BARBADOS

Herbs, Spice, and Condiments Industry

Development Plan

(WORKING DOCUMENT)

(2015-2022)

Prepared by: Ministry of Agriculture, Food, Fisheries, and Water Resource Management

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Table of Contents

List of Tables and Figures

List of Acronyms

BADMC	Barbados Agricultural Development and Marketing Corporation
BAS	Barbados Agricultural Society
CARICOM	Caribbean Community
CARDI	Caribbean Agriculture Research and Development Institute
EU	European Union
FAO	Food and Agriculture Organization
GOB	Government of Barbados
IICA	International Institute for Co-operation on Agriculture
ITC	International Trade Centre
MAFFW	Ministry of Agriculture, Food, Fisheries and Water Resource Management
NAHFCP	National Agricultural Health and Food Control Programme
PAC	Programme for Agribusiness and Commercialization/IICA
UNCTAD	United Nations Conference on Trade and Development
WTO	World Trade Organization
SWOT	Strengths, Weakness ,Opportunities , and Threats Analysis

1.0 EXECUTIVE SUMMARY

1.1 Documented herein is a **Development Plan for the Herbs, Spice and Condiments Industry in Barbados**. The Plan covers a period of seven years (i.e. 2015-2022) and has been prepared by the Ministry of Agriculture, Food, Fisheries and Water Resource Management (MAFFW) with the assistance of the Inter-American Institute for Cooperation on Agriculture (IICA), and input from key stakeholders within the industry.

1.2 Based on a Situational Assessment undertaken by the MAFFW, it has been determined that in recent years, worldwide, the production of herbs and spices has been increasing. So has production in the Caribbean region. At the same time imports, from Europe, Asia and America, into the Caribbean region, have also been increasing.

1.3 It has also been determined (based on the aforementioned assessment) that in the case of Barbados, there is relatively limited information available with regards to the level of domestic production of individual commodities. This lack of information may be one of the major factors inhibiting business transactions between local suppliers and

buyers. Production data is however available for some commodities, namely: onion and hot pepper - the former for which information indicates that local production has been increasing, but on the decline for the latter. With regards to imports into Barbados, there are increasing levels reported for onions, ginger and other spices originating from The Netherlands, St. Vincent and the Grenadines, and the United States of America. Prices of local-origin fresh herbs, spice, and condiments have been moving steadily upward with relatively huge margins being enjoyed by local producers and traders.

1.4 A SWOT analysis of the strengths, weaknesses, and threats facing the Herbs, Spices and Condiments industry in Barbados, points to the presence of several constraints, inefficiencies, and risk factors, as well as opportunities particularly in the areas of primary production and processing. There is also the absence of high quality differentiated local value-added products. These constraints, inefficiencies, and risk factors are impacting on the competitiveness of the local industry vis-a- vis supplies from third country sources.

1.5 Suffice to say, there are noted initiatives by both the public and private sector that are in support of the industry's development. Key stakeholders have articulated their expectations of outcomes from future industry development initiatives. Access to real-time decision facilitating (production and market condition) information; reduction in on-farm and post-harvest losses; yield and productivity improvements; and product diversification to increase sales, purchases and revenues, are noteworthy expectations of industry stakeholders.

1.6 It is against the backdrop of the aforementioned Situational and SWOT Analyses that a Development Plan has been prepared to meet the expectations and outcomes desired by the key stakeholders as well as provide the overarching planning framework to guide the short, medium and long term actions of stakeholders and therein increasing local production, diversify the current product offering and enhancing access to the local and international markets by enterprises operating in the Herbs, Spice and Condiments industry. The Plan articulates the joint vision, guiding principles and goals; an institutional framework for improved coordination between the private and public sector; and an Action Plan to remove identified weaknesses, and threats faced by operators of enterprises and stakeholders within the industry.

2.0 BACKGROUND

-IICA Hemispheric project

2.1 In 2012, The Inter-American Institute for Cooperation on Agriculture (IICA), through its Programme for Agribusiness and Commercialization (PAC) and its Office in Barbados, entered into agreement with the Ministry of Agriculture, Food, Fisheries and Water Resource Management (MAFFW) in Barbados to collaborate with regards to the implementation of the IICA Hemispheric project "*Improving Agribusiness Competitiveness and Market Transparency in The CARICOM Region*".[1] This project is aimed at increasing the competitiveness of the agricultural sector in the CARICOM region, by improving the performance of agri-food chains and the transparency of national and regional agricultural markets.

-Project objectives

2.2 Specifically, the project seeks to strengthen the Institutional and Policy Framework needed to promote the competitiveness of selected agri-food chains in the region, (thereby upgrading them into real value chains), as well as improve the support services of Agricultural Market Information Systems (AMIS) in the Region. Ministries of Agriculture in five other Caribbean countries also agreed to participate in the project with each country selecting a specific chain for development.[2] In the case of Barbados, a group of food chains was selected namely Herbs, Spice and Condiments.

-Technical Instrument

2.3 The main instrument promoted under the project to facilitate the strengthening of the Institutional Framework is that of **Chain Dialogue and Action Platforms**[3]**.** This instrument is specifically designed to bringing private and public sector stakeholders who are directly and indirectly involved in a specific agri-food chain, into a common forum for the purpose of jointly planning and execute short to medium-term actions that would, impact positively on the competitiveness of that particular chain. With technical guidance provided by IICA/PAC professionals, the MAFFW and in turn both public and private industry stakeholders in Barbados were sensitized about the framework and its utility, subsequently agreed to participate in the process of establishing the Chain Dialogue and Action Platform inclusive of the preparation of an **Industry Development Plan.**

- Development and Action Plan

2.4 The overall goal of the Development Plan is to map a pathway towards real growth, competitiveness and sustainability of the Herbs, Spice and Condiments industry in Barbados. Stated objectives and actions have been determined through from a series of 'Ad Hock Platform Committee' discussions, interviews and extensive stakeholder feedback. The Plan is thus reflective of a collaborative, consensus-driven, private-public sector approach to agricultural development, and specifically outlines the joint actions that will be taken to ensure a structured and coordinated increase in the production and marketing of Herbs, Spices and Condiments thereby competitively

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[1] Letter of Agreement signed between IICA and Ministry of Agriculture, Barbados in 2012

[2] Jamaica, Barbados, Trinidad and Tobago, Dominican Republic, St. Lucia and St. Vincent and the Grenadines

[3] IICA Agribusiness and Commercialization Program: Instruments of cooperation for agribusiness and commercialization: Instrument # 202

satisfying domestic demand, realizing export opportunities, and enhancing local enterprise development.

2.5 The Development Plan specifically focuses on select herbs, spices and condiments namely, onions, hot peppers, thyme, marjoram, parsley, ginger, chives, celery, coriander and basil. It includes a review of the international, the regional and the local situations as they relates to production, trade, and price trends for herbs, spices and condiments; a review of past and present initiatives which support the advancement of the sector; and details strategic goals and an **Action Plan** for the further advancement of the industry. Further detailing of the Action Plan will be necessary[4]. However, critical at this juncture is the establishment of a formal and modern Institutional Framework (i.e. a Chain Committee) to drive the execution of the actions agreed to by industry stakeholders.

3.0 SITUATIONAL ANALYSIS

► ***World Production -increasing-Asia, the leading producer***

3.1 According to the Food and Agriculture Organization of the United Nations(FAO), during the three year period 2007 – 2011, worldwide production of herbs and spices increased by 15.3 per cent. In 2011 total world production stood at 155.14 million tonnes.

3.2 The majority of the world's production of herbs and spices takes place in Asia, which during the three-year period accounted for an average of 70.6 per cent of world production. Asia is followed by the Americas and Europe which averaged 10 per cent and 9.8 per cent respectively. Herbs and spice production in Africa has fluctuated throughout the period, averaging 13 million tonnes, or 9.2 per cent of world production.

Table 1: World Production of Herbs and Spices (Tonnes)

Item	2007	2008	2009	2010	2011
Anise, badian, fennel, corian.	692,583	696,967	510,896	778,167	828,708
Chillies and peppers, dry	3,039,697	3,123,263	3,026,641	3,051,053	3,351,121
Chillies and peppers, green	27,487,732	28,145,372	28,954,226	29,404,232	29,939,029
Cinnamon (canella)	190,260	193,167	200,339	187,832	197,468
Cloves	109,434	96,182	107,808	124,250	97,890
Garlic	20,085,065	22,790,460	22,009,333	22,592,581	23,721,446
Ginger	1,580,261	1,596,561	1,656,696	1,712,210	2,029,680
Leeks, other alliaceous veg	2,023,081	2,093,696	2,123,561	2,097,946	2,098,996
Nutmeg, mace and cardamoms	80,753	89,072	68,030	68,115	76,734
Onions (inc. shallots), green	4,039,854	4,179,476	4,763,679	4,707,329	4,867,053
Onions, dry	73,083,687	74,427,713	73,414,759	78,903,388	85,375,125
Pepper (Piper spp.)	461,825	414,533	425,541	410,914	398,515
Peppermint	73,865	72,335	59,909	81,241	79,966

[4] E.g. indicative budgeting and monetizing and prioritizing of actions etc, start and duration of key actions/task, and well as implementation modalities inclusive of indicators of achievement (Management and Technical).

Spices, nes	1,553,004	1,540,935	1,547,936	2,002,531	2,072,422
Vanilla	8,558	8,899	8,215	6,943	7,508
Total production	**134,509,659**	**139,468,631**	**138,877,569**	**146,128,732**	**155,141,661**

Source: FAOSTAT

3.3 Of the commodities of interest namely "Chillies and peppers, dry", "Chillies and peppers, green" "Ginger" , "Spices," and both categories of onions Asia was the major producer. The Americas is also a major producer of "Onions, dry" and "Chillies and peppers, green, however that region is reported to make relatively limited contribution to world production of ginger (i.e. 0.24 per cent of total ginger production).

► ***World Imports and Exports -increasing***

3.4 Available data indicates that during the three years leading up to 2010, total quantity of world imports of herbs and spices increased significantly - by 14.8 per cent, with Europe and Asia accounted for the majority of these imports.

Table 2: World Imports of Herbs and Spices by Region

Region	Year							
	2007		2008		2009		2010	
	Import value (US$'000)	Import Quantity (Tonnes)	Import value (US$'000)	Import Quantity (Tonnes)	Import value (US$'000)	Import Quantity (Tonnes)	Import value (US$'000)	Import Quantity (Tonnes)
Africa	212,246	435,067	249,086	480,940	304,761	594,211	330,759	585,264
Americas	2,751,307	2,424,909	2,909,427	2,550,295	2,671,593	2,537,843	3,576,160	2,833,393
Asia	2,561,998	4,468,707	2,818,336	5,240,494	3,223,593	5,538,810	4,373,672	5,351,654
Europe	5,619,390	4,294,496	5,706,108	4,238,445	5,064,427	4,199,824	6,295,995	4,577,217
Oceania	79,610	50,871	76,006	54,127	78,693	53,076	109,581	57,331
Total	**11,224,551**	**11,674,050**	**11,758,963**	**12,564,301**	**11,343,067**	**12,923,764**	**14,686,167**	**13,404,859**

Source : FAOSTAT

3.5 Over the three-year period 2007-2010, there was a 37.6 per cent increase in the value of exports, with Europe accounting for 35.03 per cent of exports, Asia 40.4 per cent and the Americas, 20.2 per cent.

Table 3: World Exports of Herbs and Spices by Region

Region	Year							
	2007		2008		2009		2010	
	Export value (US$'000)	Export Quantity (Tonnes)	Export value (US$'000)	Export Quantity (Tonnes)	Export value (US$'000)	Export Quantity (Tonnes)	Export value (US$'000)	Export Quantity (Tonnes)
Africa	310,326	496,489	334,980	370,732	488,033	496,820	488,776	738,662
Americas	2,296,917	2,247,109	2,520,296	2,251,610	2,365,604	2,162,662	2,832,485	2,472,701

Asia	4,212,004	6,050,331	4,281,201	6,488,975	4,651,324	6,405,837	6,901,648	6,434,639
Europe	4,096,045	3,055,107	4,431,723	3,364,864	3,996,374	3,806,555	4,856,737	3,948,376
Oceania	157,195	250,414	123,262	219,690	112,017	190,434	157,285	244,539
Total	**11,072,487**	**12,099,450**	**11,691,462**	**12,695,871**	**11,613,352**	**13,062,308**	**15,236,931**	**13,838,917**

Source : FAOSTAT

► ***Caribbean/CARICOM Production - increasing***

3.6 During the period 2007 to 2011, the production of herbs and spices in the Caribbean region is estimated to have increased by 24 per cent. At a total of 411,538 tonnes in 2011, this level of output was equivalent to 0.27 per cent of estimated world production. The highest levels of production were recorded in the categories of "Chillies and peppers, green" and "Onions, dry", which on average accounted for estimated 29.6 per cent and 51.7 per cent respectively, of the overall production of herbs and spices in the Caribbean.

Table 4: Total production of Herbs and Spice in the Caribbean (Tonnes)

Item	2007	2008	2009	2010	2011
Anise, badian, fennel, corian.	NA	NA	NA	NA	NA
Chillies and peppers, dry	7,011	5,674	10,952	11,566	13,710
Chillies and peppers, green	100,014	111,428	112,468	97,994	114,124
Cinnamon (canella)	104	88	138	130	149
Cloves	15	13	31	27	36
Garlic	39,022	38,110	42,180	36,488	29,662
Ginger	1,211	1,221	1,859	1,306	1,419
Leeks, other alliaceous veg	NA	NA	NA	NA	NA
Nutmeg, mace and cardamoms	737	714	876	960	1,124
Onions (inc. shallots), green	14,690	13,809	13,797	15,170	18,848
Onions, dry	164,624	187,313	187,178	167,622	230,169
Spices, nes	4,390	3,830	3,176	2,710	2,297
Total Production	**331,818**	**362,200**	**372,655**	**333,973**	**411,538**

Source : FAOSTAT

► ***CARICOM Trade: net importer of herbs and spices***

3.7 CARICOM countries are reported to have imported US$46.38 million worth of herbs and spices in 2008, increasing to US$ 75.73 million in 2010, with an average value of US$ 60.32 million per annum. When compared to the billion dollar global import trade, this is a relatively insignificant value. Notwithstanding this observation, the categories of "Onions, garlic and leeks, fresh or chilled" remained the most valued imports into the CARICOM region, accounting for over 67.5 per cent of the total value of imported herbs and spice.

3.8 According to the International Trade Centre (ITC), in the four years between 2008 and 2012, the Caribbean Community (CARICOM) exported herbs and spices averaging US$16 million per annum. The Caribbean region is thus a net importer of herbs and spice products. "Nutmeg, Mace and

Cardamon" and "Pepper, Peppers and Capsium" were the most valuable exports worth respectively an average of US$6.76 million and US$3.28 million per annum. Although not the most valuable export commodities, noteworthy quantities of the grouping "onions, garlic and leeks, fresh or chilled" (1,509.4 tonnes); "Peppers of the genus Capsicum or of the genus Pimenta, fresh or chilled" (2,454.2 tonnes); and "Ginger "(851.6 tons) were exported within this time period. Thyme and bay leaves, cloves and onions accounted for less than 1% of the revenue generated for any year during the four -year period.

► ***Domestic Production (Barbados): limited information***

3.9 With regards to Barbados's Herbs, Spices and Condiments sub-sector, except for onions and hot peppers, there is relatively limited information available with regards to the level of domestic production of individual commodities. In the case of onion for which data is readily available, local production increased by approximately 65% during the 4-yr period 2008 to 2012, moving from a low of 333,200kgs to 550,000kgs in 2012, and peaking in 2009 at 625,960kgs. In contrast, during the said period, there was an estimated 48% steady decline in hot pepper production, moving from 124, and 400kgs in 2008 to 64,750kgs in2012.

► ***Trade (Barbados):increasing imports, limited exports***

3.10 During the four year period 2008-2012, it is reported that Barbados's imports of herbs and spices (i.e. onions, hot peppers, ginger, thyme, marjoram, parsley, chives and basil), averaged US$3.3 million per annum. Within this period, the volume of imported fresh and chilled onions and ginger increased by 23.2 per cent and 56.6 per cent respectively. While the imports of other processed products such as 'mix spices', thyme, dried onions and fresh and processed hot peppers is noted to have fluctuated, imports in the category of "other spices" remained fairly constant - averaging at 43, 328kgs within the four year period.

3.11 The Netherlands is the major supplying country for fresh onions imported into Barbados averaging 1.84 million kilograms/annum during the 4-yr period. The United States is the major supplier for the categories of "other spices" (18,332 kilograms i.e. 42 per cent on average), "thyme" (5,997.8 kilograms i.e. 79.48 per cent on average), and processed hot pepper (7, 644 kilograms i.e. 79. 95 per cent on average).

3.12 With respect to ginger, up to 2008, St. Vincent and the Grenadines was the major supplying country, supplying an estimated 52 per cent of the imports into Barbados. However between 2009 and 2011, the United States became the major supplier to the market, relinquishing that position back to St. Vincent and the Grenadines in 2012.

3.13 Imports of hot peppers have come from a number of countries including CARICOM member countries i.e. Trinidad & Tobago, Guyana and Belize. In the case of "mix spice", Canada and United States are the major sources of imports.

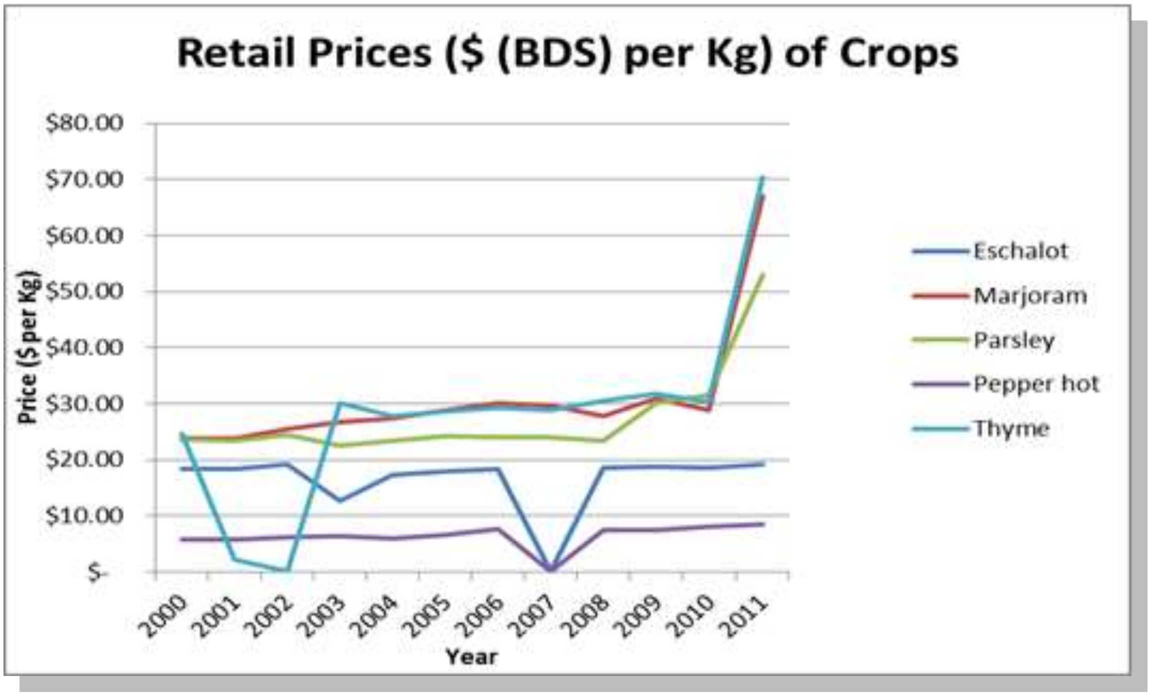
3.14 In terms of exports, Barbados has infrequently exported ginger, fresh or chilled hot peppers and mix spices to the United States and Canada. Exports in the grouping referred to as "other spices" remain the most consistent accounting for an average of 80 kilograms/annum during the period 2008 to 2012.

► ***High prices and margins (Barbados)***

3.15 The prices registered for fresh herbs and spices in the Barbados market are high. While it was observed that over a five year period wholesale prices remained relatively stable, for reasons yet to be determined, it was noted that wholesale prices increased significantly in 2011 (Fig 1). Retail prices have tended to be more volatile (Fig2). The highest priced herb is marjoram, followed by thyme, parsley, chives and hot peppers in that order. The average retail mark-up registered during the period 2000-2011, was 84% ranging from a high of 109 % in the case of parsley to low of 73% in the case of chives.

Fig 1: Wholesale Prices for Selected Herbs and Spices (2000-2011): Bds$/Kg

Fig 2: Retail Prices for Selected Herbs and Spices (2000-2011): Bds$/Kg



3.16 In summary, based on situational assessment undertaken, it has been determined that worldwide production of herbs, spices and condiments, particularly in Asia, has been increasing. So has production in the Caribbean region and actually at a much faster rate than that of world production. Worldwide production has been increasing, so have exports and imports into the Caribbean region with European, Asian and American exporters being the main suppliers to the region.

3.17 In the case of Barbados, there has also been an increase in the levels of imports of onions, ginger and other spices from the Netherlands, St. Vincent and the Grenadines, and the USA. Of significance is the fact that there is relatively limited information available with regards to the level of domestic production of individual commodities in Barbados. In the case of onions, it is recorded that local production has been increasing. However, hot pepper production has been on the decline. Recent upward movement in prices for the five selected herbs, spice and condiments, and the presence of supplies of external origin, is indicative of the unfilled demand for herbs, spices and condiments. The very wide margins registered between wholesale and retail prices, has negative implications for the short to long-term competitiveness of the local Herb, Spice and Condiments Industry.

4. STRATEGIC ANALYSIS AND STAKEHOLDER EXPECTATIONS

4.1 A brief SWOT Analysis was undertaken to determine what obstacles must be overcome or minimized and what opportunities and strengths should be built upon so as to achieve an acceptable level of competitiveness for the local Herbs, Spice and Condiments Industry. This SWOT analysis also serves to identify clear objectives and related areas of assistance needed to support the industry in achieving these objectives.

4.2 The analysis was undertaken using the process flow methodology and examines the internal issues (i.e. strengths and weaknesses) and external issues (i.e. opportunities and threats) that confront enterprises operating in the industry(i.e. primary producing enterprise, processors, retailers, operators within the Hospitality, Restaurants and Service sector who are major buyers of herbs, spices and condiments).

4.3 In summary, it can be argued that identified weaknesses in (and threats to) the performance of various enterprises involved in Barbados's Herbs, Spice, and Condiments industry , outnumber their discerned strengths and opportunities, particularly in the areas of production and processing.

4.4 It was against this backdrop that key stakeholder representatives of the various enterprise types (i.e. farmers, processors, the hospitality sector, retailers and distributors) and government agencies were invited to articulate their expectations with regards to the outcome of future industry development initiatives. These are presented in Table 9.

4.5 Noteworthy expectations were: a reduction post-harvest losses; access to real-time information on and increased access to a consistent supply of quality and cost competitive produce; yield improvements; product diversification; increasing sales, purchases and revenues; and the implementation of appropriate policy and institutional frameworks that produces the desired short to medium term effects on competitiveness.

Table 5: SWOT Analysis of Primary Producing Enterprises

Strengths	Weaknesses
1. These commodities have short and multiple harvest intervals thus generating much needed cash flow for enterprise 2. Land area required to producing these commodities. is relatively less than other short term crops 3. Consumers/buyers view locally produced herbs and spices as fresh and more flavourful 4. Demonstrated case of improved / increased availability of locally produced red onions. 5. Favourable market prices	1. Pest and disease, challenges when produced in large quantities. 2. Lack of technical know-how. 3. An unwillingness to embrace new technologies in (e.g. protected production systems, value added technology). 4. Inadequate facilities for on-farm storage post-harvest handling, grading. 5. Relatively high cost of inputs 6. Difficulty of sourcing local seeds/ planting materials and getting access to improved planting/genetic materials. 7. Limited access to external financing or credit facilities. 8. Inadequate supply of labour. 9. Inadequacy and instability of supply to customers. 10. Failure on part of sellers and buyers to honour business arrangements. 11. Inappropriate handling practices. 12. Fragmented local farming community, unwilling and to adopt or readily embracing new and joint approaches to addressing industry weaknesses and threats. 13. Inability to meet market demand.
Opportunities	**Threats**
1. There is growing local demand for these products. 2. These products currently attract relatively high market prices which is an incentive to producers. 3. Availability of technologies such as mulch and protected systems to increase marketable yields, and reduce unit cost of production 4. Further development of value-adding enterprises (e.g. dried herbs, pepper mash etc.) 5. Accessing of evolving local and export niche markets (e.g. cruise ships, CARICOM, USA) 6. Attract investment, and contributes to the national output.	1. Lack of stated government policies or incentives specifically targeted at building a competitive sector. 2. Praedial larceny and animal damage to crop. 3. Lack of timely business, policy, and programming decision-making support information on the sector. 4. Pests or diseases outbreaks. 5. Increased dependency on hybrid varieties which can threaten the survivability of local varieties. 6. Inadequate number of trained extension personnel. 7. Competition from Imports (especially branded processed products). 8. Unfavourable climatic conditions. 9. Lack of traceability within the value chain.

Table 6: SWOT Analysis of Processing Enterprises

Strengths	Weaknesses
1. Know-how in producing processed products. 2. Some flavourful products developed. 3. Brand recognition within the local market. 4. Some processors already have access to export markets.	1. Failure on part of some processors to honour business arrangements. 2. Limited working capital 3. Limited information on internal/external market conditions. 4. Limited productive capacity and operating efficiency. 5. Inadequate cold storage facilities and processing equipment. 6. High packing costs including labelling and materials. 7. Limited access to laboratory/testing facilities 8. Untrained factory/business management personnel and a lack of qualified food technologists. 9. Individualism of owner/operators. 10. Failure on the part of sellers and buyers to honour business arrangements.
Opportunities	**Threats**
1. Potential to expand local sales, product lines and to create local brands of fresh and dried herbs leading to greater visibility and further expansion of the local market share. 2. Development of value added products. 3. Synchronise market strategies to expand exports to regional and international markets. 4. Cost savings due to increased efficiencies.	1. Competition from Imported processed products. 2. A lack of policy and technical support for the overall agro- industrial sector. 3. Insufficient and inconsistent supply of quality raw materials. 4. Lack of business support information on the operations and performance of the sector. 5. The lack of established, cost-effective regional transport facilities/services to support exports. 6. Pest, disease and other environmental issues. 7. High cost of raw materials. 8. Lack of traceability within the value chain.

Table 7: SWOT Analysis of Retailing (Supermarket Chain) Enterprises

Strengths	Weaknesses
1. Cohesion and cooperation among players. 2. Access to credit facilities/cash providing good purchasing power. 3. Strong ability to influence preference of consumers to purchase high quality products. 4. Ability to access supplies from international markets. 5. Available cold chain infrastructure to support distribution.	1. Inability to meet consumer demand for local fresh herbs and spices due to inconsistent supply of produce 2. Inadequate forecasting information as to what the retail market in Barbados as whole requires. 3. Multiple producers bagging their own products create merchandising issues. 4. Failure on the part of sellers and buyers to honour business arrangements.
Opportunities	**Threats**
1. Satisfy consumer demand for local products. 2. Increase in sales due to an increase in quality supplies. 3. Further export market penetration (for some retailers only). 4. Cost savings due to increased economies of scale and efficiencies. 5. Branding of local Barbados product	1. Inconsistency of supply and quality of produce. 2. Changes in international market conditions and standards. 3. Fragmented farming and processing community. 4. Lack of market price transparency (i.e. not based on cost of production and processing) 5. Competition from the international market to supply herbs and spices. 6. Lack of business support information on the operations and performance of the sector. 7. Lack of traceability within the value chain.

Table 8: SWOT Analysis of Hospitality, Restaurant and Service Enterprises

Strengths	Weaknesses
1. Relative size and stability of the HRS food market sector. 2. Well established enterprises within tourism sector that have access to government Incentives and credit facilities. 3. Have the ability to influence the buying preference of consumers through the chef's choices of Barbadian, Caribbean and most cuisines promote the use of local herbs and spices.	1. Hoteliers inextricably linked to importer/ distributors who source, for convenience, non-local products 2. Underutilization of fresh local products as cooking ingredients. 3. Relatively high cost of local produce during the main tourist season coincides with rainy season and poses problems for supply failure. 4. Management system in the hospitality leads to delayed payment to suppliers.
Opportunities	**Threats**
1. Access to a greater volume and more consistent supply of local products/commodities. 2. Expand product offering to incorporate the use of local herbs and spices. 3. To promote quality Barbadian food products to the local "export" market. 4. Cost saving due to increased efficiencies.	1. Global economic situation: Decline in tourist arrivals and consumer spending. 2. Change in holiday preference (long stay to cruise passenger. 3. Changes in consumer taste 4. Natural disasters, outbreaks of crime 5. Lack of business support information on the operations and performance of the sector. 6. Inconsistency of supply and quality of produce. 7. Lack of traceability within the value chain.

Table 9: Expectations of Key Stakeholders

Stakeholder	Expectations
Farmers	• Reduction in larceny and decline in post harvest losses. • Improved yields • Opportunities to diversify/expand the current crop mix. • An increase in the share of the local fresh market for the selected commodities. • An increase in revenue/income and the ability to adequately provide for themselves and their family.
Processors	• Access to real-time information on the supply of fresh, quality produce from local producers. • Increased access to a consistent supply of quality and cost competitive produce. • Enhance capacity to expand current operations. • Opportunities to diversify the current product offerings. • An increase in access to the local and international markets. • An increase in revenue/ income.
Hospitality sector	• Access to real-time information on the supply of fresh, quality produce from local producers. • Increased access to a consistent supply of fresh, quality produce from local producers. • Price competitive supplies and cost savings due to reduced wastage of produce. • Increase in the utilization of herbs, spices and condiments in the menu/dishes offered.
Distributors & Retailers	• Access to real-time information on the supply of local produce. • Access to an increased supply of quality produce. • An increase in sales of local produce. • Capacity to expand the current product offerings including the introduction of a single high value locally branded fresh herb that is able to meet consumer satisfaction. • Cost savings due to increased efficiencies throughout the value chain and reduced post harvest losses and improved production. • Improved capacity to further penetrate the local and international markets.
Government Agencies	• The implementation of government's policies efforts towards import substitution, the achievement of a satisfactory level of food security and employment generation. • The implementation of appropriate policy and institutional frameworks that produces the desired short to medium term effects on competitiveness. • There is an enhanced linkage between the various sectors. • The introduction of operation standards, food quality and food safety standards, good manufacturing practices and product specifications throughout the industry. • Expansion of the agro-processing sector for these commodities. • Reduction of imports and foreign expenditure on these commodities.

	• Increase in the exports of these commodities. • Increase utilization of science and technologies and good agricultural practices in the farming community which will lead to a reduction in post harvest losses.

5. SELECTED INITIATIVES THAT SUPPORT THE DEVELOPMENT OF THE INDUSTRY

5.1 As articulated within the Barbados Medium – Term Growth and Development Strategy 2013-2020, one of the broad objectives of the Government of Barbados includes the enhancement of the level of food and nutrition security within the country. However, it is recognised that the development of the local agricultural sector continues to be hampered by a number of challenges emanating from a rapidly changing environment, including increased competition for scarce resources, high global energy costs, increased season variability as well as the adverse impacts from the eventuality of climate change. Consequently, the Government of Barbados through the Ministry of Agriculture, Food, Fisheries and Water Resource Management has sought to incorporate various strategies in an effort to reposition the agriculture to address these challenges. This includes encouraging the introduction of initiatives aimed at the development of synergies and institutional frameworks that cut across various economic sectors (e.g. agriculture, manufacturing and services) and also enhancing the capacity of local farmers to penetrate both the local and international markets.

5.2 The 'Value Chain approach' is one such initiative being encouraged by the MAFFW, whereby the competitive advancement of a particularly sub-sector is fostered through private and public sector actor collaboration and dialogue, as well as agreements and joint action/investments amongst these actors.

5.3 The Herbs, Spice and Condiments sub-sector is one that is receiving the attention of MAFFW in terms of providing the requisite institutional and policy environment to support its development. This is based on the understanding/fact that:-

- There is indicative high demand for fresh herbs and spices by the average Barbadian consumer and other sectors of the economy such as manufacturing, retailing and hospitality;
- Domestic demand for these commodities is currently satisfied by large volumes of imports;
- Local fresh products are preferred within the market, an increase in production and improved quality of these commodities will not only benefit those within the agricultural sector, but will also improve the productive capacity and revenue potential for other actors along the chain, and allow these persons to exploit the appeal for local products in both the domestic and international markets; and
- The development of an Herbs, Spice and Condiments Industry will improve access to present and new markets, the development of cottage industries, the creation of value

added products, and the expansion of exports of these items to generate foreign exchange for the local economy.

5.4 The following public and private sector initiatives have been identified as being in support of the development of Barbados's the Herbs, Spice and Condiment subsector:

- **Barbados Agricultural Development and Marketing Corporation (BADMC) Onion Drying**

  Under the aegis of a recently concluded FAO project, the Barbados Agricultural Society (BAS) has determined that a prolonged growing season for onion production would allow farmers to sell more onions, and therein reduce the need for imports of this commodity. As a means of prolonging the onion season, the BADMC has designed and commissioned a solar powered onion dryer. This dryer is however still in need of capacity improvements before it can be deemed as commercially viable.

  It should also be noted that as a means of helping Barbadian consumers to cope with the rising cost of living in the country, in 2007 the BADMC was designated as a state trading enterprise. Thus the BADMC is also actively involved in the sourcing, importing and retailing of specific food items, including onion, turkey wings and chicken wings. In 2009 the BADMC was appointed the sole importer of "duty free" onions. In this regard note is taken of the fact that the BADMC has the capacity to adequately monitor the supply of onions to the local market, and maintains a buffer stock of imported onions to mitigate instances of shortages in domestic supplies.

- **The National Agricultural Health and Food Control Programme (NAHFCP)**

  The Agricultural Health and Food Control Programme, has been established to contribute to Barbados' public health system by raising the present agricultural health and food control standards to international levels. To achieve this objective the programme proposes to improve agricultural health and the safety and quality of agricultural products by implementing several projects, the output of which would include documented food safety policies, food safety management systems, as well as the development of Good Agricultural Practices (GAP), Good Hygiene/ Handling Practices (GHP), Good Manufacturing Practices (GMP) and food safety codes for priority food value chains. Within the scope of these projects, and considered as priority, are fresh herbs and spices used in preparation of condiments.

- **Initiatives in the Private Sector**

  The purchase of a 48, 000 lb. dryer by the Valley Island Plantation is aimed at facilitating the planting of onions during the rainy season. This infrastructure can significantly reduce post-harvest losses in onion production.

6. THE INDUSTRY DEVELOPMENT PLAN

6.1 The objective of this Industry Development Plan is to provide the overarching planning framework that will guide stakeholder actions in the Herbs, Spice and Condiments industry over the short, medium and long term, for the purpose of increasing local production, diversifying the current product offering and enhancing access to the local and international markets for local enterprises.

6.2 The Plan articulates the joint vision of the private and public sector actors for the development of a vibrant, competitive, and sustainable industry. Most important is the fact that it seeks to also provide an institutional framework for improved coordination between the private and public sector and the introduction of short, medium and long-term strategies that will enhance the enabling business environment for growth within the sector. Removal of weaknesses, and threats to the operations of enterprises/stakeholders within the industry, and meeting the expectations and outcomes desired by the key stakeholders have been synergized to inform the Vision, Guiding Principles and Goals for the industry's development.

6.3 The Plan has been prepared by an "Ad Hoc Platform Committee" composite of actors representing various key private and public sector players in the industry, including the retail sector, the hospitality sector, the processing industry, the farming community/herbs, spice and condiment producers, and government agencies. The Ad Hoc Committee is chaired by a representative of the private sector, and has undertaken site visits and applied the template provided by the IICA Hemispheric project in the preparation of the Industry Development Plan.

- **Industry Vision:**

  " A productive, competitive and sustainable Herbs, Spice and Condiments Industry in Barbados, driven by joint actions between the private and public sector and supported by the requisite policy and institutional structures within ".

- **Guiding Principles:**
  - The Development Plan will be results-oriented, and will seek to promote and strengthen the adoption of the Value Chain approach to industry development.
  - It will focus on the following products: basil, thyme, marjoram, chives, hot peppers, onions, parsley, celery, coriander and ginger.
  - The Plan will take into consideration existing initiatives within the sector including the Onion Value Chain initiative; past and current Government policies and programs.

- **Goals:**

1. To establish a formal institutional mechanism that facilitates appropriate Government policy and public sector support; joint collaboration, action, and investment among private players in the sector.
2. To ensure the availability of relevant and up to date/ real time information on the industry.

3. To reduce on- farm and post harvest losses within the sector through the application of modernised technology and systems.
4. To increase the productive capacity of and application of standards by the various enterprises operating along the value chain.
5. The development of (high end) price competitive and differentiated value added products within the sector.
6. To maximise the commercial viability of stakeholders through increased market access to the domestic and international markets.

- **Specific Objectives**

Goal 1: **To establish a formal institutional mechanism that facilitates appropriate Government policy and public sector support; joint collaboration, action, and investment among private players in the sector.**

Objectives:

i. The establishment by the end of 2015, of a Public-Private Sector Dialogue and Action Platform as an improved institutional mechanism to support the Herbs, Spices and Condiments Industry.

ii. To strengthen the linkages with the MAFFW to facilitate technical support to the industry.

Goal 2: **To ensure the availability of relevant and up-to-date/real time information on the industry.**

Objectives:

i. Gather relevant information on the Herbs, Spice and Condiments Sector through different mechanisms.

Goal 3: **To reduce on – farm and post-harvest losses within the sector through the application of modernised technology and systems.**

Objectives:

i. Increase the knowledge and understanding of post harvest systems/ practices within the sector.

ii. Establishment of a multipurpose drying, packing, and processing facility by the end of 2019. **(The use of the facility will not be limited to herbs and spices)**

iii. To reduce the impact of praedial larceny within the sector by 2020.

Goal 4: To increase the productive capacity of and application of standards by the various enterprises operating along the value chain.

Objectives:

i. Increase in the application of various systems of protected agricultural among farmers within the industry by 2020.

ii. Increase the primary production output (yields, marketable quantity and quality).

iii. To guarantee the availability of high quality planting material in the industry by 2017.

iv. To improve the application of standards by operators within the industry (Good Agricultural Practices, Health and Safety standards and Product Specifications etc.) by 2020.

Goal 5: The development of (high end) price competitive and differentiated value added products within the sector.

Objectives:

i. The development of ten(10) new value-added products including a product line of dried herbs and a high value differentiated product within the herb, spice and condiment industry suitable for both the local and export market by 2020.

Goal 6: To maximise the commercial viability of stakeholders through increased market access to the domestic and international markets.

Objectives:

i. To increase the consumption of local products within the local market by 2020.

ii. To increase export of the selected commodities by 2020.

7. ACTION PLAN

7.1 To start the process of putting into effect and movement with alacrity towards realizing the Vision and Guiding Principles the goals and specific objectives stated in the Development Plan, an Action Plan has been prepared for the period 2014-2021.

7.2 The action plan outlines initiatives to be undertaken over the short, medium and long term to remove major constraints to the development of a competitive and sustainable Herbs, Spice and Condiments industry in Barbados. As such it includes efforts to enhance the flow of information between players; improve productivity and efficiency within the sector; facilitate the development of value -added products and increase stakeholder access to both the domestic and international markets.

7.3 The plan also makes provisions for the establishment of a formal and modern Institutional Framework (i.e. a Chain Committee) to drive the execution of the actions agreed to by industry stakeholders and facilitate the implementation of the abovementioned plan.

7.4 Further, it is envisioned that during the implementation of plan the industry would seek to build upon the initiatives being undertaken by the IICA Hemispheric project and the GOB/MAFFW to improve the framework for stakeholder dialogue and market information services; in addition to other efforts being executed within the private and public sectors that will support the advancement of the industry.

7.5 Table 10 below details the actions, the stakeholder entity identified as responsible for leading specified action, the time frame for execution of the action, and critical assumptions to be borne in mind.

Table 10: Action Plan for the Development of the Barbados Herb, Spice and Condiment Industry

SPECIFIC OBJECTIVES	ACTION	STAKEHOLDER RESPONSIBLE	TIMEFRAME	CRITICAL ASSUMPTIONS
GOAL 1: TO ESTABLISH A FORMAL INSTITUTIONAL MECHANISM THAT FACILITATES APPROPRIATE GOVERNMENT POLICY AND PUBLIC SECTOR SUPPORT; JOINT COLLABORATION, ACTION, AND INVESTMENT AMONG PRIVATE PLAYERS IN THE SECTOR.				
OBJECTIVE 1: THE ESTABLISHMENT BY THE END OF 2015, OF A PUBLIC-PRIVATE SECTOR DIALOGUE AND ACTION PLATFORM AS AN IMPROVED INSTITUTIONAL MECHANISM TO SUPPORT THE HERBS, SPICES AND CONDIMENTS INDUSTRY.				
1. Establish a Dialogue and Action Platform	1.1 Develop a transitory strategy for the formalisation of an “Ad Hoc Committee”	Ad Hoc Committee	Yr1Q3	**There is buy in from the private sector.**
	1.2 Develop a terms of reference for the dialogue and action platform.	Ad Hoc Committee, MAFFW	Yr1Q3	**There is buy in from the private sector.**
	1.3 Select/Appoint members to the Platform.	Private Sector	Yr1Q3	**There is buy in from the private sector.**
OBJECTIVE 2: TO STRENGTHEN THE LINKAGES WITH THE MAFFW TO FACILITATE TECHNICAL SUPPORT TO THE INDUSTRY.				
1. Facilitate collaboration and cooperation with the MAFFW	1.1 Formalise a secretariat to support the actions of the Dialogue Platform.	MAFFW	Yr1Q1	
	1.2 Identify focal points within the relevant departments to facilitate the implementation of initiatives within the sector.	MAFFW	Yr1Q1	There is buy in from the MAFFW.
	1.3 Develop action plans to facilitate the implementation of the Development Plan.	MAFFW and Private sector.	Yr1Q1- Ongoing	There is buy in from the MAFFW

2. Improve the technical capacity of the MAFFW in the area of Value chain development	2.1 Facilitate training of officers in the areas of agribusiness development and value chain development.	IICA, FAO, CARDI, MAFFW	Yr2 Q3 – Ongoing	There are resources available to facilitate capacity building.
3. Supporting the establishment of an Agribusiness Unit to service the value chains selected for development (not limited to herbs, spices and condiments)	3.1 Conduct consultations and needs assessments to determine the requirement of the unit.	Private sector and MAFFW	Yr 3Q1	There is buy in from various actors.
	3.2 Develop and implement a policy to facilitate the establishment of an Agribusiness Unit.		Yr 3Q4	
	3.3 Allocate the necessary resources (human and financial) to support the establishment and operation of the unit.	Private sector and MAFFW	Yr 4Q1	Resources are available to establish such a unit.
GOAL 2: TO ENSURE THE AVAILABILITY OF RELEVANT AND UP-TO-DATE/REAL TIME INFORMATION ON THE INDUSTRY.				
OBJECTIVE 1: GATHER RELEVANT INFORMATION ON THE HERBS, SPICE AND CONDIMENTS SECTOR THROUGH DIFFERENT MECHANISMS.				
1. Facilitate access to data on the industry.	1.1 Design mechanisms to capture the data (production, demand, price etc.)	MAFFW and IICA	Completed	
	1.2 Conduct of the appropriate surveys to determine production, price and demand for the selected commodities.	MAFFW , BADMC and IICA , Private sector	Yr1 Q1 – Ongoing activity	Resources are available for the conduct of surveys. This activity is included within the work plan of the Ministry. This activity is included within the work plan of IICA.

	1.3 Facilitate separation of tariff lines to capture trade information for the selected commodities	MAFFW, Ministry of Industry, International Business Commerce and Small Business Development (MIICS)	Yr1Q2	There is cooperation amongst the relevant agencies. Tariff information leads to the disaggregation of trade info for selected commodities.
	1.4 Review and adjust the current Market Information System to capture information on the herbs and spice industry.	MAFFW	Yr2Q1	The resources are available to expand the MIS
	1.5 Expand the MAFFW's existing Monthly ongoing survey of crop production to capture the production of herbs and spices	MAFFW	Yr1Q4	There is cooperation from the private sector.
GOAL 3: TO REDUCE ON – FARM AND POST HARVEST LOSSES WITHIN THE SECTOR THROUGH THE APPLICATION OF MODERNISED TECHNOLOGY AND SYSTEMS.				
OBJECTIVE 1: INCREASE THE KNOWLEDGE AND UNDERSTANDING OF POST-HARVEST SYSTEMS/ PRACTICES WITHIN THE SECTOR.				
1. Improve post harvest handling practices in the sector.	1.1 Identify various cost efficient post harvest systems for application in the sector.	MAFFW, IICA,	Yr1 Q3- Ongoing	This activity is included the work plan of the Ministry. Resources are available to support this activity.
	1.2 Develop and distribute educational materials on the application of post harvest systems and handling practices.	MAFFW, IICA	Yr1 Q3- Ongoing	This activity is incorporated into the work plan of the relevant agencies.
	1.3 Conduct training / workshops in area of post harvest management for stakeholders.	MAFFW, IICA, CARDI and International Partners	Yr1 Q3- Ongoing	There is buy in from stakeholders

OBJECTIVE 2: ESTABLISHMENT OF A MULTIPURPOSE DRYING, PACKING, AND PROCESSING FACILITY BY THE END OF 2019. (THE USE OF THE FACILITY WILL NOT BE LIMITED TO HERBS AND SPICES)				
1. Determine the feasibility and requirements for establishing a multipurpose processing facility.	1.1 Undertake a feasibility assessment and associated environmental impact assessment.	Private sector/MAFFW, Barbados Investment and Development Corporation (BIDC), IICA, BADMC	Yr2 Q1	Resources are available.
	1.2 Development of a Business Plan for the establishment of a facility.	Private sector/MAFFW, BIDC, IICA	Yr2 Q3	
2. Construction of the facility.	2.1 Mobilize investment for facility.	Private sector/MAFFW/ International partners	Yr 2Q1 – Yr3 Q1	There is buy in from the private sector
	2.2 Construction of facility which adheres to international standards (HACCP, ISO etc.)	Private sector, government agencies, international partners	Yr3 Q2 – Yr4 Q3	Resources are available.
OBJECTIVE 3: TO REDUCE THE IMPACT OF PRAEDIAL LARCENY WITHIN THE SECTOR BY 2020.				
3. The implementation of strategies to reduce the prevalence of praedial larceny in the subsector.	3.1 Assess the impact of praedial larceny on the subsector.	MAFFW, Farmer Community	Yr1 Q1 - Yr1 Q2	Farmers cooperate with the process. Resources are available
	3.2 Identify and evaluate potential control measures to address praedial larceny.	MAFFW, FAO, Private sector	Yr1 Q2 -Yr1 Q3	Resources are available
	3.3 Encourage the farming community to report incidences of praedial larceny.	MAFFW, Private Sector	Yr1 Q2 -Ongoing	There is buy in from the private sector
	3.4 Establish a list of approved producers and buyers of herbs and spices.	MAFFW, Private Sector	Yr1 Q3	There is buy in from the private sector

	3.5 Establish a database to record incidences of praedial larceny in the sector.	MAFFW,Barbados Police Force	Yr1 Q2	There is buy in from the private sector
	3.6 Establish a line of communication between the sector and the Barbados Police Force to address issues related to praedial larceny.	MAFFW, Barbados Police Force, Private Sector	Yr1 Q2	There is cooperation between the stakeholders.
GOAL 4: TO INCREASE THE PRODUCTIVE CAPACITY OF AND APPLICATION OF STANDARDS BY THE VARIOUS ENTERPRISES OPERATING ALONG THE VALUE CHAIN.				
OBJECTIVE 1: INCREASE IN THE APPLICATION OF VARIOUS SYSTEMS OF PROTECTED AGRICULTURE AMONG FARMERS WITHIN THE INDUSTRY BY 2020.				
1. Improve the productivity of individual enterprises in the production various herbs, spices and condiments through the application of protected agriculture.	1.1 Identify potential protected agriculture systems for the production of herbs and spices considering various parameters. (e.g. costs, farmer's land tenure & requirements and local conditions)	MAFFW (Food Crop Research Department, Plant protection)	Yr1 Q1	There is buy in from the Ministry and private sector.
	1.2 Conduct a stakeholder meeting to garner support for research and identify current protected systems utilised in the farming community.	MAFFW (Food Crop Research Department, Plant protection) and Private sector	Yr1Q1	There is buy in from the private sector.
	1.3 Conduct research in the area of protected agriculture and integrated pest management (focus on conducting parallel research at the ministry and on the farm).	MAFFW (Food Crop Research Department, Plant protection)	Yr1 Q1- Y2Q4	Incorporated into Ministry's work plan and appropriate resources allocated.
	1.4 Establish a demonstration site (stand alone/farm trail plots).	MAFFW (Food Crop Research Department), IICA and	Yr1Q2-Yr2Q4	Resources are available.

		other partners		
	1.5 Facilitate the training of technical officers in the area of protected agriculture and integrated pest management.	MAFFW (Food Crop Research Department, plant protection), IICA and other partners	Yr1Q4- Yr2Q4	There is buy in from the Ministry.
	1.6 Develop and distribute educational materials on the use of protected systems for Herb, Spice and Condiment production.	MAFFW (Food Crop Research Department), IICA and other partners	Yr2Q4	Incorporated into Ministry's work plan
	1.7 Conduct of training for farmers.(ongoing in line with the parallel research e.g open days)	MAFFW (Food Crop Research Department),IICA and other partners	Yr1Q2- Yr3Q2	There is buy in from farmers
OBJECT 2: INCREASE THE PRIMARY PRODUCTION OUTPUT (YIELDS, MARKETABLE QUANTITY AND QUALITY).				
1. Facilitate production planning within the sector.	1.1 Establish a Committee to assist production planning.	Dialogue Platform, MAFFW, IICA and relevant government agencies, Barbados Agricultural Society and Association of Women in Agriculture, input supplier	Yr1Q1	
	1.2 Conduct relevant research to provide base line information on the sector (production data, cost of production etc.)	MAFFW	Yr1Q1 –Yr1Q4	Resources are available
	1.3 Develop and implement National/ Individual Enterprise Production Plans.	Privates Sector and MAFFW	Yr1Q4- Yr 2Q1	
2. Improve human resources and technical knowledge	2.1 Develop and conduct training for the trainer programmes for	MAFFW (Food Crop Research Department,	Y2Q1	Proactive participation of Extension

in the sector.	research and extension officers (production/GAP techniques)	extension and plant protection)		Officers
	2.2 Conduct commodity assessment and analysis along the chain to identify areas for & means of improving the efficiency and productivity of actors along the value chain.	MAFFW, IICA, Ministry of Health, BIDC, BADMC, National Nutrition Centre	Yr1Q2 –Yr2Q2	Resources are available
	2.3 Provide advanced training for technical Officers through study tours and consultancies.	MAFFW, IICA and international partners.	Yr1Q4- Ongoing	Resources will be available.
	2.4 Conduct training sessions/ workshops and other awareness activities for farmers e.g. Open days	MAFFW (Extension Department) and IICA	Yr1Q2- Ongoing	Proactive participation of producers
	2.5 Develop and distribute educational materials for farmers including production manuals,	MAFFW and IICA, private sector	Yr2Q4	This action will be included in the work plan of the MAFFW. Resources are available.
3. Identify and promote appropriate cropping systems for growing herbs and spices.	3.1 Collect baseline information on current planting practices.	MAFFW,	Yr1Q1– Yr1Q2	There is buy in from local farmers
	3.2 Conduct research to identify appropriate cropping systems for growing herbs and spices.	MAFFW,	Yr1Q1– Ongoing	Resources are available
	3.3 Develop educational materials on various cropping systems for growing herbs and spices.	MAFFW,	Yr2Q4	Resources are available
	3.4 Conduct promotional activities for promoting various	MAFFW,	Yr2Q4 – Ongoing	There is buy in from local farmers

	cropping systems for growing herbs and spices.			
OBJECTIVE 3: TO GUARANTEE THE AVAILABILITY OF HIGH QUALITY PLANTING MATERIAL IN THE INDUSTRY BY 2017.				
1. Facilitate the provision of high quality planting material.	1.1 Source various planting materials and varieties.	MAFFW ,IICA and international partners	Yr1 Q1- Ongoing	Resources are available to conduct research.
	1.2 Conduct trials including on farm trails focused on the identification of appropriate varieties.	MAFFW, Producers, and BADMC	Yr1Q2- Ongoing	Resources are available to conduct research ; Action is incorporated into the Ministry's work plan; Producers proactively participate in the process
	1.3 Conduct Organoleptic testing conducted in conjunction with the variety trials.	MAFFW, IICA and Private Sector, BADMC	Yr1Q4- Ongoing	Resources are available to conduct research; Action is incorporated into the Ministry's work plan; Producers proactively participate in the process.
	1.4 Assess the nutritional content/ value of the varieties of herbs and spices in conjunction with the variety trails.	MAFFW, National Nutrition Centre and Private Sector	Yr1Q4- Ongoing	
	1.5 Develop product specifications for selected commodities.	MAFFW, BNSI and Private Sector	Yr1Q4- Ongoing	
	1.6 Promote the adoption of new varieties within the farming community.	MAFFW (Extension Department), CARDI and other research institutions	Yr1Q4- Ongoing	Action is incorporated into the Ministry's work plan; Expertise is available within the Ministry to conduct research.
	1.7 Multiplication of planting materials by the Ministry through the development of appropriate techniques. (e.g. germplasm bank)	MAFFW (Tissue Culture Department, Food Crops)	Y2Q2 –Ongoing	
	1.8 Promote the use of appropriate multiplication	MAFFW (Extension Department, Food	Yr2Q3	Producers proactively participate in the

	practices within the farming community. (e.g. germplasm bank)	Crops) and IICA		process.
OBJECTIVE 4: TO IMPROVE THE APPLICATION OF STANDARDS BY OPERATORS WITHIN THE INDUSTRY (GOOD AGRICULTURAL PRACTICES, HEALTH AND FOOD SAFETY STANDARDS AND PRODUCT SPECIFICATIONS ETC.) BY 2020.				
1. Facilitate the application of Good Agricultural Practices and Health and Food Safety Standards by producers within the industry. (this includes the establishment of a system of traceability)	1.1 Review of current practices employed on farm.	MAFFW (NAHFCP) and Private Sector	Yr1Q1-Yr2Q4	The NAHFCP is implemented Farmers proactively participate in the process
	1.2 Develop Good Agricultural Practices and Health and Food Safety standards for the industry	MAFFW (NAHFCP), BNSI and Private Sector	Yr1Q1-Yr1Q4	The requisite technical expertise is available
	1.3 Provide training in the area of Good Agricultural Practices and Health and Food Safety standards for stakeholders.	MAFFW (NAHFCP), BNSI and Private Sector	Yr2Q1-Ongoing	Farmers and processors adopt practices
	1.4 Develop and distribute educational materials relating to GAP and health and Food Safety Standards.	MAFFW (NAHFCP), Private Sector and other international partners	Yr2Q3- Ongoing	Resources are available.
	1.5 Monitor the application of GAPs and health and food safety standards within the industry.	MAFFW (NAHFCP) and Private Sector	Yr2Q3- Ongoing	The industry is willing to adopt these practices.

GOAL 5: **THE DEVELOPMENT OF (HIGH END) PRICE COMPETITIVE AND DIFFERENTIATED VALUE ADDED PRODUCTS WITHIN THE SECTOR.**				
OBJECTIVE1: The development of ten(10) new value-added products including a product line of dried herbs and a high value differentiated product within the herb, spice and condiment industry suitable for both the local and export market by 2020.				
1. Support product development and commercialisation in the industry	1.1 Conduct market research to identify potential products based on consumer preferences.	Private sector	Yr2Q4- Ongoing	Resources are available
	1.2 Provide training in product development.	Private sector and Government Agencies	Yr3Q2	Financial and Human resources are available to support the establishment of such a unit.
	1.3 Conduct research in the area of product development.	Private sector (lead) with the assistance of relevant Government Agencies, food technologists	Yr3 Q3	Resources are available
	1.4 Conduct product testing and trails	Private sector (lead) with the assistance of relevant Government Agencies	Yr 3Q2 – Ongoing	Resources are available
	1.5 Development of Product standards for the products in consultation with the industry	Barbados National Standards Institute (BNSI)	Yr 3Q2 – Ongoing	The industry is will respond to these standards.
	1.6 Promote the adoption of appropriate packaging and labelling practices through training and the development of educational materials.	Government Agencies	Yr2Q4	There is buy- in from the private sector.
2. Source financing to support the development of the new products	2.1 Preparation of investment proposals and technological packages.	Private sector, international partners and Government Agencies	Yr4 Q3	There is buy- in from the private sector.

	2.2 Identify sources of funding to facilitate product development and commercialisation in the private sector.	Private sector (lead), international funding agencies and Government Agencies	Yr2- Q2	Resources are made available
3. Enhance the utilisation of intellectual property rights/ registered trademarks in the industry.	3.1 Sensitisation in the area of intellectual property rights/ registered trademarks.	Government Agencies, IICA, Corporate Affairs and Intellectual Property Office and other International partners	Yr4 Q4 – Ongoing	Buy in from the private sector.
	3.2 Facilitate the provision of intellectual property rights/ registered trademarks.	Government Agencies, IICA, Corporate Affairs and Intellectual Property Office and other International partners, CAIPO	Yr4 Q4 – Ongoing	Intellectual property rights/ registered trademarks will guarantee sustainability. Human resources are available.
	3.3 Develop and implement incentives to promote the adoption of intellectual property rights/ registered trademarks.	Government Agencies,	Yr4 Q4 – Ongoing	Resources are available.
	3.4 Develop and distribute educational materials on the adoption of intellectual property rights/ registered trademarks.	Government Agencies, , Corporate Affairs and Intellectual Property Office and other International partners	Yr4 Q4	Resources are available.
4. Improve the application of Good Manufacturing Practices (GMP) and Health and safety practices to support the industry.	4.1 Review of the current practices in the food sector.	MAFFW(NAHFCP) and Private Sector	Yr2 Q1 – Yr4 Q4	

	4.2 Develop and implement GMPs and Health and Safety standards for producers within the industry.	MAFFW(NAHFCP) and Private Sector	Yr2 Q1 – Yr4 Q4	That the NAHFCP is fully implemented within the timeframe of the development plan.
	4.3 Provision of training and educational materials in the area of GMPs and Health and safety standards for the processing sector.	MAFFW(NAHFCP) and Private Sector	Yr2 Q1 – Yr4 Q4	Funding is available to facilitate the training of the private sector. The industry is willing to adopt these practices.
	4.4 Monitor the application of GMPs and health and food safety standards within the industry.	MAFFW (NAHFCP) and Private Sector	Yr2 Q1 – Ongoing	The industry is willing to adopt these practices.
GOAL 6: TO MAXIMISE THE COMMERCIAL VIABILITY OF STAKEHOLDERS THROUGH INCREASED MARKET ACCESS TO THE DOMESTIC AND INTERNATIONAL MARKETS.				
OBJECTIVE 1: TO INCREASE THE CONSUMPTION OF LOCAL PRODUCTS WITHIN THE LOCAL MARKET BY 2020.				
1. Determine consumption/ demand in the local market.	1.1 Conduct research to determine the consumption and demand for the various products of the within the local markets.	MAFFW, Private sector and IICA	Yr1 Q1- Ongoing	Resources are available
2. Create and implement a marketing campaign to promote the use of local commodities.	1.1 Introduction of mechanisms to promote the use of local products (taste testing, promo materials)	Private sector, Government Agencies, (BIDC, BADMC etc.) IICA and other international partners	Yr1 Q4 – Ongoing	There is joint cooperation between the public and private sector.
	2.2 Introduce mechanisms to increase the visibility of local products within the retail	Private sector and Government Agencies and IICA	Yr1 Q4	There is joint cooperation between the public and private sector.

	market.			
3. Facilitate the development of sustained market arrangements along the value chain.	3.1 Promote the creation of sustainable farmer cooperatives and processor cooperatives.	Private sector, MAFFW, IICA and other International partner's	Yr1 Q2- ongoing	Farmers are willing to form cooperatives.
	3.2 Review and adjust the current Market Information System to capture information on the herbs and spice industry.	MAFFW, FAO, IICA and BADMC	Yr2Q1	Resources are available
	3.3 Develop and implement marketing programmes to support trade along the value chain.	Private sector	Yr2 Q1- ongoing	There is a willingness among players to participate in such activities.
	3.4 Liaise with chefs and household to assist with the commercialisation of new products.	Private sector	Yr3 Q2 – Ongoing	There is buy- in from the private sector.
	3.5 Promote the utilisation of future market business agreements between buyers and sellers of herbs and spices	Private Sector and Government agencies.	Yr1 Q1- Ongoing	There is buy in from the private sector.
	3.5 Promote the utilisation of contractual arrangements for the sale of herbs and spices.	Private Sector	Yr1Q4-ongoing	There is buy in from the private sector.
4. Establish a funding mechanism to facilitate access to markets with cash flow challenges.	4.1 Review existing and past funding models intended to facilitate trade between the farming community and markets with cash flow	International partners, MAFFW and Private sector	Yr1 Q3-Yr1Q4	Resources are available

	challenges.			
	4.2 Develop and implement a funding mechanism to facilitate trade between the farming community and markets with cash flow challenges.	International partners, MAFFW and Private sector	Yr2Q1 - ongoing	Resources are available
OBJECTIVE 2: TO INCREASE EXPORT OF THE SELECTED COMMODITIES BY 2020.				
1. Conduct the requisite market research to identify a selection of priority commodities for penetration into the international market.	1.1 Conduct of competiveness studies	MAFFW and IICA	Yr2Q2	Resources are allocated to this activity
	1.2 Conduct of a demand survey for the commodities within the international market	Private sector, Government Agencies (BIDC, BADMC etc.), IICA and other International partners	Yr2Q2 – Ongoing	The industry is willing to cooperate in the process. Funding is available for the conduct of the survey.
	1.3 Document and distribute the information to stakeholders.	Government Agencies (BIDC, BADMC etc.)	Yr2 Q 3 – Ongoing	
2. Improve the quality standards applied within the industry to meet international standards.	2.1 Upgrade the existing the Laboratory facilities to meet international standards.	Private sector, NAHFCP , Government Agencies and IICA	ongoing	The NAHFCP is fully implemented within the timeframe of the development plan. Resources (human and financial) are available to facilitate the establishment of the Laboratory facilities.
	2.2 Develop and integrate a traceability system to support the sector.	NAHFCP	Yr1Q1 – Yr2 Q4	There is buy in from stakeholder.

	2.3 Develop and execute an educational campaign to facilitate the adoption of international standards.	NAHFCP	Yr2Q4 – ongoing	Resources are available.
	2.4 Introduce incentives to facilitate the adoption of improved standards within the herb, spice and condiment industry.	NAHFCP, MAFFW	Yr2Q4 – ongoing	
3. Facilitate market penetration in international markets by local producers.	3.1 Establishment of a marketing mechanism to support the promotion of local products in the international markets.	Private sector, BIDC, MIIC and Ministry of Foreign Affairs and Foreign Trade (MFA)	Yr2 Q4	Resources are available to support such and initiative
	3.2 Utilise Promotional mechanisms/ avenues to market local products in the external market (trade shows etc.)	Private sector, MFA Government Agencies including Barbados Investment and Development Corporation (BIDC) and Barbados Tourism Authority (BTA), IICA and other International partners.	Yr2Q2– Ongoing	Resources are available to support such and initiative
	3.3 Provision of training on brand development and marketing for stakeholders.	Private sector, BIDC and government agencies.	Yr2Q2– Ongoing	Resources are available to support such and initiative

Appendices

Appendix 1: Imports of Select Herbs and Spices into Barbados during the period 2008-1012

Year	2008		2009		2010		2011		2012	
Description	Volume (kgs)	Value (Bds$)	Volume (kgs)	Value (Bds$)	Volume (kgs)	Value (Bds$)	Volume (kgs)	Value (Bds$)	Volume (kgs)	Value (Bds$)
ONIONS, FRESH OR CHILLED	1,760,586	1,411,590	2,064,399	1,510,467	2,026,532	2,256,414	2,212,691	2,565,209	2,169,334	1,919,920
OTHER FRUITS OF THE GENUS CAPSICUM AND PIMENTA, FRESH OR CHILLED	12,610	30,399	2,670	12,063	2,994	13,849	3,654	10,093	16,885	73,715
ONIONS DRIED, WHOLE, CUT, SLICED, BROKEN OR IN POWDER	59,275	457,306	170,054	645,677	49,132	379,348	72,412	534,143	58,750	499,447
OTHER FRUITS OF GENUS CAPSICUM & PIMENTA DRIED CRUSHED OR GROUND	11,983	74,727	14,787	59,373	10,587	38,217	4,221	30,342	6,227	36,814
GINGER	40,380	70,713	49,578	98,335	70,078	146,845	56,316	142,945	63,231	124,889
THYME	6,106	39,244	15,133	52,869	7,399	31,290	4,432	25,552	4,661	39,303
MIXTURES OF TWO OR MORE SPICES	42,472	303,861	18,002	144,761	14,632	102,898	12,829	92,606	11,801	55,873
OTHER SPICES	38,100	244,230	47,655	217,936	37,868	193,511	49,813	276,784	43,204	254,008

Source: Ministry of Agriculture, Food, Fisheries and Water Resource Management

Appendix 2: Domestic Exports of Select Herbs and Spices from Barbados during the period 2008-1012

Year	2008		2009		2010		2011		2012	
Description	Volume (kgs)	Value (Bds$)	Volume (kgs)	Value (Bds$)	Volume (kgs)	Value (Bds$)	Volume (kgs)	Value (Bds$)	Volume (kgs)	Value (Bds$)
ONIONS, FRESH OR CHILLED	0	0	0	0	0	0	0	0	0	0
OTHER FRUITS OF THE GENUS CAPSICUM AND PIMENTA, FRESH OR CHILLED	3816	21091	0	0	0	0	0	0	1155	4230
ONIONS DRIED, WHOLE, CUT, SLICED, BROKEN OR IN POWDER	0	0	0	0	0	0	0	0	1	23
OTHER FRUITS OF GENUS CAPSICUM & PIMENTA DRIED CRUSHED OR GROUND	0	0	0	0	0	0	0	0	0	0
GINGER	553	1800	0	0	0	0	2	4	10	393
THYME	0	0	0	0	0	0	0	0	0	0
MIXTURES OF TWO OR MORE SPICES	530	11040	0	0	0	0	0	0	0	0
OTHER SPICES	4	291	56	279	200	232	0	0	140	5253

Source: Ministry of Agriculture, Food, Fisheries and Water Resource Management

Appendix 3: Production of Select Herbs and Spices by Region (Tonnes)

Region	Items	2007	2008	2009	2010	2011
Africa	Onions (inc. shallots), green	537,608	601,746	554,317	618,710	624,334
Americas	Onions (inc. shallots), green	253,728	241,767	240,229	269,173	249,052
Asia	Onions (inc. shallots), green	2,736,600	2,802,059	3,392,878	3,245,979	3,414,646
Europe	Onions (inc. shallots), green	306,238	333,844	373,194	368,507	400,403
Oceania	Onions (inc. shallots), green	205,680	200,060	203,061	204,960	178,618
Africa	Onions, dry	7,393,273	7,958,424	8,391,208	9,087,965	8,342,189
Americas	Onions, dry	9,260,980	8,902,849	9,039,743	9,441,034	9,476,412
Asia	Onions, dry	48,322,144	48,505,883	46,851,689	51,439,396	56,737,041
Europe	Onions, dry	7,860,784	8,806,185	8,848,289	8,675,036	10,488,623
Oceania	Onions, dry	246,506	254,372	283,830	259,957	330,860
Africa	Chillies and peppers, dry	476,806	555,683	481,167	503,275	504,955
Americas	Chillies and peppers, dry	235,311	212,594	230,863	202,655	247,541
Asia	Chillies and peppers, dry	2,246,487	2,281,263	2,217,984	2,225,792	2,474,855
Europe	Chillies and peppers, dry	81,093	73,723	96,627	119,331	123,770
Oceania	Chillies and peppers, dry	NA	NA	NA	NA	NA
Africa	Chillies and peppers, green	2,750,752	2,902,629	3,052,835	2,768,519	2,731,271
Americas	Chillies and peppers, green	3,413,876	3,640,803	3,547,619	3,890,814	3,757,830
Asia	Chillies and peppers, green	18,356,412	18,660,866	19,210,821	19,818,242	20,552,164
Europe	Chillies and peppers, green	2,901,651	2,875,012	3,087,145	2,870,157	2,841,064
Oceania	Chillies and peppers, green	65,041	66,062	55,806	56,500	56,700
Africa	Spices, nes	36,654	37,314	38,264	40,033	38,543
Americas	Spices, nes	31,161	31,189	30,655	26,638	29,784
Asia	Spices, nes	1,479,702	1,467,144	1,472,591	1,929,056	1,997,002
Europe	Spices, nes	4,440	4,313	5,288	5,896	6,185
Oceania	Spices, nes	1,047	975	1,138	908	908
Africa	Ginger	193,594	207,905	222,746	224,017	217,663
Americas	Ginger	4,024	3,446	4,592	4,172	4,348
Asia	Ginger	1,379,532	1,382,762	1,426,317	1,481,683	1,805,331
Europe	Ginger	NA	NA	NA	NA	NA

Source : FAOSTAT