the measure to address import surges that would occur as a direct result of low import prices. While limited time series data precludes an in-depth analysis of the impact of this measure, it can be generally concluded that the SSG has dampened the demand for some agricultural imports while being ineffective in respect of other products.

While Barbados would fully support a special safeguard that addresses surges in import volumes above a certain threshold and declining import prices below a predetermined reference price, that is, a safeguard structured along the lines of the current SSG, it should be noted that there is the need for some adjustment. For example, Barbados chose to utilize the SSG on the basis of the price trigger, since the volume-based trigger would only be invoked at what were considered to be relatively high volumes of imports of sensitive commodities in relation to total domestic consumption. Furthermore, even when the volume-based safeguard was triggered, the additional duty was limited to one third of the applicable duty, which, in some instances, was inadequate to reduce import levels. Having selected the price-based safeguard, experience has shown some deficiencies in this mechanism as well.

The effectiveness of the price-based safeguard is too heavily skewed towards products that have relatively high absolute reference prices as against products with low absolute reference prices. The amount of additional duty that can be applied is determined in large measure by absolute differences between the reference and the c.i.f. prices of shipments as against relative differences. As a consequence, once a product has a low reference price, the absolute difference between the reference and the c.i.f. price of the shipment will be low in absolute terms and the corresponding additional duty will also be low (e.g.

onions). This situation occurs despite the fact that the percentage difference between the two prices may be significant, and even higher than percentage difference that exists for a product with high absolute prices. In addition, even where the trigger is relatively high in absolute terms, the SSG has proven to be ineffective where c.i.f. prices are particularly low (e.g. chicken leg quarters, a residual product). An adjustment in the mechanism would be necessary to remove this deficiency and ensure that the SSG is as effective as possible in fully offsetting the price advantage of imports and thus safeguarding domestic production.

The Special Safeguard Mechanism for developing countries could have the following elements:

- DCs, including SIDSs, would designate eligible products and list these in their schedule of commitments (Products which benefit from non-exempt domestic support measures would be excluded);
- The greatest flexibility to use the special safeguard should be accorded to countries applying the lowest levels of domestic support and export competition measures;
- It can be triggered when the import quantity during the year exceeds the reference level (X per cent e.g. 110 per cent) of the average import level over the previous (x e.g. 3) years, or where the c.i.f. import price of the shipment falls below the reference level equal to the average domestic market price of the product in the previous (z e.g. 3) years;
- The SSM would take the form of a quantitative restriction in terms of a quota or an additional duty which completely offsets the fall in prices;
- The duration would be for one year with a right to extend;
- Immediate notification to the Committee on Agriculture of the WTO.

Given the experience with implementation of the current SSG, the SSM should be not be administratively burdensome, and should be relatively simple for developing countries to implement.

(c) *Tariff Quotas*

Barbados has commitments in relation to tariff rate quotas (TRQs) for those products which were tariffed during the Uruguay Round. Many countries, both developed and developing, have been calling for tighter administration of the tariff quotas and for expansion in the quotas and cuts in in-quota rates.

The approach to be adopted for tariff quotas should mirror that for tariff cuts. For food security sensitive products, Barbados should be exempt from further commitments with respect to minimum access. In the event that exemption is not accepted, expansion of tariff quotas should be kept to a minimum for sensitive products, taking into account the potential impact on domestic production and food security. In-quota tariffs for sensitive products should be accorded a standstill, or face minimal reductions, in keeping with the movement of bound rates for sensitive commodities.

Where developed countries have tariff quota commitments, particularly for products of export interest to SIDSs like Barbados, these countries should be required to improve transparency in the administration of tariff quotas, expand quota volumes and reduce in-quota tariffs with a view to improving market access opportunities. In the case of preference-giving countries, special considerations and flexibility will be required so as not to undermine existing preferential marketing arrangements which benefit ACP SIDSs like Barbados. The use of TRQs in maintaining existing preferential market access is addressed in the following section, which looks at trade preferences in a more substantive manner.

(d) Trade preferences

The main agricultural export of Barbados, sugar, benefits from access to the EU market through trade preferences. Consequently, Barbados, along with other CARICOM members, attaches great importance to the maintenance of these preferential arrangements and their accommodation within the multilateral trading arrangements.

CARICOM, in its market access submission G/AG/NG/W/100, proposed that WTO members examine options aimed at rendering the market access concessions offered to developing countries through trade preferences stable, transparent and predictable. A more substantive submission was made to the February 2002 meeting of the Committee on Agriculture (CoA) in which CARICOM called for:

- Trade preferences to be accepted as a legitimate instrument to assist the development of small developing economies;
- Existing preferential arrangements to be exempted from challenge under Article XXIII of the GATT on nullification and impairment;
- Producers in SDEs to be compensated for erosion of preferential prices; and
- Development of instruments which facilitate diversification.

In addition, proposals were submitted by Mauritius and a group of SIDSs, which call for the protection of current market access conditions for SIDSs and single commodity producers. In this regard, it was proposed that any review of TRQ administration should not have a negative impact on the terms and conditions of current market access and that non-reciprocal tariff rates to developing countries should be improved and bound during the reform process.

The TRQ mechanism is one way of making preferential market access fully bound under the WTO's AoA. In this regard, the modality could consist of the following elements:

- A minimum percentage of the total annual volume of each TRQ should be reserved for imports from countries which are small-scale exporters of the product, at an in-quota rate of 0 per cent;
- All TRQs allocated to small-scale exporters that are unused after six months shall become available to other exporters on a most-favoured-nation (MFN) basis
- A "small-scale exporter" is defined as a country whose export share of the product concerned in the world market is less than X per cent; and
- A list of products of export interests to small-scale interests shall be drawn up and will form the basis for members to open TRQ for small-scale exporters; the volume of such products shall be determined as X per cent of its domestic consumption.

Barbados fully supports any proposal which seeks to preserve and, if possible, enhance the benefits arising from trade preferences. However, if trade preferences are to be reformed as part of the current process, consideration should be given to adequate transition periods, provision of compensation for losses incurred by SDEs, including SIDSs, and the provision of technical and financial assistance to support diversification.

(e) Other market access considerations

As indicated earlier, SIDSs like Barbados, with inherent structural weaknesses, will not be in a position

to benefit from the liberalization of agricultural trade in the absence of some market access considerations which fall outside those that deal with tariff reduction, tariff escalation, tariff quotas and the like.

First, there is the need for substantial technical and financial assistance to address supply-side constraints, build export capacity and exploit available market access opportunities in both traditional and non-traditional markets. This need is clearly demonstrated by the fact that even with significant tariff preferences in the past, including tariff free access, Barbados has made little progress in penetrating traditional markets in North America and Europe with non-traditional agricultural products. Furthermore, Barbados has actually experienced declines in non-traditional agricultural exports to its traditional markets, with the CARICOM market emerging as a major market for exports.

The S&D provisions emerging from the current negotiations must be so structured that they recognize the need for technical and financial assistance to assist small firms in SIDSs like Barbados to develop their unique products for niche markets through the adoption of innovative production and marketing initiatives. Penetrating competitive markets with new products will require the building up of a brand image and aggressive marketing, with obvious consequences for resource requirements. Technical and financial assistance should therefore become a legally binding commitment within the S&D provisions arising from the negotiations.

However, even where small firms in SIDSs like Barbados have empowered themselves to compete in the export market, they often meet obstacles in the form of SPS and TBT requirements, which have in some cases emerged as new forms of non-tariff barriers. There are two dimensions to this issue. First, there is a need for technical and financial assistance to SIDSs, for both their private and public sectors, to enable exports to meet legitimate SPS and TBT requirements. Secondly, the WTO's SPS and TBT Committees need to give serious consideration to obviating the use of these measures as non-tariff barriers. While consideration of SPS and TBT falls outside the scope of the current negotiations, they are undoubtedly major factors which affect market access. This is in fact a real weakness in the approach to trade liberalization in agricultural products, since the current reform process does not in itself address some of the major concerns of SIDSs.

IV.3 Optimal modalities with respect to domestic support

Barbados and other CARICOM countries have developed proposals that identify optimal modalities with respect to domestic support. Some other WTO members have advanced similar proposals, which in essence seek to tighten up on the use of measures that can be classified as exempt from reduction commitments, particularly in the case of developed countries, while offering developing countries some additional flexibility.

Barbados currently uses a combination of input and investment subsidies in the form of a Farm Incentive Scheme administered by the Ministry of Agriculture; it is based on the provision of rebates on input and operating costs (e.g. irrigation facilities and land preparation). In addition, an Agricultural Development Fund (ADF) offers concessionary loans and grant funds for agricultural development activities. Special financial support is also provided to sugar in the form of significant general services support and, in recent times, the provision of deficiency payments.

In terms of domestic support, Barbados like many other developing countries, did not enter a figure for Aggregate Measurement of Support (AMS) in its Schedule of Commitments; it is therefore restricted to the use of Annex 2 measures and measures that conform with the provisions of Articles 6.2 and 6.4 of the AoA.

Traditionally, the Government has provided domestic support to agriculture in the form of input subsidies and investment subsidies, and through the provision of technical assistance which is provided within the framework of paragraph 2 of Annex 2. In this regard, particular emphasis was placed on: (1) research and development; (2) training and extension services; (3) marketing information and related

services; (4) pest and disease control; and (5) the provision of infrastructure and other forms of technical assistance. Another feature of the incentives regime is up-front, duty-free concessions on a range of inputs, including machinery, equipment, chemicals and other supplies.

Incentives were provided mainly through input subsidies of a non-product-specific nature; these took the form of rebates on inputs such as spray cans, irrigation equipment, land preparation and fencing of pastures. In addition, a limited number of product-specific incentives were targeted at sugar cane production. Non-product-specific investment subsidies were also provided through concessionary loan financing provided initially through the State-owned Barbados National Bank (BNB), but more recently through the Rural Enterprise Fund and the Agricultural Development Fund, administered by the Rural Development Commission and the Enterprise Growth Fund respectively.

In recent years, with the advent of trade liberalization and the reduction in protective border measures, domestic support has become a more important policy tool for supporting agricultural production. In this regard, the Government has sought to expand the incentives scheme to provide for more targeted support to specific sub-sectors or commodities. Product-specific domestic support has become more relevant, and measures such as rebates on wind tunnel ventilation systems for poultry houses, price support for cotton, and rebates and investments in retooling the dairy sector have been introduced.

However the use of product-specific input and investment subsidies is constrained by the *de minimis* provision, which limits the scope of such support measures for stimulating the production of key sensitive commodities. Consequently, there is a need to provide flexibility to developing countries like Barbados by expanding Article 6.2 and revisiting the 10 per cent *de minimis* limit for SIDSs and SDEs.

(a) “Green box” or exempt measures

There has been an overall increase in the level of domestic support provided to agriculture, which has been achieved in part through a shift from the “amber and “blue boxes” to the “green box”. This shift in support to the “green box” has given rise to both trade and production distortions, which have largely favoured the developed countries that provide this support. This situation has placed producers in SIDSs like Barbados, which have limited resources to allocate to domestic support programmes, at a disadvantage vis-à-vis the producers in developed countries who benefit from significant domestic support. As a result, producers in SIDSs like Barbados have a limited capacity to compete in the markets of the developed countries and at the same time face increased competition in their domestic market from imports that benefit from domestic support.

Barbados would therefore fully support the position advanced by CARICOM, Canada, the Cairns Group and various developing countries that calls for the tightening of the “green box” criteria through a review of these criteria to ensure that only non-trade-distorting measures are included. As such, there should be two categories of domestic support measures — exempt and non-exempt measures — with strict criteria used to classify those measures. In this regard, payments used by developed countries under Annex 2, paragraphs 5–7 of the AoA should be excluded from the “green box” or exempt category.

Developing countries, including SIDSs like Barbados, should, however, be given increased flexibility in relation to domestic support measures as an S&D provision. In this regard, CARICOM has proposed a continuation of the category of “exempt measures” as established in Annex 2 of the AoA for developing and small developing economies, including SIDSs. In addition, development assistance, including investment and input subsidies provided under Article 6.2 of the AoA, should be expanded to include measures used by DCs, SDEs and SIDSs to meet their food security, rural development, poverty alleviation and agricultural diversification objectives, and these should be incorporated into the “green box” or exempt category.

Article 6.2 should therefore be expanded to include the following additional measures:

- Support to encourage agricultural processing;
- Investment and input subsidies of a product-specific nature;
- Support to all farmers in SDEs and SIDSs who participate in productive activities that contribute significantly to the attainment of key development objectives, thus removing the limitation of such support to low-income, resource-poor farmers or to small-scale household farmers; and
- Subsidies for agricultural marketing costs, including internal transport, post-harvest, storage and product quality improvement, both generally and for specific products.

In addition, the following measures used by DCs, SDEs and SIDSs should be included in the “green box” or exempt category:

- Government assistance to the agricultural sector to address the adverse effects of sudden changes in exchange rates on the price of main agricultural exports;
- Measures employed in structural transformation of the agricultural sector in order to move away from a reliance on preferential markets; and
- Domestic support measures to assist in the revitalization of rural areas in general, or to assist specific groups or sub-groups of producers within rural areas.

This flexibility would assist Barbados in repositioning the agricultural sector with a view to achieving food security, rural development and other development objectives. More specifically, it would provide a framework for the Government to expand and diversify its farm incentive scheme so as to provide a wider range of more targeted product-specific and non-product specific input and investment subsidies. It would also enable selective price support arrangements of both a general and product-specific nature to offset the high cost of domestic production, thereby assisting in the sustained production of key commodities for food security and rural development purposes.

In addition, recent experience in the sugar industry in relation to exchange rate movements, which adversely affected the returns to the industry, justifies the call for inclusion in the “green box” of government assistance to offset such losses. The Government of Barbados provided deficiency payments to sugar cane farmers (who experienced a 17 per cent decline in prices from 1998 to 2001) to compensate for falling prices associated with adverse exchange rate movements for the 1999, 2000 and 2001 crops, but it was constrained by the 10 per cent *de minimis* provision. It should be noted that other product-specific input subsidies (e.g. the Cane Replanting Incentive Scheme) would also be subject to *de minimis* limits.

It is expected that the Government will have to devote considerable resources to support the transformation and adjustment of the agricultural sector away from its reliance on preferential markets. This could include significant investments for retooling the sugar industry, including factory rationalization to diversify products and markets, and developing non-sugar food and export crops as well as livestock activities by providing attractive incentives to support diversification. Such incentives could include price support, input and investment subsidies and on-farm investments in irrigation, marketing, and post-harvest export and processing infrastructure.

Development of agricultural and related activities in special development areas and rural districts such as the Scotland District will require major investments on both public and private sector owned and controlled land. The fragility of the soils in the Scotland District requires that the Government invest in land conservation projects to stabilize the land there and thus make it suitable for selected economic activities, including agriculture. A special package of incentives will be required to encourage private

landowners to engage in commercial agriculture and to support efforts of the Soil Conservation Unit (SCU) to reforest unstable and vulnerable lands. Given the nature of the land in this area, incentives will have to be targeted towards specific activities such as fruit growing, sheep farming and reforestation. Thus product-specific and general input and investment subsidies will be critical.

(b) *De minimis* provisions

With respect to the 10 per cent *de minimis* level prescribed for developing countries, Barbados has only experienced one case where this was a limiting factor — when deficiency payment for sugar became necessary as a result of the declining returns to the industry due to adverse exchange rate movements. This 10 per cent *de minimis* limit could, however, also prove to be problematic for other commodities that may be promoted for food security, rural development and agricultural diversification reasons. For example, the Government is seeking to develop cotton as an export crop that could support the objective of diversification away from a reliance on preferential markets. Price support and other incentives will be necessary, such as incentives for harvesting, given the high cost and limited availability of labour in Barbados. Deficiency payments and market price supports may also be critical for the development of food-security-sensitive products. Ideally, domestic support to agriculture in SIDSs like Barbados should not be restricted to a *de minimis* level, and if restricted the level should be set at least 20 per cent.

Furthermore, to supplement the existing product-specific *de minimis*, a reallocation of the *de minimis* from non-product-specific domestic support to additional product-specific domestic support could be envisaged for products that are essential for food security and rural development (staple crops, traditional crops and livestock).

With respect to cuts in the Aggregate Measurement of Support (AMS), the objective should be to significantly reduce the level of trade- and production-distorting support to agriculture, thereby reducing some of the imbalance which exists between DCs, SDEs and SIDSs on the one hand, and developed countries on the other. However, in developing modalities for AMS cuts and redefining the “green box”, consideration will have to be given to providing flexibility to preference-giving countries as a means of making preferential arrangements that benefit SIDSs more stable and predictable.

IV.4 Optimal modalities with respect to export competition

Barbados co-sponsored a negotiating proposal with other CARICOM countries on Domestic Support and Export Competition during the second phase of the current negotiations. This proposal addressed both export subsidies and other forms of export competition, namely export credits, export credit guarantees or insurance programmes, and food aid. In general, the proposal, which is consistent with those submitted by other members, calls for prohibition, elimination and significant reduction in export subsidies and the establishment of disciplines in relation to export credits, insurance and guarantees.

(a) *Export subsidies*

The elimination or significant reduction of export subsidies may offer significant benefits to some DCs, SDEs and SIDSs in the form of improved market opportunities and prices for commodities subject to such subsidies. However, it would appear that, in the short term, Barbados does not stand to benefit significantly from reform in this area. The main products that benefit from export subsidies are not produced domestically, but imported into Barbados. In addition, the products that Barbados has identified for export development do not benefit much from export subsidies, but more from domestic support and export credit, guarantee and insurance schemes. Nevertheless, Barbados supports the elimination of export subsidies where such subsidies adversely affect the food production systems of DCs, SDEs and SIDSs, and result in depressed domestic prices.

There are two considerations in relation to export subsidies that are of particular concern to Barbados and other DCs, SDEs and SIDSs, particularly those which are NFIDCs and or beneficiaries of preferential arrangements that are tied to export subsidy programmes. As a NFIDC with a growing food import bill and heavy dependence on food imports to meet domestic consumption, Barbados is fully aware of the possible negative effects resulting from the elimination of export subsidies on food prices and the food import bill. It has therefore been calling for the implementation of meaningful provisions to give effect to the Marrakesh Decision on the Impact of the Reform Process on Least Developed Countries (LDCs) and NFIDCs. Once again, this justifies the call for modalities to address the provision of technical and financial assistance for improving productivity and efficiency in domestic food production and marketing.

Barbados, as an exporter of sugar under preferential arrangements, is also concerned about the impact that elimination or substantial reduction of export subsidies will have on preferential arrangements. Thus the modalities in respect of export subsidies must be so structured that preference-giving countries which offer access to the smallest and most vulnerable economies such as SIDSs should be given flexibility to undertake reforms in a manner that does not undermine those preferential arrangements.

In terms of S&DT provisions, there is a need for the provisions of Article 9.4 to be extended indefinitely for SDEs and SIDSs, and expanded to cover all activities undertaken to promote and market the exports of these countries. Such expansion should include price-risk management schemes and export credit/insurance schemes. Barbados has already put in place an incentive relating to freight costs incurred to offset the high costs and limited availability of airfreight out of Barbados to North America and Europe, as well as an export credit facility in the form of an Export Development Fund. Additional incentives to stimulate exports could be developed within this context for non-traditional exports of fresh and processed agricultural products to diversify the production and export base and offset some of the foreign exchange losses resulting from the difficulties being experienced by the sugar industry.

(b) *Export credits, guarantees and insurance schemes*

There is a need for disciplines to be brought to these forms of export competition, which can include subsidy elements and also place exporters benefiting from such schemes in an advantageous position in the marketplace. Additional information on the use of these measures is needed so that their real impact can be assessed, and appropriate modalities developed in this regard. As an S&DT provision, Article 9.4 should be expanded to allow SIDSs like Barbados to use these measures while restricting their use by developed countries.

ANNEX

Table 1. Summary of annual rainfall (millimetres), 1991 - 2000											
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Average
January	270.6	729.7	846.3	908.1	590.9	541.8	611.0	629.6	729.1	1,299.9	715.7
February	299.2	1,075.9	455.7	506.2	445.0	276.6	336.9	90.1	349.7	826.3	466.2
March	500.5	224.6	852.2	251.2	956.5	495.4	354.3	262.9	1,119.6	578.6	559.6
April	1,584.0	452.1	330.2	134.8	899.6	1,282.9	123.2	530.5	750.6	595.1	668.3
May	223.3	1,829.3	1,221.4	315.8	206.1	928.3	188.7	964.5	164.6	505.5	654.8
June	502.7	2,321.0	986.8	497.4	1,370.4	1,206.2	1,136.4	1,629.4	877.7	557.1	1,108.5
July	1,092.3	1,299.1	1,561.6	891.9	1,743.8	2,442.2	1,524.7	1,053.6	2,280.6	832.1	1,472.2
August	1,045.0	2,451.9	1,007.4	1,802.3	4,047.7	1,218.2	1,867.0	1,678.3	1,929.1	1,399.0	1,844.6
September	1,629.1	2,103.2	2,357.1	3,966.3	1,843.0	2,584.2	1,753.9	2,769.7	1,960.7	1,987.4	2,295.5
October	1,246.3	501.6	2,055.0	2,407.1	2,303.8	2,821.9	1,179.7	3,052.0	2,373.2	1,762.3	1,970.3
November	5,644.1	2,578.4	1,455.0	1,284.8	813.0	780.1	1,177.8	985.5	1,878.7	3,447.8	2,004.5
December	223.3	1,085.7	393.2	1,205.7	759.1	1,076.6	479.0	3,123.3	2,257.6	1,421.0	1,202.5
Monthly average	1,188.4	1,387.7	1,126.8	1,181.0	1,331.6	1,304.5	894.4	1,397.5	1,389.3	1,267.7	1,246.9
Total annual	14,260.4	16,652.5	13,521.9	14,171.6	15,978.9	15,654.4	10,732.6	16,769.4	16,671.2	15,212.1	14,962.5
Annual mean per parish	1,296.4	1,513.9	1,229.3	1,288.3	1,452.6	1,423.1	975.7	1,524.5	1,515.6	1,382.9	1,360.2

Source: Barbados Meteorological Department

Table 2. Comparative analysis of prices for selected vegetables, root crops and fruit ⁽¹⁾

Tariff No.	Description	C.i.f. price (BDS\$ per pound)	Current duty (%)	Price per kg	Price with 20% margin ⁽²⁾	Price per kg of local product (BDS\$)	Diff. (per kg) ⁽⁴⁾
0702.00	Tomatoes, Fr., or Ch. ⁽³⁾	0.58	218	4.06	4.87	4.57	0.30
0703.101	Onions, Fr., or Ch.	0.40	236	2.96	3.55	2.11	1.44
0703.102	Shallots, Fr., or Ch.	3.20	120	15.48	18.58	10.93	7.65
0704.901	Cabbages, Fr., or Ch.	0.34	120	1.64	1.97	4.18	(2.21)
0704.101	Cauliflower, Fr., or Ch.	1.54	120	7.46	8.95	6.10	2.85
0705.1	Lettuce, Fr., or Ch.	0.80	120	3.88	4.66	1.00	3.66
0706.101	Carrots, Fr., or Ch.	0.48	120	2.32	2.78	5.09	(2.31)
0706.901	Beets, Fr., or Ch.	0.64	120	3.10	3.72	3.80	(0.08)
0707.001	Cucumber, Fr., or Ch.	0.86	120	4.16	4.99	1.92	3.07
0709.902	Okras, Fr., or Ch.	0.60	175	3.64	4.37	2.67	1.70
0709.601	Sweet Pepper	1.28	175	7.74	9.29	4.72	4.57
0714.2	Sweet Potatoes Fr., or Ch.	0.30	175	1.82	2.18	2.43	(0.25)
0807.10	Melons (including watermelon)	0.36	161	2.06	2.47	2.63	(0.16)

- Notes:**
- (1) All prices are quoted in Barbados dollars (BDS\$).
 - (2) A profit margin of 20% has been used as an informed estimate of the general mark up for agricultural products added by the local distributive sector. This allows a more equitable comparison of the final price of the imported product vis-à-vis the local product, which would also include a return on investment.
 - (3) Fr. or Ch. = Fresh or chilled
 - (4) Numbers in brackets indicate instances where average wholesale prices for local products exceed average wholesale prices for imported products, with a 20% profit margin.

Table 3. Comparative analysis of prices for selected livestock and dairy products⁽¹⁾

Commodity	Cost per lb	C.i.f. per lb.	Current duty		Duty paid per kg	W/Sale price, 20% margin included (BDS\$ per kg) ⁽²⁾	Price per kg of local product	Price Diff ⁽⁴⁾ (BDS\$ per kg)
			201%	40%				
Poultry:								
Boneless skinless breast	2.76	3.02	4.58		20.16	24.19	17.74	6.45
Tenderloins	3.06	3.30	4.97		21.87	26.24	17.74	8.50
Leg quarters, bulk	0.30	0.56	0.84		3.70	4.44	6.50	(2.06)
Leg quarters 4 x 10lb bags	0.38	0.62	0.93		4.10	4.92	6.50	(1.58)
Legs	0.48	0.72	1.08		4.76	5.71	6.50	(0.79)
Wings	1.14	1.40	2.11		9.28	11.14	4.28	6.86
Boneless skinless thighs	1.06	1.30	1.96		8.62	10.34	10.10	0.24
Breast quarters	1.24	1.48	2.23		9.82	11.78	7.09	4.69
Drum sticks	0.70	0.94	1.41		6.20	7.44	10.10	(2.66)
Thighs	0.38	0.62	0.93		4.10	4.92	5.50	(0.58)
Backs and necks	0.22	0.46		0.32	1.40	1.68	1.76	(0.08)
Livers	1.16	1.40		0.98	4.32	5.18	3.00	2.18
Gizzards	0.86	1.10		0.77	3.38	4.06	3.00	1.06
Whole chicken	1.18	1.42	2.14		9.42	11.30	6.02	5.28
Turkey wings ⁽⁴⁾	0.90	1.14		0.97	4.26	5.11	4.92	0.19
Fresh eggs ⁽⁴⁾	1.12	1.36	1.68		7.40	8.88	7.06	1.82
Pork and pork products:								
Fresh pork - carcass	1.26	1.50	2.26		9.94	11.93	8.47	3.46
Legs wings	0.90	1.14	1.72		7.56	9.07	9.00	0.07
Leg hams	3.02	3.26	4.91		21.60	25.92	21.08	4.84
Picnic hams	3.02	3.26	4.91		21.60	25.92	18.39	7.53
Bacon	2.08	2.32	3.49		15.36	18.43	24.75	(6.32)
Dairy:								
Pasteurized milk (litre) ⁽⁴⁾	1.58	2.08	2.57		5.14	6.17	3.02	3.15
Evaporated milk (litre) ⁽⁴⁾	3.18	3.68	4.54		9.08	10.90	4.42	6.48

- Notes:**
- (1) All prices are quoted in Barbados dollars (BDS\$).
 - (2) A profit margin of 20% has been used as an informed estimate of the general mark up for agricultural products added by the local distributive sector. This allows more equitable comparison of the final price of the imported product vis-à-vis the local product, which would also include a return on investment.
 - (3) Numbers in brackets indicate instances where average wholesale prices for local products exceed average wholesale prices for imported products
 - (4) Tariff rates currently applicable for the following products: eggs @147%, dairy @155% (quoted in litres), and turkey wings @70%

Table 4. Natural disasters affecting selected Caribbean countries, 1991 - 2000

Year	Disaster type	Total damage costs (US\$ '000)	Total no. of persons affected	Countries affected
1991	Flood	30 000	551 340	Jamaica
1992	Hurricane	250 000	1 700	Bahamas
1992	Flood	-	200	St. Vincent and the Grenadines
1993	Flood	11 000	4 372	Jamaica
1993	Tropical Storm	57	n.a.	Trinidad and Tobago
1993	Flood	70	10	Trinidad and Tobago
1994	Tropical Storm	101 968	750	St. Lucia, Jamaica
1995	Hurricane	200 928	73 503	Antigua and Barbuda, Dominica, St Kitts & Nevis, Barbados
1996	Flood	-	200	Trinidad and Tobago
1996	Tropical Storm	3 000	800	Jamaica
1996	Landslide	-	175	St. Lucia
1997	Volcano	-	200	Trinidad and Tobago
1998	Hurricane	-	12 025	St. Kitts & Nevis, Antigua and Barbuda
1999	Hurricane	-	9 197	Bahamas, Antigua and Barbuda, St. Kitts & Nevis, Grenada, Anguilla, St. Lucia, St. Vincent and the Grenadines
2000	Drought	6 000	n.a.	Jamaica
2000	Hurricane	-	n.a.	Antigua and Barbuda, Belize
2000	Flood	-	n.a.	Jamaica
2001	Hurricane	268 330	375	Dominica, Jamaica, Bahamas

Note: Lists those Caribbean countries affected which could be classified as SIDSs

Table 5. Key indices of the agricultural sector

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Contribution to GDP (Current prices, (BD\$\$ million)										
Sugar	54.6	51.1	46.8	49.6	50.6	64.1	69	56.5	56	63.2
Non-sugar	107.3	101.7	114.7	100	147.6	160.9	122	96.3	146.3	126.8
Total agriculture	161.9	152.8	161.5	149.6	198.2	225	191	152.8	202.3	190
Total GDP (BD\$\$ million)	2 892.5	2 708.7	2 791.2	2 920.7	3 147.5	3 377.4	3 610.4	3 903.7	4 137.9	4 309
Share of total GDP (%):										
Sugar (%)	1.9	1.9	1.7	1.7	1.6	1.9	1.9	1.4	1.4	1.5
Non-sugar (%)	3.7	3.8	4.1	3.4	4.7	4.8	3.4	2.5	3.5	2.9
Total agriculture (%)	5.6	5.6	5.8	5.1	6.3	6.7	5.3	3.9	4.9	4.4
Employment (%)										
Commercial Bank Credit (%)	2.5	2.6	2.4	2.5	2.4	2.6	2.1	2.0	1.9	2.5

Source: Barbados Economic and Social Report, 2001

Table 6.

Poultry				
Year	Production ('000 kg)	Annual growth rate (%)	Ratio of imports to domestic production (%)	Main source(s) of imports
1991	10 072.4	-	18.97	USA, UK, Canada
1992	8 825.3	-12.38	25.21	USA, UK, Canada
1993	8 739.6	-0.97	25.66	USA, UK, Canada
1994	10 151.9	16.16	13.13	USA, UK, Canada
1995	11 176.3	10.09	14.05	USA, UK, Canada
Average	9 793.1	3.22	19.41	
1996	12 622.4	12.94	7.15	USA, UK
1997	11 710.2	-7.23	12.35	USA, UK, Canada
1998	11 737.5	0.23	19.65	USA, UK, Canada
1999	12 296.9	4.77	17.18	UK, USA
2000	12 188.5	-0.88	22.35	USA, Canada
Average	12 111.1	1.97	15.74	
Pork				
Year	Production ('000 kg)	Annual Growth Rate (%)	Ratio of imports to domestic production (%)	Main source(s) of imports
1991	1 871.4	-	31.81	Canada, USA
1992	2 018.4	7.86	19.77	Canada, USA
1993	1 890.4	-6.34	31.30	Canada, USA
1994	1 688.1	-10.70	44.20	Canada, USA
1995	1 928.3	14.23	44.91	Canada, USA
Average	1 879.32	1.26	34.40	
1996	2 619.4	35.84	24.23	Canada, USA
1997	2 795.4	6.72	10.38	Canada, USA
1998	2 735.3	-2.15	38.88	Canada, USA
1999	2 356.4	-13.85	40.68	Canada, USA
2000	1 922	-18.43	54.69	Canada, USA
Average	2 485.7	1.62	33.77	

Table 6 (contd.)

Milk				
Year	Production (⁰ 000 kg)	Annual growth rate (%)	Ratio of imports to domestic production (%)	Main source(s) of imports
1991	14 252.9	-	0.01	USA
1992	8 656.3	-39.27	0.01	UK
1993	7 668.1	-11.42	0.06	UK, USA
1994	7 296.9	-4.84	0.08	UK, USA, Bulgaria
1995	7 869.4	7.85	0.16	UK
Average	9 148.7	-11.92	0.07	
1996	8 350.8	6.12	29.35	Trinidad & Tobago, UK
1997	8 531.4	2.16	2.94	Trinidad & Tobago, UK
1998	9 100.0	6.66	0.83	Trinidad & Tobago, UK
1999	7 630.5	-16.15	0.00	-
2000	7 929.7	3.92	0.00	-
Average	8 308.5	0.54	6.62	
<p>Import figures used above are for fresh milk only. However, Barbados has imported in excess of 1.2 million kgs of milk annually for the period 1991–2000, comprising, for e.g. milk powder, with and without added sugar and condensed milk. Significant importation of these products also occurred in 1999 and 2000.</p>				
Eggs				
Year	Production (⁰ 000 kg)	Annual growth rate (%)	Ratio of imports to domestic production (%)	Main source(s) of imports
1991	1 390.9	-	0.00	-
1992	1 267.9	-8.84	0.00	-
1993	1 247.8	-1.59	0.00	-
1994	1 322.3	5.97	2.77	Guyana
1995	1 065	-19.46	1.41	Guyana
Average	1 258.8	-5.98	0.84	
1996	1 275.9	19.80	0.10	Canada, USA
1997	792.1	-37.92	0.12	USA
1998	972.4	22.76	6.30	USA
1999	1 309.9	34.71	0.00	USA
2000	1 607.6	22.73	0.00	USA
Average	1 191.6	12.42	1.30	

Table 6 (contd.)

Mutton				
Year	Production ('000 kg)	Annual growth rate (%)	Ratio of imports to domestic production (%)	Main source(s) of imports
1991	37.6	-	12 072.2	Australia, New Zealand
1992	38.1	1.3	7 364.0	Australia, New Zealand, USA
1993	49.8	30.7	4 559.8	Australia, New Zealand, USA
1994	55.3	11.0	4 104.1	New Zealand, Australia
1995	66.6	20.4	3 001.1	New Zealand, Australia
Average	49.48	15.9	6 220.2	
1996	91.1	36.8	1 992.5	New Zealand, Australia, USA
1997	48.6	-46.7	4 700.1	New Zealand, Australia, USA
1998	51.1	5.1	4 253.1	New Zealand, Australia
1999	45.6	-10.8	4 355.1	New Zealand, Australia
2000	45.7	0.2	4 126.2	New Zealand, Australia, Canada
Average	56.42	-3.1	3 885.4	
Beef				
Year	Production ('000 kg)	Annual growth rate (%)	Ratio of imports to domestic production (%)	Main source(s) of imports
1991	904.8	-	139.26	Ireland, New Zealand, USA
1992	986.4	9.02	116.22	Ireland, New Zealand, USA
1993	861.8	-12.63	115.72	Ireland, New Zealand, USA
1994	866.4	0.53	142.79	UK, Ireland, USA, New Zealand
1995	861.8	-0.53	137.29	New Zealand, Ireland, UK, USA
Average	896.24	-0.90	130.26	
1996	867.7	0.68	124.83	N. Zealand, USA, Australia
1997	661.1	-23.81	256.52	Australia, New Zealand, USA, UK
1998	562.5	-14.91	364.07	Australia, New Zealand, USA
1999	590.2	4.92	278.41	New Zealand, USA, Australia
2000	751.7	27.36	192.01	N. Zealand, USA, Australia
Average	686.64	-1.15	243.17	

Table 7.

Sweet Peppers					
Year	Production		Annual Growth Rate (%)	Ratio of imports to domestic production	Main source(s) of imports
	Quantity ('000 kg)	Value (BDS\$ '000)			
1991	63.0	282.24	-	0.03	USA (100%)
1992	72.0	316.80	14.3	0.01	USA (100%)
1993	227.3	831.92	215.7	0.01	USA (100%)
1994	84.1	336.40	-63.0	0.05	USA (92%)
1995	213.3	1 175.28	153.6	0.15	USA (99%)
Average	131.9	588.5	80.2	0.05	
1996	770.5	3 582.83	261.2	0.08	USA (93.1%)
1997	279.1	1 540.63	-63.8	0.39	USA (97.1%)
1998	323.6	1 766.86	15.9	0.90	USA (97.7%)
1999	214.2	1 169.53	-33.8	1.43	USA (96.2%)
2000	254.1	1534.76	18.6	1.40	USA (98%)
Average	368.3	1 918.9	39.64	0.84	
Current bound/applied rate:			175%		
Bound rate in 2004:			160%		
Lettuce					
Year	Quantity '000 units	Annual Growth Rate (%)	Ratio of imports to domestic production	Main source(s) of imports	
1991	n.a.	-	n.a.	USA (99.97%)	
1992	n.a.	-	n.a.	USA (63.9%), Cuba (36.1%)	
1993	389.8	-	0.42	USA (100%)	
1994	712.1	82.68	0.31	USA (100%)	
1995	1,686.4	136.82	0.14	USA (99.98%)	
Average	929.4	109.75	0.29		
1996	1,552.0	-7.97	0.18	USA (99.99%)	
1997	444.3	-71.37	0.91	USA (99.6%)	
1998	209.1	-52.94	3.57	USA (99.9%)	
1999	551.0	163.51	0.90	USA (99.2%)	
2000	832.2	51.03	0.66	USA (99.4%)	
Average	717.7	16.45	1.24		
Current bound/applied rate:			120%		
Bound rate in 2004:			109%		

Table 7 (contd.)

Okras					
Year	Production		Annual growth rate (%)	Ratio of imports to domestic production	Main source(s) of imports
	Quantity ('000 kg)	Value (BD\$'000)			
1991	384.4	961.00	-	0.00	no imports
1992	270.0	650.70	-29.8	0.00	USA (100%)
1993	851.1	2,085.20	215.2	0.00	no imports
1994	300.4	781.04	-64.7	0.03	Canada (100%)
1995	496.5	1,300.83	65.3	0.00	USA (100%)
Average	460.5	1,155.8	47	0.01	
1996	1 106.5	3,098.20	122.9	0.00	Guy. (100%)
1997	805.2	2,157.94	-27.2	0.00	USA (90.5%)
1998	320.5	1,015.99	-60.2	0.00	Dom. (100%)
1999	341.0	1,080.97	6.4	0.01	Guy. (87.9%), Do. (12.1%)
2000	566.8	1,830.76	66.2	0.00	no imports
Average	628.0	1,836.8	22	0.00	
Current bound/applied rate:			175%	Guy. = Guyana	
Bound rate in 2004:			160%	Dom. = Dominica	
Melons					
Year	Production		Annual growth rate (%)	Ratio of imports to domestic production	Main source(s) of imports
	Quantity ('000 kg)	Value (BD\$'000)			
1991	123.2	358.5	-	0.02	Ant. (99.8%), USA (0.2%)
1992	78.4	228.1	-36.4	0.00	no imports
1993	119.8	328.3	52.8	0.00	no imports
1994	104.9	279.0	-12.4	0.00	T&T (46%), St. Vincent (54%)
1995	380.9	1,017.0	263.1	0.00	USA (58.6%), Guy. (71.8%)
Average	161.4	442.2	66.78	0.01	
1996	566.8	1,445.3	48.8	0.11	USA (25.7%), Guy. (71.8%)
1997	222.6	589.9	-60.7	0.28	USA (55.9%), Guy. (30.7%)
1998	142.7	342.5	-35.9	0.51	USA (73.4%), Dom. (24.1%)
1999	184.2	442.1	29.1	0.72	USA (41.3%), Guy. (38.4%)
2000	217.4	667.4	18.0	1.44	USA (63.9%), T&T (28.2%)
Average	266.7	697.4	-0.14	0.61	
Current bound/applied rate:			161	Ant. = Antigua	
Bound rate in 2004:			147	Dom. = Dominica	
				Guy. = Guyana	
				T&T = Trinidad and Tobago	

Table 7 (contd.)

Carrots					
Year	Production		Annual growth rate (%)	Ratio of imports to domestic production	Main source(s) of imports
	Quantity ('000 kg)	Value (BDS\$ '000)			
1991	1 547.7	8 481.40	-	0.00	USA (100%)
1992	1 051.9	3 534.38	-32.0	0.00	no imports
1993	1 046.5	3 872.05	-0.5	0.00	Canada (100%)
1994	330.0	1 679.70	-68.5	0.00	USA (100%)
1995	1 172.1	6 317.62	255.2	0.04	USA (100%)
Average	1 029.6	4 777.00	38.54	0.01	
1996	1 719.1	8 217.30	46.7	0.02	USA (100%)
1997	781.7	4 432.24	-54.5	0.20	USA (98.7%)
1998	553.4	3 276.13	-29.2	0.54	USA (99.3%)
1999	1 734.6	10 268.83	213.4	0.08	USA (96.5%)
2000	1 025.3	4 654.86	-40.9	0.29	USA (93.8%)
Average	1 162.8	6 169.90	27.10	0.23	
Current bound/applied rate:			120%		
Bound rate in 2004:			109%		
Cucumbers					
Year	Production		Annual growth rate (%)	Ratio of imports to domestic production	Main source(s) of imports
	Quantity ('000 kg)	Value (BDS\$ '000)			
1991	503.7	1 027.55		0.00	Guy.(100%)
1992	489.1	738.54	-2.9	0.00	no imports
1993	675.3	1 215.54	38.1	0.00	no imports
1994	367.1	686.48	-45.6	0.00	no imports
1995	1 344.3	2 675.16	266.2	0.00	USA (100%)
Average	675.9	1 268.7	63.93	0.00	
1996	1,174.3	2 266.40	-12.6	0.00	Guy. (59%), St. Lucia (34.2%)
1997	478.1	917.95	-59.3	0.00	Guy. (84.6%)
1998	565.8	1 216.47	18.3	0.00	USA (70.1%), Dom.(26.4%)
1999	991.3	2 131.30	75.2	0.01	Guy. (50%), USA(25.8%), T&T (18.6%)
2000	699.7	1 406.40	-29.4	0.02	USA (51.1%), T&T (38.1%)
Average	781.8	1 587.70	0.0	0.01	
Current bound/applied rate:			120%	Dom. = Dominica	
Bound rate in 2004:			109%	Guy. = Guyana	
				T&T = Trinidad & Tobago	

Table 7 (contd.)

Tomatoes					
Year	Production		Annual growth rate (%)	Ratio of imports to domestic production	Main source(s) of imports
	Quantity ('000 kg)	Value (BD\$'000)			
1991	427.8	1 082.33	-	0.01	USA (100%)
1992	440.2	1 593.52	2.90	0.00	USA (100%)
1993	483.0	1 733.97	9.72	0.00	USA (100%)
1994	565.2	2 181.67	17.02	0.03	USA (95.9%), T&T (4.1%)
1995	1 066.0	4 722.38	88.61	0.06	USA (100%)
Average	596.44	2 262.78	29.56	0.02	
1996	1 107.1	4 572.32	3.86	0.09	USA (97.5%)
1997	720.1	3 492.49	-34.96	0.26	USA (100%)
1998	418.8	2 311.78	-41.84	1.12	USA (98.9%)
1999	901.5	4 976.28	115.26	0.48	USA (84.2%), T&T (15%)
2000	653.5	2 659.75	-27.51	0.46	USA (89.2%), T&T (10.2%)
Average	760.2	3 602.52	2.96	0.48	
Current bound/applied rate:			218%		
Bound rate in 2004:			199%		
Cabbages					
Year	Production		Annual growth rate (%)	Ratio of imports to domestic production	Main source(s) of imports
	Quantity ('000 kg)	Value (BD\$'000)			
1991	495.6	2 235.16	-	0.00	no imports
1992	436.6	1 357.83	-11.9	0.00	no imports
1993	746.9	2 815.81	71.1	0.00	USA (100%)
1994	514.1	2 097.53	-31.2	0.03	USA (78%), T&T (22%)
1995	1 632.6	7 248.74	217.6	0.02	USA (98.8%), Guyana (1.2%)
Average	765.2	3 151.00	61.39	0.01	
1996	1 341.2	5 391.62	-17.8	0.03	USA (86.3%)
1997	637.6	3 188.00	-52.5	0.13	USA (95.3%)
1998	442.0	2 316.08	-30.7	0.44	USA (99.5%)
1999	1 015.2	5 319.65	129.7	0.17	USA (28.1%), T&T(24.9%), Dom.(12.6%)
2000	780.8	3 185.66	-23.1	0.42	USA (82.7%), T&T (8.5%)
Average	843.4	3 880.2	1.12	0.24	
Current bound/applied rate:			120%	Dom. = Dominica	
Bound rate in 2004:			109%	T&T = Trinidad & Tobago	

Table 8.

Sweet potatoes					
Year	Production		Annual growth rate (%)	Ratio of imports to domestic production	Main source(s) of imports
	Quantity ('000 kg)	Value (BD\$\$'000)			
1991	1 932.0	5 486.9	-	0.01	St Vincent (99.98%)
1992	2 419.2	2 104.7	25.22	0.00	no imports
1993	2 251.2	5 267.8	-6.94	0.00	no imports
1994	1 253.6	3 284.4	-44.31	0.00	Canada (100%)
1995	5 166.5	11 108.0	312.13	0.00	no imports
Average	2 604.50	5 450.4	71.52	0.00	
1996	5 060.2	12 701.1	-2.06	0.04	St. Vincent (99.4%)
1997	2 553.2	8 195.8	-49.54	0.00	no imports
1998	740.6	2 621.7	-70.99	0.00	St. Vincent (100%)
1999	2 709.8	9 592.7	265.89	0.01	St. Vincent (98.4%)
2000	735.0	1 918.4	-72.88	0.00	St. Vincent (100%)
Average	2 359.8	7 005.9	14.08	0.01	
Current rate of duty:			175%		
Final bound rate (2004):			160%		
Onions					
	Year	Production Quantity ('000 kg)	Annual growth rate (%)	Ratio of imports to domestic production	Main source(s) of imports
	1991	726.4	-	1.95	Netherlands (84%), Can. (9.3%)
	1992	744.6	2.51	1.55	Netherlands (85.1%), UK (9.1%)
	1993	555.9	-25.34	3.30	Netherlands (85.3%), UK (8.5%)
	1994	726.4	30.67	1.96	Netherlands (78.6%), USA (19.6%)
	1995	1 180.4	62.50	1.02	Netherlands (80%), USA (8.1%)
	Average	786.7	17.58	1.96	
	1996	912.5	-22.70	1.08	Netherlands (80.9%), Can. (12.8%)
	1997	480.0	-47.40	2.98	Netherlands (58%), UK (34.5%)
	1998	421.3	-12.23	2.66	Netherlands (19.5%), UK (70.1%)
	1999	687.1	63.09	1.56	N. Lands(59.4%), UK (36.5%)
	2000	141.8	-79.36	10.51	Netherlands (82.2%), UK (9.2%)
	Average	528.5	-19.72	3.8	
					Can. = Canada
Current rate of duty:			236%		
Final bound rate (2004):			216%		

Table 8 (contd.)

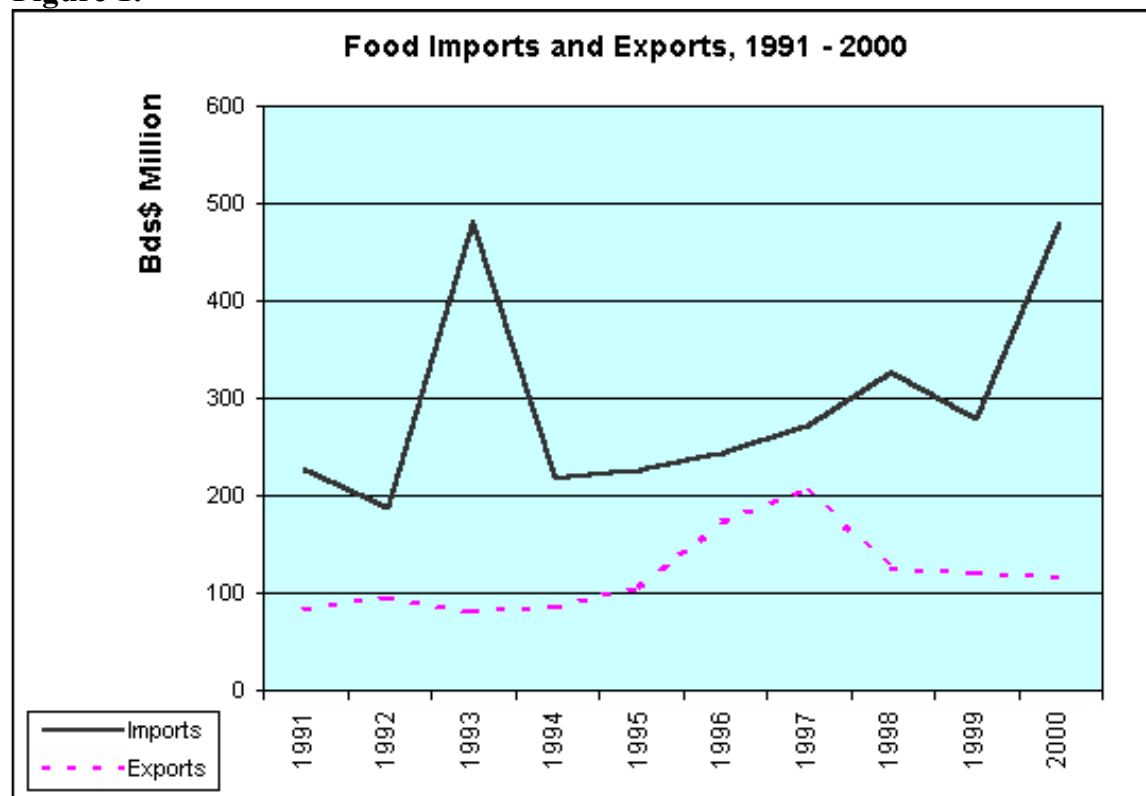
Yams					
Year	Production		Annual growth rate (%)	Ratio of imports to domestic production	Main source(s) of imports
	Quantity ('000 kg)	Value (BD\$'000)			
1991	1 989	4 873.05	-	0.02	St. Vincent (100%)
1992	1 566	4 212.54	-21.27	0.02	St. Vincent (100%)
1993	1 926.9	4 643.83	23.05	0.02	St. Vincent (100%)
1994	1 173.3	3 003.65	-39.11	0.01	St. Vincent (99.85%)
1995	2 567.7	6 753.05	118.84	0.01	St. Vincent (100%)
Average	1 844.6	4 697.22	20.38	0.02	
1996	1 442.7	3 808.73	-43.81	0.00	Guy. (97.19%)
1997	1 319.4	3 562.38	-8.55	0.00	Dom. (100%)
1998	653.4	1 783.78	-50.48	0.03	Dom. (63.3%), St. Vincent (36.7%)
1999	2 205.0		237.47	0.01	Dom. (92.5%)
2000	306.0	902.70	-86.12	0.07	St. Vincent (75.2%), Dom. (14.5%)
Average	1 185.3	2 514.40	9.70	0.02	
Current rate of duty: 40%					Dom.= Dominica Guy. = Guyana
Cassava					
Year	Production Quantity ('000 kg)	Annual growth rate (%)	Ratio of imports to domestic production	Main source(s) of imports	
1991	1 242.2	-	0.00	St. Vincent (100%)	
1992	2430	95.62	0.00	no imports	
1993	693	-71.48	0.00	no imports	
1994	410.5	-40.76	0.00	no imports	
1995	817.2	99.07	0.00	no imports	
Average	1 118.58	20.61	0.00		
1996	496.8	-39.21	0.00	T&T (84.7%)	
1997	324.9	-34.60	0.00	T&T (65.5%), USA (34.5%)	
1998	194.4	-40.17	0.02	T&T (78.9%), USA (21.1%)	
1999	329.4	69.44	0.01	T&T (67.4%)	
2000	489.5	48.60	0.01	T&T (90.8%)	
Average	367	0.81	0.01		
Current rate of duty: 40%					T&T = Trinidad & Tobago

Table 9.

Food imports and exports, 1991 - 2000						
Year	Food imports (BDS\$ million)	Food imports as % of total imports	Food exports (BDS\$ million)	Food exports as % of total exports	Trade balance/ imbalance (BDS\$ million)	
1991	226.1	16.2	82.0	19.8	(144.1)	
1992	185.9	17.7	96.4	25.3	(89.5)	
1993	479.8	41.6	80.0	21.3	(399.8)	
1994	216.8	17.6	84.9	23.2	(131.9)	
1995	226.2	15.7	107.1	23.1	(119.1)	
1996	243.1	14.6	174.0	31.0	(69.1)	
1997	271.0	13.6	207.2	36.6	(63.8)	
1998	325.1	15.9	123.7	24.4	(201.4)	
1999	278.1	12.5	118.5	22.5	(159.6)	
2000	478.6	20.7	114.4	21.0	(364.2)	

(1) Food trade is classified in accordance with the accepted CARICOM definition, which includes all trade under SITC heading 00 to 09 inclusive in data pertaining to food estimates.

Figure 1.



Source: Barbados Economic and Social Report

Table 10b. Exports of selected agricultural commodities (BD\$), 1991 - 2000												
Commodity	1991	1992	1993	1994	1995	1991 - 1995 Average	1996	1997	1998	1999	2000	1996 - 2000 Average
Hot peppers	182,580	517,513	651,516	653,467	521,128	212,838	419,869	352,580	224,505	54,691	12,547	212,838
Eggplants	-	19,782	1,029	4,778	1,234	4,477	143	2,500	18,875	10	856	4,477
Melons			863	20,669	3,593	3,716	9,581	-	9,000	-	-	3,716
Okra	10,436	69,188	130,093	135,650	136,382	97,920	218,742	182,518	79,035	3,455	1,710	97,092
Pumpkins	-	600	1,687	10,650	975	1,390	-	3,480	3,300	60	110	1,390
Sweet peppers	4,390	5,896	22,452	1,582	4,272	1,632	684	3,401	3,625	240	212	1,632
Sweet potatoes	426,799	1,024,882	381,113	444,826	1,164,464	414,132	936,339	577,173	419,494	114,905	22,749	414,132
Yams	126,820	66,589	29,879	84,746	107,499	66,473	176,966	35,196	70,356	32,498	17,348	66,473
Avocados	4,646	97,164	160,453	96,285	47,345	58,928	75,417	82,346	124,915	10,350	1,610	58,928
Breadfruit	231,785	327,551	444,497	432,639	711,887	386,924	766,932	598,051	335,767	142,050	91,819	386,924
Coconuts (not shelled)	1,001	10,091	20,785	17,152	29,567	9,959	16,431	9,734	5,928	17,700	-	9,959
Golden Apples	25,893	84,575	67,747	21,548	28,399	29,920	30,731	25,564	84,923	5,350	3,030	29,920
Mangoes	12,045	12,279	21,741	90,077	2,696	15,153	51,281	20,962	-	3,520	-	15,153
Paw Paw	65	539	563	82,821	34,818	9,998	26,700	22,290	1,000	-	-	9,998
Sour sops	2,604	17,809	29,191	30,887	77,760	16,407	34,916	24,338	22,544	235	-	16,407
Cut Flowers & Foliage	242,805	301,885	278,247	186,770	172,786	129,268	206,662	136,437	117,807	92,650	92,782	129,268
						1 458 305						1 458 305

Year	Exports		Average annual growth (%)	% share in total agri. production	% share in agri. exports **	% share in total exports	Major destination(s)	Unit export price (US\$ per tonne)	World price (US\$ per tonne)
	Qty. (tonnes)	Value (US\$)							
1991	65.7	31.1	-	45.1%	62.6%	15.0%	Exported to the United Kingdom under preferential market access - ACP/EU Sugar Protocol	591	198
1992	54	33.4	7.2%	41.2%	56.6%	17.5%		638	200
1993	48.5	28.4	-14.8%	38.6%	51.0%	15.2%		625	205
1994	51.9	29.8	4.8%	41.8%	54.3%	16.2%		591	238
1995	38.5	26.3	-11.8%	31.0%	42.1%	11.3%		681	242
1996	59.1	36.6	39.2%	40.6%	36.5%	13.0%		656	248
1997	64.6	36.5	-0.1%	44.7%	39.1%	12.9%		624	279
1998	48	28.3	-22.5%	38.2%	37.8%	11.2%		606	188
1999	53.2	28.6	1.1%	38.8%	39.9%	10.8%		566	138
2000	58.4	27.1	-5.4%	40.7%	39.2%	9.9%		496	188(P)

** - For present purposes, agricultural exports have been classified as exports including sugar, molasses, rum, lard and margarine and other food and beverages, as identified in the Barbados Economic and Social Report, 2001

Table 12.

Sweet potatoes							
Year	Export		Average annual growth (%)	% share in agri. Exports	% share in total exports	Major destination(s)	Unit export price (US\$ per kg)
	Qty (kg)	Value (US\$)					
1991	235 117	213 400	-	0.43	0.10	Canada (50.2%), UK (49.7%)	0.91
1992	605 465	512 441	140.13	0.87	0.27	UK (53.2%), Canada (44.4%)	0.85
1993	251 759	190 557	-62.81	0.34	0.10	UK (60.6%), Canada (35.9%)	0.76
1994	300 214	222 413	16.72	0.41	0.12	UK (62.9%), Canada (19.2%)	0.74
1995	780 276	582 232	161.78	0.93	0.25	Canada (49%), UK (45%)	0.75
1996	518 934	468 170	-19.59	0.47	0.17	UK (52.4%), Canada (43.2%)	0.90
1997	401 436	288 587	-38.36	0.31	0.10	UK (57.1%), Canada (41.5%)	0.72
1998	279 122	209 747	-27.32	0.28	0.08	Canada (65.9%), UK (30.3%)	0.75
1999	66 703	57 453	-72.61	0.08	0.02	Canada (76.9%), UK (20.6%)	0.86
2000	13 896	11 375	-80.20	0.02	0.00	Canada (70.1%), N.Antilles (22.4%)	0.82
Breadfruit							
Year	Export		Average annual growth (%)	% share in agri. Exports	% share in total exports	Major destination(s)	Unit export price (US\$ per kg)
	Qty. (kgs)	Value (US\$)					
1991	135 649	115 893	-	0.23	0.06	UK(76.4%), Can.(21.4%), US(10.7%)	0.85
1992	177 472	163 776	41.32	0.28	0.09	UK (69.3%), Canada (29.3%)	0.92
1993	279 117	222 249	35.70	0.40	0.12	UK (72.7%), Canada (25.3%)	0.80
1994	301 807	216 320	-2.67	0.40	0.12	UK (74%), Canada (24.8%)	0.72
1995	520 133	355 944	64.55	0.57	0.15	UK (59.3%), Canada (39.9%)	0.68
1996	587 294	383 466	7.73	0.38	0.14	UK (68.5%), Canada (31.2%)	0.65
1997	439 852	299 026	-22.02	0.32	0.11	UK (62%), Canada (33.5%)	0.68
1998	284 816	167 884	-43.86	0.22	0.07	Canada (53.8%), UK (45.2%)	0.59
1999	144 078	71 025	-57.69	0.10	0.03	UK (68.3%), Canada (31.7%)	0.49
2000	73 331	45 910	-35.36	0.07	0.02	UK (55.6%), Canada (44.4%)	0.63

Table 12 (contd.)

Hot Peppers							
Year	Export		Average annual growth	% share in agri. Exports	% share in total exports	Major destination(s)	Unit export price (US\$ / kg)
	Qty (kg)	Value (US\$)					
1991	74 663	91 290	-	0.18	0.04	UK (54.3%), Canada (38.3%)	1.22
1992	185 536	258 757	183.44	0.44	0.14	UK (59.8%), Canada (29.9%)	1.39
1993	360 737	325 758	25.89	0.59	0.17	UK (65.3%), Canada (20.9%), Netherlands (10.9%)	0.90
1994	714 916	326 734	0.30	0.60	0.18	UK (52.7%), Netherlands (28.1%), Canada (16.3%)	0.46
1995	284 886	260 564	-20.25	0.16	0.11	UK (51.1%), Canada (40.5%)	0.91
1996	215 670	209 935	-19.43	0.21	0.07	UK (53.6%), Canada (45.7%)	0.97
1997	178 948	176 290	-16.03	0.19	0.06	UK (56.9%), Canada (42.3%)	0.99
1998	148 887	112 253	-36.33	0.15	0.04	UK (34.7%), Canada (33.1%), USA (28.5%)	0.75
1999	51 400	27 346	-75.64	0.04	0.01	USA (75.9%), Canada (24.1%)	0.53
2000	5 574	6 274	-77.06	0.01	0.00	Canada (100%)	1.13
Cut flowers and foliage							
Year	Export		Average annual growth (%)	% share in agri. Exports	% share in total exports	Major destination(s)	Unit export price (US\$/kg)
	Qty (kg)	Value (US\$)					
1991	41 234	121 403	-	0.24	0.06	Canada (37.1%), Germany (28.1%), Finland (15.2%)	2.94
1992	40 174	150 943	24.33	0.26	0.08	Germany (36.1%), Canada (31.1%), Finland (23.9%)	3.76
1993	41 823	139 124	-7.83	0.25	0.07	Germany (30.5%), Finland (30.4%), Canada (29.4%)	3.33
1994	29 999	93 385	-32.88	0.17	0.05	Canada (33%), Finland (38.6%)	3.11
1995	29 115	86 393	-7.49	0.14	0.04	Canada (46.5%), Finland (31.4%)	2.97
1996	38 927	103 331	19.61	0.10	0.04	Canada (45.2%), Finland (33.7%)	2.65
1997	36 105	68 219	-33.98	0.07	0.02	Canada (51%), Finland (28.6%)	1.89
1998	28 937	58 904	-13.65	0.08	0.02	Canada (69.7%), Finland (28.6%)	2.04
1999	21 681	46 325	-21.35	0.06	0.02	Canada (91.2%), Germany (4.5%)	2.14
2000	21 056	46 391	0.14	0.07	0.02	Canada (98.3%), Finland (1.7%)	2.20