

AGRICULTURAL POLICY REPORTS

JANUARY 2018

AUTHORS

OLGA SHIK

RACHEL ANTOINETTE BOYCE

CARMINE PAOLO DE SALVO

JUAN JOSÉ EGAS



ANALYSIS OF AGRICULTURAL POLICIES IN TRINIDAD AND TOBAGO

Cataloging-in-Publication data provided by the Inter-American Development Bank Felipe Herrera Library.

Analysis of agricultural policies in Trinidad and Tobago / Olga Shik, Rachel Antoinette Boyce, Carmine Paolo De Salvo, Juan José Egas. p. cm. — (IDB Monograph ; 576)

Includes bibliographic references.

1. Agriculture and state-Trinidad and Tobago. 2. Agricultural price supports-Trinidad and Tobago. 3. Farm produce-Trinidad and Tobago. I. Shik, Olga. II. Boyce, Rachel. III. De Salvo, Carmine Paolo. IV. Egas, Juan José. V. Inter-American Development Bank. Environment, Rural Development and Risk Management Division. VI. Series.
IDB-MG-576

Authors: Olga Shik, Rachel Antoinette Boyce, Carmine Paolo De Salvo, Juan José Egas.

JEL Codes: Q01 Sustainable Development; Q12 Micro Analysis of Farm Firms, Farm Households, and Farm Input Markets; Q13 Agricultural Markets and Marketing – Cooperatives – Agribusiness; Q17 Agriculture in International Trade; Q18 Agricultural Policy – Food Policy.

Published January 2018

Design and Layout: Elena Sampedro | elena@lacasagrafica.com

Photo credits: Shutterstock photos (pages 6, 8, 25, 38 and front cover); iStock photos (page 88)

Series of Publications on Monitoring Agricultural Policy

www.iadb.org

www.iadb.org/agrimonitor

Copyright © 2018 Inter-American Development Bank

This work is licensed under a Creative Commons IGO 3.0 Attribution-NonCommercial-NoDerivatives (CC-IGO BY-NC-ND 3.0 IGO) license (<http://creativecommons.org/licenses/by-nc-nd/3.0/igo/legalcode>) and may be reproduced with attribution to the IDB and for any non-commercial purpose. No derivative work is allowed. Any dispute related to the use of the works of the IDB that cannot be settled amicably shall be submitted to arbitration pursuant to the UNCITRAL rules. The use of the IDB's name for any purpose other than for attribution, and the use of IDB's logo shall be subject to a separate written license agreement between the IDB and the user and is not authorized as part of this CC-IGO license. Note that link provided above includes additional terms and conditions of the license. The opinions expressed in this publication are those of the authors and do not necessarily reflect the views of the Inter-American Development Bank, its Board of Directors, or the countries they represent.



For more information, including the full report, please contact:

Juan José Egas Yerovi | jegasyerovi@iadb.org

ANALYSIS OF AGRICULTURAL POLICIES IN TRINIDAD AND TOBAGO

AUTHORS

OLGA SHIK

RACHEL ANTOINETTE BOYCE

CARMINE PAOLO DE SALVO

JUAN JOSÉ EGAS

ABSTRACT

Although the agricultural sector contributes only 0.5% to Trinidad and Tobago's GDP, it accounts for over 4% of employment and is important for the diversification of the economy. The Government of Trinidad and Tobago supports agriculture through a combination of incentives to agricultural producers, support for research and infrastructure, and border protection measures. Support to producers averaged 22.4% of gross farm receipts in 2013-2015, and a significant share of that support (44%) was provided in the form of transfers to general services. At the same time, total transfers arising from agricultural policy amounted to only 0.34% of the national GDP. Reorienting agricultural policy towards goals and actions that are less production-distorting, and that address agricultural productivity and profitability, will help create a possibly small, but efficient agricultural sector, as well as exploit certain specific competitive advantages.

ABOUT THE AUTHORS

Olga Shik | Agricultural Economist and Consultant, IDB

Rachel Antoinette Boyce | Consultant, IDB

Carmine Paolo De Salvo | Rural Development Specialist, IDB

Juan José Egas | Consultant, IDB

This report has been prepared in the framework of Inter-American Development Bank Agrimonitor initiative.

ABBREVIATIONS AND ACRONYMS

AC	All Commodities
ACP	African, Caribbean and Pacific Group of States
ADB	Agricultural Development Bank
AMSP	Accompanying Measures for Sugar Protocol Countries
APDP	Agriculture Professional Development Program
ASTT	Agricultural Society of Trinidad and Tobago
BT	Budget Transfers
CAGR	Compound Annual Growth Rate
CAHFSA	Caribbean Agricultural Health and Food Safety Agency
CARDI	Caribbean Agricultural Research and Development Institute
CARICOM	Caribbean Community and Common Market
CCGA	Co-Operative Citrus Growers Association
CCIB	Cocoa and Coffee Industry Board
CEPAL	The Economic Commission for Latin America and the Caribbean
CET	Common External Tariff
CGA	Coconut Growers Association
CLFP	Commercial Large Farms Programme
CROSQ	CARICOM Regional Organization for Standards and Quality
CSCT	Consumer Single Commodity Transfer
CSE	Consumer Support Estimate
CSO	Central Statistical Office
DTF	Distance to Frontier
EMBD	Estate Management and Business Development Company
EPC	Effective Protection Coefficient
ERP	Effective Rate of Protection
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GORTT	Government of the Republic of Trinidad and Tobago
GSSE	General Services Support Estimate
IDB	Inter-American Development Bank
IICA	Inter-American Institute for Cooperation on Agriculture
IMF	International Monetary Fund

LAC	Latin America and the Caribbean
LLPB	Livestock and Livestock Products Board
MALF	Ministry of Agriculture, Land and Fisheries
MPS	Market Price Support
MTPF	Medium-Term Policy Framework
NAHFSA	National Agricultural Health and Food Safety Agency
NAMDEVCO	National Agricultural Marketing and Development Corporation
NAMISTT	National Agricultural Market Information System Trinidad and Tobago
NPC	Nominal Protection Coefficient
NRP	Nominal Rate of Protection
NRWP	Network of Rural Women Producers
NSDSL	National Schools Dietary Services Limited
ODA	Official Development Aid
OECD	Organization for Economic Cooperation and Development
PSE	Producer Support Estimate
PSIP	Public Sector Investment Program
R&D	Research and Development
SCT	Single Commodity Transfer
SFC	Sugar Cane Feed Centre
SPS	Sanitary and Phytosanitary
SSIP	Social Sector Investment Program
TSE	Total Support Estimate
TTABA	Trinidad and Tobago Agribusiness Association
URP	Unemployment Relief Program
USAID	United States Agency for International Aid
USDA	United States Department of Agriculture
UTT	University of Trinidad and Tobago
UWI	University of West Indies
VAT	Value Added Tax
WDI	World Development Indicators
WEF	World Economic Forum
WTO	World Trade Organization
YAPA	Youth Apprenticeship Program in Agriculture

TABLE OF CONTENTS

Introduction | 7

1. General Overview of Agricultural Policy | 8

- 1.1. Role of agriculture in the economy of Trinidad and Tobago | 8
- 1.2. Challenges facing the agricultural sector | 16
- 1.3. Strategic objectives of agricultural policy, main documents, implementing institutions | 18
- 1.4. Budget transfers to agriculture | 23

2. Agricultural and rural development policy | 25

- 2.1. Overview of policy programs and actions | 25
- 2.2. Domestic Policy | 27
- 2.3. Agricultural development support | 32
- 2.4. Agro-food trade policy and regulations | 34
- 2.5. Fiscal Policy | 37

3. Analysis of support to agriculture | 38

- 3.1. Methodology | 38
- 3.2. Data Description | 40
- 3.3. Results: Level and structure of support to producers | 44
 - 3.3.1. Support to producers by commodity | 48
 - 3.3.1.1. Rice subsector policy analysis | 53
 - 3.3.1.2. Root crops subsector policy analysis | 55
 - 3.3.1.3. Cocoa subsector policy analysis | 57
 - 3.3.1.4. Hot pepper subsector policy analysis | 60
 - 3.3.1.5. Pumpkin subsector policy analysis | 65

3.3.1.6. Other export crops policy analysis | 69

3.3.1.7. Dairy subsector policy analysis | 71

3.3.1.8. Livestock subsector policy analysis | 73

3.3.1.9. Apiculture subsector policy analysis | 75

3.3.1.10. Effective rate of protection | 76

3.3.2. Budget support evaluation | 79

3.3.3. General services support estimate | 81

3.3.4. Consumer support estimate | 85

3.3.5. Total support estimate | 86

4. Conclusions and Recommendations | 88

References | 91

List of figures | 94

List of tables | 96

Annex 1

PSE Methodology Definitions | 97



INTRODUCTION

This report presents the results of a quantitative approach to agricultural policy monitoring, applying the Producer Support Estimate (PSE) methodology for measuring the level of agricultural support. The estimates results contribute to the IDB Agrimonitor database and cover the period 2010-2015.

The first chapter of this report focuses on the role agriculture plays in the economy, employment, and international trade in Trinidad and Tobago, and analyzes the relationships between the challenges agriculture faces, the policy goals declared by the Government of the Republic of Trinidad and Tobago (GORTT), and actions taken to provide support to agriculture.

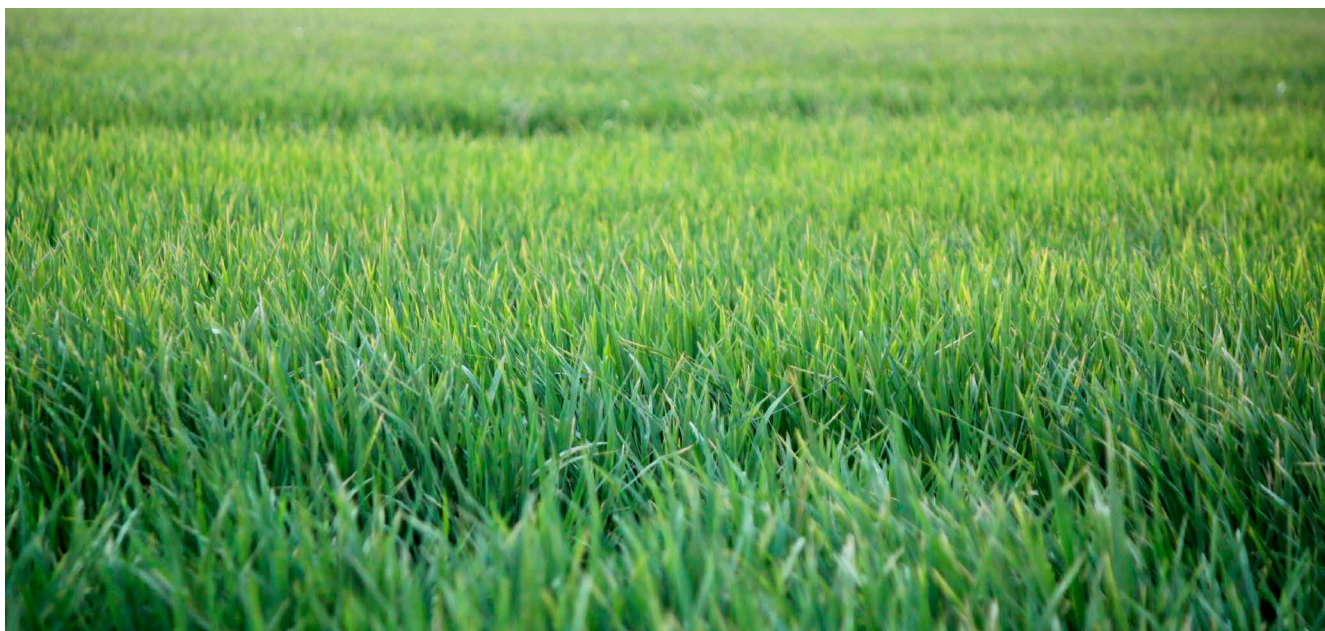
The second chapter provides a brief overview of agricultural policy, at both the domestic and international levels.

Estimates of the level and structure of agricultural support in Trinidad and Tobago and international comparisons are presented in the third chapter of this report. Sub-sector-specific policy measures and transfers are described. A brief description of the value chains for selected commodities is presented as part of the PSE estimates, in order to provide additional insights on the distribution of policy costs and benefits along the value chains and identify situations in which the PSE indicators may reflect characteristics of the value chain that are unrelated to policy.

The report concludes with some recommendations for policy-makers, based on the insights provided by the quantitative analysis conducted.

THE FIRST CHAPTER OF THIS REPORT FOCUSES ON THE ROLE AGRICULTURE PLAYS IN THE ECONOMY, EMPLOYMENT, AND INTERNATIONAL TRADE IN TRINIDAD AND TOBAGO.

1. GENERAL OVERVIEW OF AGRICULTURAL POLICY



1.1. ROLE OF AGRICULTURE IN THE ECONOMY OF TRINIDAD AND TOBAGO

AS THE GOVERNMENT TRIES TO REDUCE THE IMPORT BILL AND DIVERSIFY THE ECONOMY, THE DEVELOPMENT OF AGRICULTURE IS A POLICY PRIORITY

Trinidad and Tobago is a high-income country,¹ with an open economy in which trade plays a very important role (70% of GDP in 2014). The energy sector dominates the economy and trade: Agriculture contributes only 0.5% to GDP, and agri-food's share of total exports is only 2.6%. Agriculture's share of total employment is relatively higher (3.4%) (Table 1). Trinidad and Tobago imports 85% of its food supply.² Although agriculture is not

¹ According to the World Bank classification.

² FAOSTAT, 2011

a major contributor to GDP in the country, the diversification of the economy and the reduction of the food import bill are among the country's development goals. Developing agriculture is therefore included in the country's policy priorities.

TABLE 1: SELECTED MACROECONOMIC INDICATORS, TRINIDAD AND TOBAGO

INDICATOR	UNIT	1996	2010	2015
GDP (CONSTANT 2000 PRICES)	TT\$ MN	37,974.02	91,794.10	94,008.20
GDP GROWTH	%	2.90	3.30	-0.60
GDP PER CAPITA (CONSTANT 2005 US\$)	US\$	6,363.99	14,093.96	14,369.30*
POPULATION	'000 PERSONS	1,258.37	1,310.11	1,349.67
POPULATION IN RURAL AREAS ³	%	90.15	90.91	91.45*
SHARE OF AGRICULTURE IN GDP	%	2.17	0.50	0.50
SHARE OF AGRICULTURE IN EMPLOYMENT	%	9.60	3.70	3.40
AGRI-FOOD EXPORTS (% OF MERCHANDISE EXPORTS)	%	8.21	2.37	2.60
AGRI-FOOD IMPORTS (% OF MERCHANDISE IMPORTS)	%	11.20	11.19	10.95
AGRI-FOOD TRADE BALANCE	US\$ MN	N/A	(461.92)	(486.71)
TRADE (% OF GDP)	% OF GDP	80.63	83.00	70.45*
AGRICULTURAL LAND	SQ. KM	760.00	540.00	540.00**
SHARE OF ARABLE LAND	% OF LAND AREA	7.80	4.87	4.87**
SHARE OF IRRIGATED LAND	% OF AGRIC. LAND	N/A	11.40	9.28***

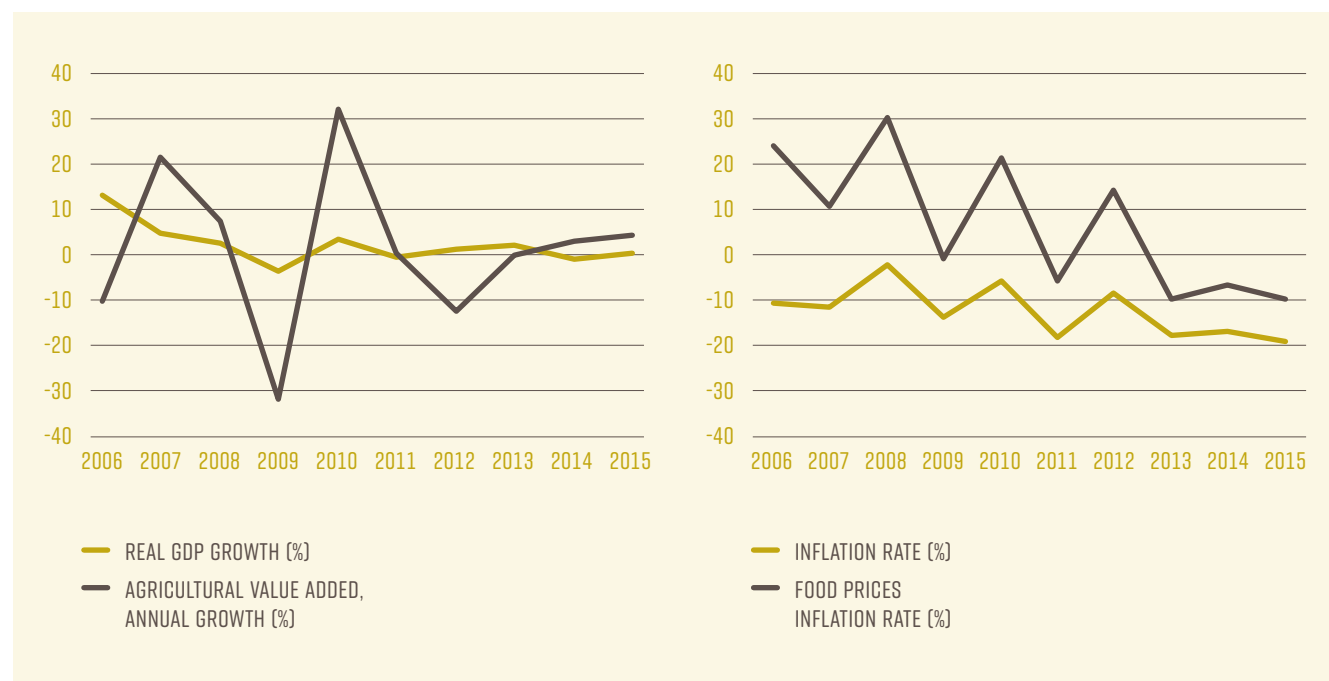
* 2014 ** 2013 *** 2012

Source: CSO, 2016; Central Bank, 2016; WDI, 2016.

³ The World Bank reports that over 90% of the population in Trinidad and Tobago lives in rural areas. However, the 2000 National Census finds quite differently (30%), as it uses a different definition of urban area (World Bank treats only Port-of-Spain (capital), Arima (borough) and San Fernando (town) as urban areas, while the national statistics published by the Central Statistical Office classified areas with a population density of 200 or more people per square kilometer as urban). Only a small portion of the rural population is engaged in agriculture, with the rest either unemployed or employed in food processing, marketing, or non-agriculture related activities (ILO, 2016).

Trinidad and Tobago's economy has recently faced difficulties due to the slowdown in the petroleum sub-sector, making economic diversification even more pressing. Agricultural production is very volatile, shocked by structural changes and climate events (drought in 2010). However, agricultural production has recently been on a path to recovery. Inflation in the country is driven by food prices, which are affected by both international food price inflation and domestic production fluctuations⁴ (Figure 1). Therefore, one of the goals of agricultural policy, as stated in the medium-term policy documents (i.e. National Food Production Action Plan, Medium-Term Policy Framework (MTPF)), is the reduction of food inflation rate.

FIGURE 1: GDP GROWTH, AGRICULTURAL VALUE-ADDED GROWTH (2000=100) AND INFLATION RATE⁵ (%)



Source: Central Bank of Trinidad and Tobago, Trinidad and Tobago. Review of the Economy, various years.

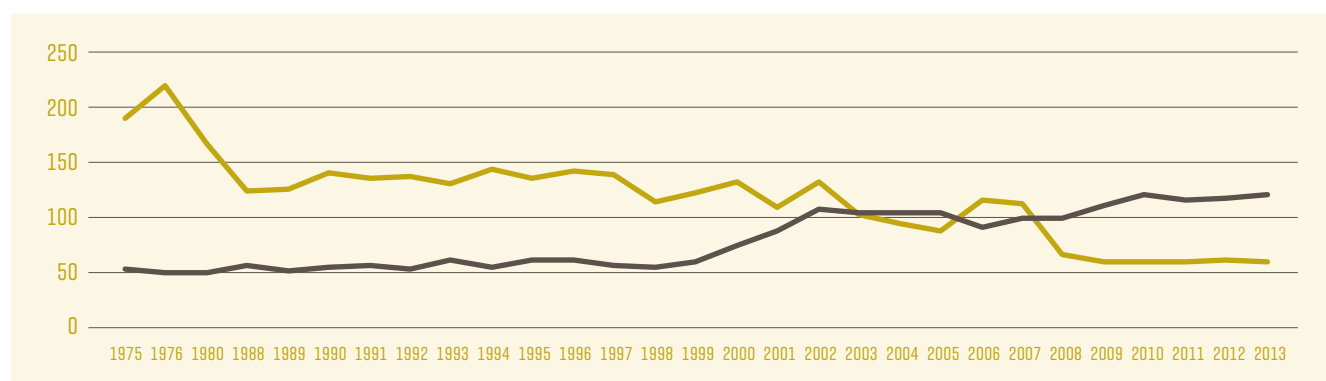
⁴ Contribution of different components to the country's inflation rate was analyzed in the IMF's 2013 staff report. It states that core inflation, which excludes food prices, ranged between 2% and 6% in 2006-2012 (IMF, 2013). Food price inflation is mainly determined by world food prices, but when international prices fall, food prices in Trinidad remain high.

⁵ A recent IMF report suggests that food inflation may have been overestimated, noting that price indices may be corrected in the future (IMF, 2016).

TREND IN CROP PRODUCTION DRIVEN BY SUGAR PRODUCTION DECLINE

Sugar production came almost completely to a halt after 2007⁶ (Figure 2), with remaining exports limited to small quantities, mostly to Caribbean markets rather than the EU. Sugar processing has stopped completely, and sugar is no longer considered a priority for agricultural development. Coconut production has fallen since the 1990s, as it requires new varieties that are disease-resistant and more productive. Coffee and cocoa production has fallen victim to pests, diseases, and inefficient technology, while rice production also declined 90% since the 1990s, due to low productivity.⁷ Praedial larceny⁸ is also responsible for the decline in production of traditional crops. At the same time, production of citrus fruit, tomatoes, root crops and hot peppers have seen promising production growth rates in recent years (see section 3.3 for more detail on these sub-sectors). Livestock production is growing slowly but steadily.

FIGURE 2: CROP AND LIVESTOCK PRODUCTION INDICES FOR TRINIDAD AND TOBAGO



Note: 2004-2006 = 100. Source: WDI, 2016.

— CROP PRODUCTION INDEX (2004-2006 = 100)
— LIVESTOCK PRODUCTION INDEX (2004-2006 = 100)

⁶ The state-owned sugar cane factory Caroni (1975) Ltd was closed in 2003, after which sugar production fell to a third. In 2006, the EU started its ACP sugar regime reform, removing preferential access to EU markets for former colonies, including Caribbean countries. Since the beginning of the reform, which is due to be fully implemented in 2017, it has become apparent that Caribbean countries' sugar subsectors are not competitive without the preferences, as production costs are very high compared to Brazil and other major producers. Some countries have since decided to provide support to their sugar producers in the form of high subsidies (i.e. Barbados), while others have updated sugar production to increase efficiency and partly reoriented it to produce energy (i.e. Jamaica). Two countries—St. Kitts and Nevis and Trinidad and Tobago—decided to abandon sugar production. Sugar Manufacturing Company Limited (the refining company) was closed in April 2010. The only remaining economic activity in the sugar industry is distilling, and subsequent to 2010, agricultural statistics reflect only non-sugar agriculture.

⁷ State-owned Caroni (1975) was a major rice producer, but level of production decreased even before the termination of its activities.

⁸ Praedial larceny: the theft of growing agriculture produce.

MOST FOOD IS IMPORTED; EXPORT OF TRADITIONAL CROPS HAS DECLINED

The significant food import bill (Figure 3⁹) is a constant concern for the government. While Trinidad and Tobago is a net exporter of beverages (including non-alcoholic) and tobacco, the country imports most of its agricultural and food items. Agri-food exporting went through considerable structural changes in the 21st century when exports of traditional commodities such as cocoa, coffee, and sugar declined considerably, as did production of those commodities.

FIGURE 3: AGRI-FOOD TRADE BALANCE (JANUARY-SEPTEMBER), TRINIDAD AND TOBAGO

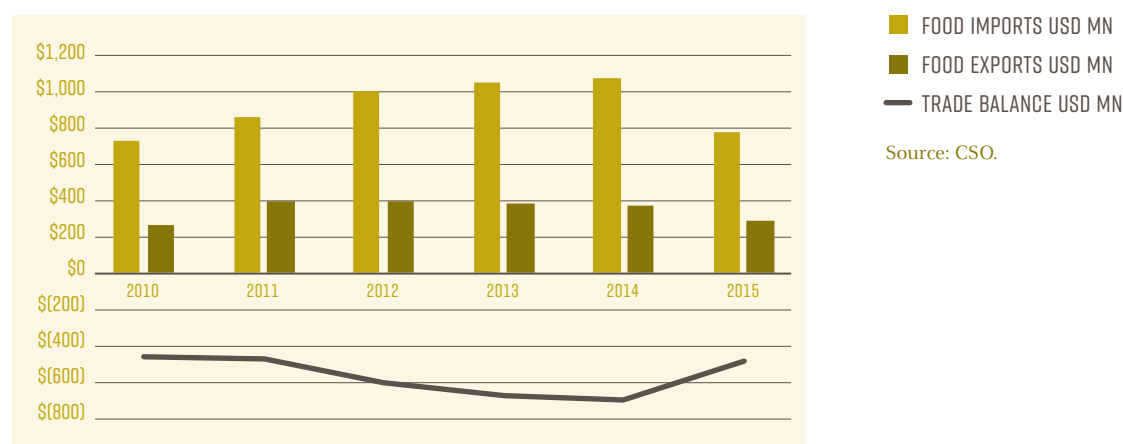
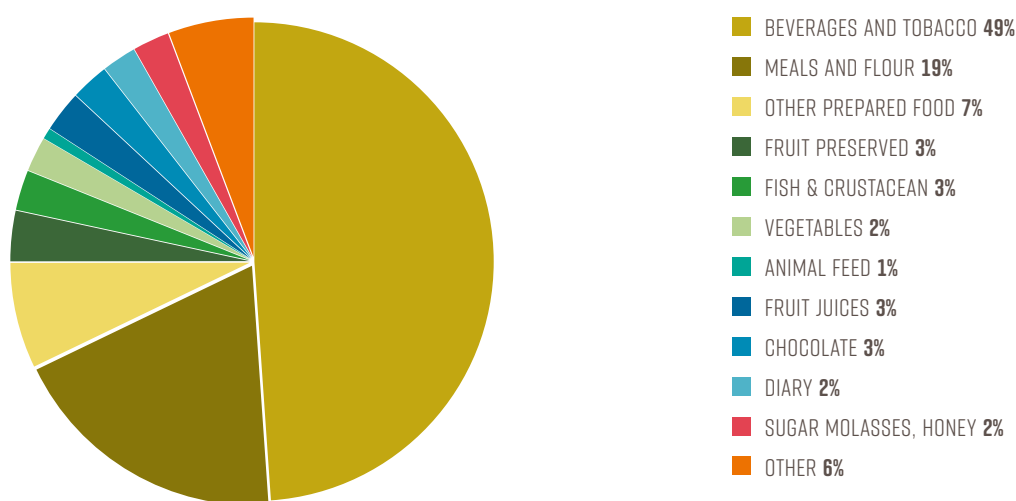


FIGURE 4: AGRI-FOOD EXPORTS IN 2014, TRINIDAD AND TOBAGO

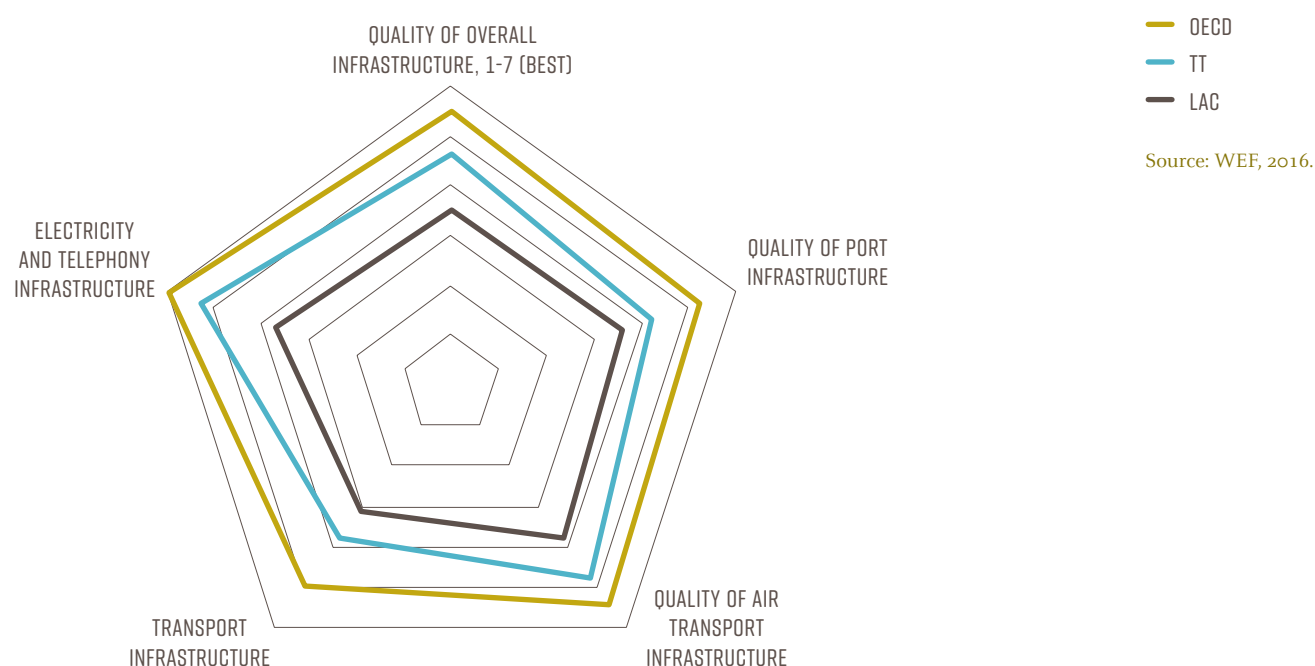


⁹ Agri-food imports in this graph include grains used for animal feed, so in fact the food import bill for human consumption is lower. The GORTT is currently discussing the definition of the food import bill.

DEVELOPED AGRO-PROCESSING INDUSTRY PROVIDES OPPORTUNITIES FOR DEVELOPMENT OF AGRICULTURE

The agro-processing industry, especially manufacturing of beverages like juices and rum, is well developed in Trinidad and Tobago. Food and beverages production is growing and is the largest manufacturing subsector, contributing 4.5% to GDP¹⁰ in 2015. Exports of prepared food and beverages exceed imports. While the agro-processing sector currently relies mostly on imported raw materials, its development opens opportunities for agriculture by expanding demand for the farming sector's production. Thus, the hot pepper and tomato processing industries are emerging and developing links with the farming sector and increasing demand for locally-grown vegetables. Nestlé is also contributing to such links between farmers and their processing facilities by signing contracts with milk producers. Citrus and cocoa processors are also strengthening their links with local farmers, and local cassava is used for animal feed production.¹¹

FIGURE 5: INFRASTRUCTURE DEVELOPMENT INDEX, TRINIDAD AND TOBAGO



¹⁰ In constant 2000 prices. Food, beverage, and tobacco production grew by 6.8% in 2015.

¹¹ The details of these arrangements are discussed in section 3.3.1.

¹² Electricity rates start at US\$0.03/KWh

¹³ UNCTAD World Investment Report 2016

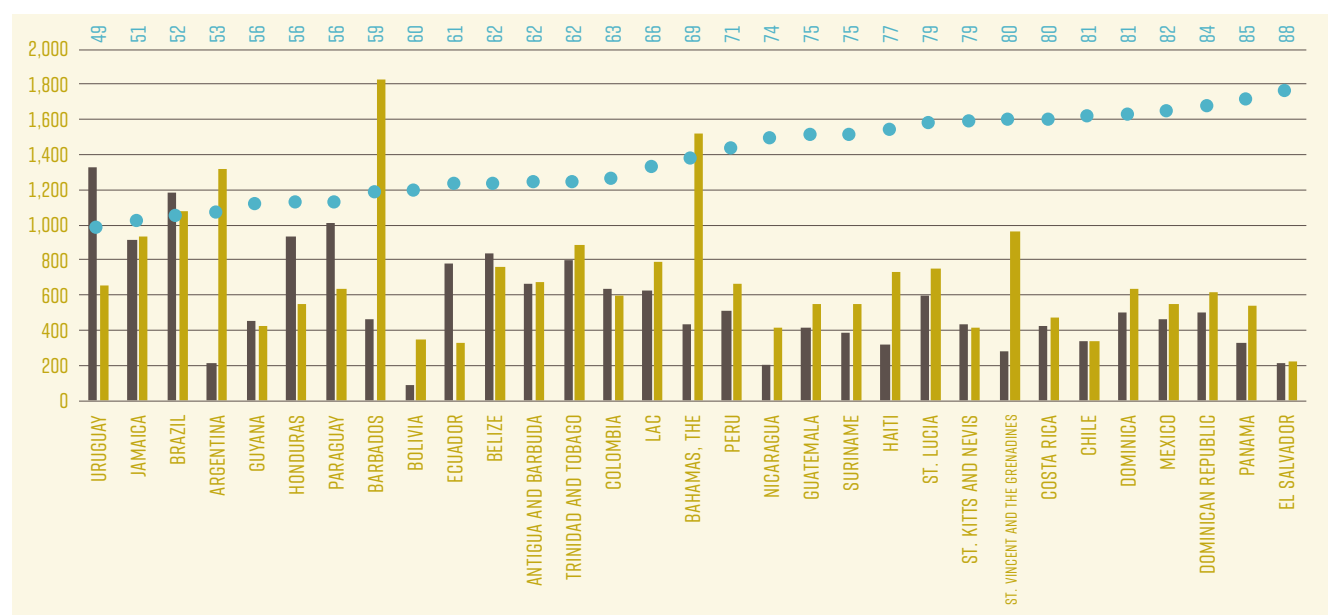
¹⁴ WEF's (World Economic Forum) annual Global Competitiveness Report attempts to evaluate the factors and institutions that determine the productivity of the economy and are responsible for long-term growth.

THE COUNTRY IS ATTRACTIVE FOR INVESTORS DUE TO LOW ENERGY COSTS¹² AND ITS QUALIFIED LABOR FORCE

Trinidad and Tobago attracted nearly 35% of all FDI inflows in the Caribbean in 2015.¹³ However, its position in the Global Competitiveness Index, measured by the WEF,¹⁴ is 89th out of 140 countries in 2015-2016 (WEF, 2016). Overall infrastructure development is estimated at 4.5 out of 7 by the WEF Global Competitiveness Report (WEF, 2016), which is better than the LAC average, but lower than the OECD average of 5.5, placing Trinidad and Tobago in 56th place. This rating reflects the availability of electricity and telephone connections, while road and inter-island sea transport infrastructure development has room for improvement (Figure 5).

Trinidad and Tobago ranks 88 out of 189 economies in the World Bank's Ease of Doing Business (down from the 86th place in 2015) rankings, mainly due to poor contract enforcement, costly construction permits, and time-consuming procedures for paying taxes. It ranks 114 on ease of trading across borders, with a DTF¹⁵ of 62 (Figure 6) and costly import and export procedures, which create additional barriers to trade (World Bank, 2016).

FIGURE 6: COSTS OF TRADE (US\$) AND TRADING ACROSS BORDERS DTF VALUE (RIGHT AXIS)



Source: World Bank, 2016.

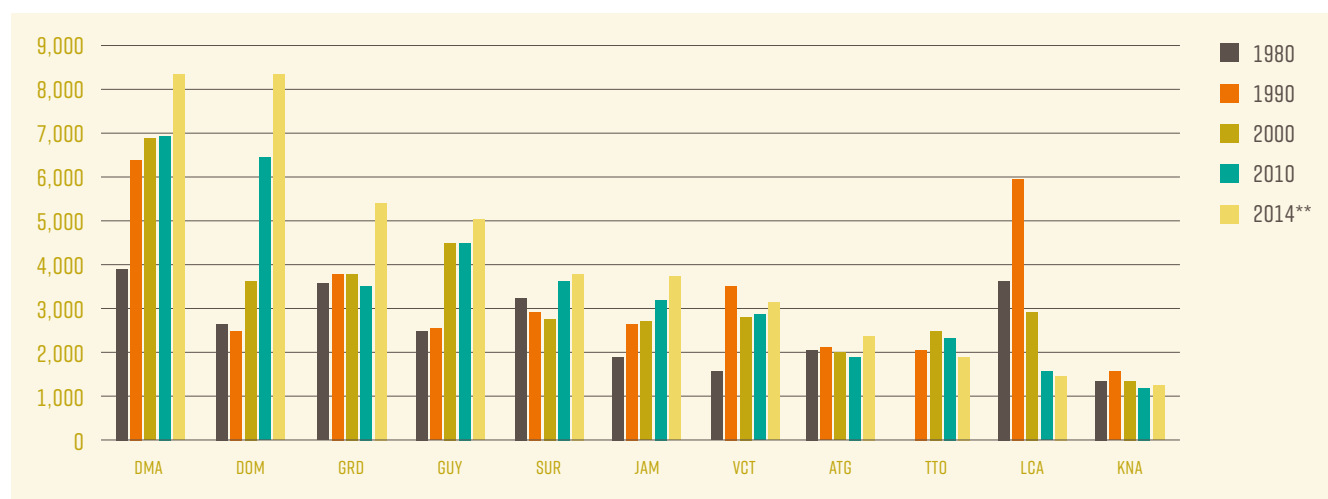
■ COST TO EXPORT (US\$)
■ COST TO IMPORT (US\$)
● DTF

¹⁵ DTF: The distance to frontier score is an estimate of the level of regulatory performance of the country/region on a scale from 0 to 100, where 0 represents the worst performance and 100 represents the "frontier"—the best performance (World Bank, 2014). The DTF of trading across borders reflects a combination of costs and time required for exports and imports.

AGRICULTURAL PRODUCTIVITY REMAINS LOW

Agricultural productivity is one of the major factors contributing to growth and competitiveness of the sector. Agricultural value-added per worker and per hectare are lower than the LAC average, as is productivity of specific sub-sectors, especially traditional ones like rice and cocoa production, as well as non-traditional ones like root crops, (Figure 7, Figure 8).

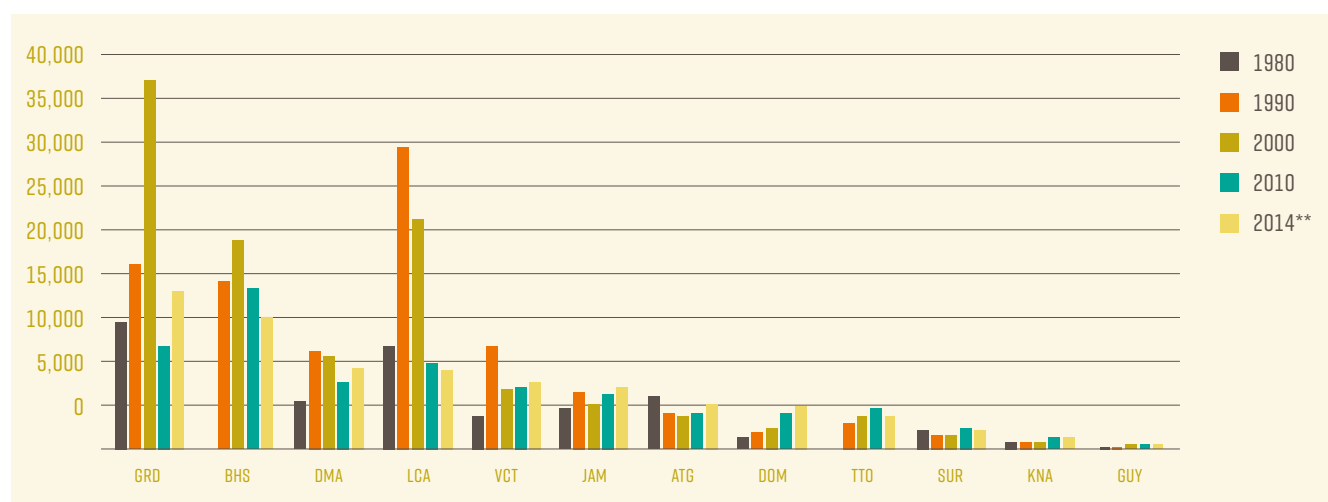
FIGURE 7: AGRICULTURE VALUE ADDED PER WORKER FOR SELECTED COUNTRIES OF THE CARIBBEAN REGION, CONSTANT 2005 (US\$)



* GRD - Grenada, BHS - Bahamas, DMA - Dominica, LCA - St. Lucia, VCT - St. Vincent and the Grenadines, JAM - Jamaica, ATG - Antigua and Barbuda, DOM - Dominican Republic, TTO - Trinidad and Tobago, SUR - Suriname, KNA - St. Kitts and Nevis, GUY - Guyana.

** Guyana, Suriname and Trinidad and Tobago - 2013. Source: calculated from WDI.

FIGURE 8: AGRICULTURE VALUE ADDED PER 1 HECTARE OF ARABLE LAND FOR SELECTED COUNTRIES OF THE CARIBBEAN REGION, CONSTANT 2005 (US\$)



* GRD - Grenada, BHS - Bahamas, DMA - Dominica, LCA - St. Lucia, VCT - St. Vincent and the Grenadines, JAM - Jamaica, ATG - Antigua and Barbuda, DOM - Dominican Republic, TTO - Trinidad and Tobago, SUR - Suriname, KNA - St. Kitts and Nevis, GUY - Guyana.

** Guyana, Suriname and Trinidad and Tobago - 2013. Source: calculated from WDI, 2016.

1.2. CHALLENGES FACING THE AGRICULTURAL SECTOR

Agricultural production and productivity in Trinidad and Tobago are constrained by the following challenges:

LAND RIGHTS UNCERTAINTY

While the government invests a lot of resources in establishing land rights, and improvements have been made, the performance of land registration and cadastral information systems is still insufficient (IDB, 2016). Trinidad and Tobago was ranked 151 out of 189 countries on ease of registering property (World Bank, 2016). In 2016, 3,000 applicants were awaiting issuance of agricultural leases, and some of them had been waiting for as long as 15 years. Squatting remains a major land rights issue, with the number of squatting families estimated as high as 200,000.¹⁶

LACK OF ACCESS TO CAPITAL

This issue is connected to the previously mentioned land rights issue. Due to the absence of land titles, it is very difficult for farmers to provide collateral and obtain credit.

FARM THEFT, OR PRAEDIAL LARCENY

In the 2004 Agricultural Census, farmers cited praedial larceny as their greatest challenge. The Praedial Larceny Squad was formed in 2013 to address the issue. However, no report on its impact is available.

LOW COMPETITIVENESS

Only 10.56% of the two islands' land area is agricultural land. Although efficient use of this limited resource is therefore very important, agriculture productivity remains low (as shown in section 1.1). According to the 2004 Agricultural Census, 87.1% of holdings were smaller than 5 hectares, with 22.0% less than 0.5 hectares. They therefore cannot benefit from economies of scale, which is one of the reasons driving production costs up.

¹⁶ According to MALF acting permanent secretary, Joy Persad-Myers: presentation at the 2nd Public Meeting of the Joint Select Committee on Land and Physical Infrastructure, held on Tuesday May 03, 2016 (<http://www.ttparliament.org/documents/news/mrCECDD7.PDF>)

Additionally, because of land rights uncertainty and praedial larceny, farmers have few incentives to innovate and invest in more productive crop varieties. Certain infrastructure deficiencies increase costs along the value chain.

CLIMATE CHANGE AND NATURAL DISASTERS

As small islands, Trinidad and Tobago is particularly susceptible to the adverse effects of climate change. Rising temperatures and sea levels affect soil quality and increase frequency of pest and disease outbreaks, as well as natural disasters, droughts and floods in particular. According to the 2004 Agricultural Census, 33.6% of agricultural land is subject to flooding. Drought toward the end of 2009 and beginning of 2010 led to bush fires that destroyed the 2010 citrus and cocoa harvests. Climate risk adaptation or mitigation actions have not been a part of agricultural policy, but the government provides flood damage compensation to farmers (see section 3.3.2).

SMALL SIZE OF MARKET

The Global Competitiveness Report gives Trinidad and Tobago's market size a score of 3 out of 7, and ranks it 102 out of 140 countries (WEF, 2016). Therefore, production increases in most sub-sectors will have to be tied to expanding exports, making international competitiveness crucial.

LACK OF INFRASTRUCTURE

According to the IDB¹⁷, 26% of the roads in Trinidad and Tobago were in poor or critical condition in 2011. Irrigation infrastructure, drainage systems, warehouses and other post-harvest facilities are among the weaknesses in Trinidad and Tobago's infrastructure. Institutional infrastructure, such as access to financing, also remains an issue. The government recognizes inadequate and weak infrastructure and increased transaction costs as issues¹⁸, and serious efforts are being made to address them (see section 2.3.2). Road construction and inter-island sea transportation remain among the priorities in the government's long-term plans.¹⁹

¹⁷ IDB, 2011.

¹⁸ Agricultural Planning Division, 2006.

¹⁹ Vision 2030 (GOTT 2016).

1.3. STRATEGIC OBJECTIVES OF AGRICULTURAL POLICY, MAIN DOCUMENTS AND IMPLEMENTING INSTITUTIONS

AGRICULTURE AND FOOD SECURITY ARE AMONG THE FIVE MID-TERM PRIORITY DEVELOPMENT AREAS

Mid-term goals for the development of Trinidad and Tobago were set in the 3-year Medium-Term Policy Framework (MTPF), issued in October 2011 for the 2011-2014 period, and agriculture and food security were included among the five priority development areas.²⁰ The performance reports analyzing the results achieved under the MTPFs are being published annually. The next mid-term strategic document, Vision 2030 for 2016-2030, points to modernization of agriculture as a crucial factor for the economy's international competitiveness. The 3-years public sector investment program outlines public investments in agriculture.

MID-TERM PRIORITIES LEAD TO THE STRATEGIC PLAN, WHICH IN TURN DETERMINES PROPOSED BUDGET ALLOCATIONS

The Ministry of Agriculture, Land and Fisheries (MALF²¹) prepared a strategic plan in line with medium-term development objectives and with assistance from FAO and IICA. It proposes annual budget allocations based on this plan.

²⁰ These five priority areas include: 1. Crime and Law and Order; 2. Agriculture and Food Security; 3. Health Care Services and Hospitals; 4. Economic Growth, Job Creation, Competitiveness, Diversification and Innovation; and 5. Poverty Reduction and Human Capital Development.

²¹ In 2010-2015 also named: Ministry of Food Production; Ministry of Food Production, Land and Marine Affairs; Ministry of Agriculture, Land and Marine Affairs.

POLICY GOALS ADDRESS PRODUCTION RATHER THAN PRODUCTIVITY AND PROFITABILITY

Main mid-term policy goals in the period of study included:

- Food bill reduction.
- Food inflation control.
- Increase of agricultural production.
- Increase of employment in agriculture.

The policy goals for the sector have not changed since 2002 (the earliest available policy document), despite changing economic conditions. Increase in the share of agriculture in GDP remains the main performance indicator for agricultural policy.²² As the country is now preparing a new mid-term planning document, it is worth noting that the goals set for the period ended in 2015 were not reached, partly because both agricultural production and employment trends depend on factors that are beyond the potential impact of agricultural policy, as they are a natural consequence of structural transformation of the economy.²³ Instead, areas of potential policy impact, such as agricultural sector profitability, sustainability, and competitiveness, despite being mentioned in the MALF's subsector-specific plans, were not among policy priorities. None of the mid-term strategic documents propose any actions for the sector's modernization, market integration, or technological advancement.

POLICY ACTIONS INCLUDE SUPPORT FOR NOT ONLY GENERAL SERVICES, BUT ALSO FOR PRODUCTION AND MARKETING

The National Food Production Action Plan 2012-2015, called "Agriculture Now," lists actions to achieve the four mid-term goals listed above and to ensure food security. MALF aimed to increase self-sufficiency in 22 commodities, grouped in 6 subsectors (staples, vegetables, fruits, aquaculture, livestock, and pulses). In addition, cocoa and honey were named as strategic crops due to their export potential.

²² This share reflects the structural transformation of the economy and is not a good indicator of the agricultural policy's impact.

²³ Structural transformation: the decreasing share of agriculture in the economy and employment when both the economy and agriculture are experiencing growth (World Bank, 2008).

The actions proposed by this mid-term plan include provision of general services, such as research, including development of new crop varieties, infrastructure development, and assistance with marketing and promotion (through NAMDEVCO). Actions also include services to individual farmers, such as training and extension, and the introduction of new technologies. General services and services to individual farmers address two of the major challenges faced by agriculture: low competitiveness and lack of infrastructure (transportation, irrigation and drainage and post-harvest facilities).

At the same time, for some commodities, proposed actions include increasing acreage under cultivation or simply increasing production (implying the government would be involved in establishing the farms). While these actions may be feasible as policy objectives, they would be better achieved by stimulating the private sector, rather than direct intervention in areas within the private sectors' production choices.

MALF SHARES AGRICULTURAL POLICY IMPLEMENTATION DUTIES WITH OTHER MINISTRIES

MALF is responsible for agricultural policy and suggests actions and budgets aimed at attaining agricultural policy goals. MALF's Veterinary Service and Plant Quarantine Service is responsible for implementing pest and animal disease control, respectively.

For some time, the Ministry of Housing, Land and Marine Affairs managed land issues, fisheries and forestry, while the Ministry of the Environment and Water Resources was responsible for irrigation and water management. By 2016, most of the agriculture, water management, forestry and fishery policies and programs were financed by the MALF's budget. The Ministry of Planning and Development is responsible for the 2015-2016 subsidies for sugar cane farmers. The Ministry of Health, Chemistry, Food & Drugs is responsible for implementing and enforcing food safety legislation. The Tobago House Assembly is responsible for the agricultural development of Tobago, including efficient use of land and marine resources and marketing of agricultural products. The Central Statistical Office cooperates with NAMDEVCO and MALF on collection and distribution of agricultural information.

PARASTATALS PLAY AN IMPORTANT ROLE AND ARE FINANCED BY TRANSFERS FROM THE MALF'S RECURRENT BUDGET

Trinidad and Tobago's system of governance for agriculture is characterized by the direct involvement of the GORTT in agricultural production and trade. There are three parastatal organizations: 1) The Cocoa and Coffee Industry Board; 2) The Agricultural Society of Trinidad and Tobago; and 3) the National Agricultural Marketing and Development Corporation. All three have their own budgets, financed mainly by transfers from MALF's recurrent budget. The Livestock and Livestock Products Board is a department within MALF.

The Estate Management and Business Development Company was created to develop state-owned agricultural land and land owned by former state-owned sugar cane producer Caroni (1975) Ltd. It develops and distributes plots of land to former Caroni workers for agricultural and non-agricultural use.

In pursuing its objective of increasing agricultural production, GORTT set up several large state-owned commercial farms, producing mostly fruits and vegetables (see 2.1.4).

The State-owned and private companies working closely with MALF to provide support to farmers are listed in Table 2.

**THERE ARE 3 PARASTATAL ORGANIZATIONS:
1) THE COCOA AND COFFEE INDUSTRY BOARD; 2) THE AGRICULTURAL SOCIETY OF TRINIDAD AND TOBAGO; AND 3) THE NATIONAL AGRICULTURAL MARKETING AND DEVELOPMENT CORPORATION. ALL 3 HAVE THEIR OWN BUDGETS.**

TABLE 2: STATE-OWNED AND MALF-AFFILIATED COMPANIES

INSTITUTION	FUNCTIONS
STATE AGENCIES AND STATE-OWNED COMPANIES	
ADB – AGRICULTURAL DEVELOPMENT BANK	THIS STATE-OWNED BANK, ESTABLISHED IN 1968, PROVIDES FINANCING TO AGRICULTURE AT REDUCED INTEREST RATES (3% - 5%).
ASTT – AGRICULTURAL SOCIETY OF TRINIDAD AND TOBAGO	FOUNDED IN 1839, THIS ORGANIZATION REPRESENTS FARMERS WITH THE GOAL OF INCREASING FOOD PRODUCTION.
CCIB – COCOA AND COFFEE INDUSTRY BOARD CDCTTL – THE COCOA DEVELOPMENT COMPANY TRINIDAD AND TOBAGO LIMITED	ESTABLISHED IN 1962 FOR STATE TRADING OF COCOA. REPLACED BY THE CDCTTL IN 2014. FUNCTIONS: 1) ISSUES PERMITS FOR THE PURCHASE OF COCOA; 2) ISSUES LICENSES TO EXPORT COCOA; 3) SETS COCOA PRICES; 4) GRADES AND INSPECTS COCOA FOR EXPORT; 5) GRANTS PERMITS FOR SECONDARY COCOA PROCESSING.
LLPB – LIVESTOCK AND LIVESTOCK PRODUCTS BOARD	PROVIDES INFORMATION AND ASSISTS IN MARKETING LIVESTOCK PRODUCTS.
NAMDEVCO – NATIONAL AGRICULTURAL MARKETING AND DEVELOPMENT CORPORATION	STATE-OWNED MARKETING ENTERPRISE RESPONSIBLE FOR PROVIDING MARKET PRICE INFORMATION TO FARMERS AND ALL STAKEHOLDERS, AS WELL AS EXPORT PROMOTION. IT IS ALSO DIRECTLY INVOLVED IN MARKETING AGRICULTURAL COMMODITIES.
EMBD – ESTATE MANAGEMENT & BUSINESS DEVELOPMENT COMPANY	FOUNDED IN 2002, PART OF MALF SINCE 2011. RESPONSIBLE FOR DEVELOPING AGRICULTURAL LAND OWNED BY THE STATE, AND FOR ALLOCATING LAND TO FORMER WORKERS OF CARONI (1975) LTD.
SFC – SUGAR CANE FEED CENTRE	RESEARCH AND DEVELOPMENT CENTER FOR LIVESTOCK SUBSECTOR.
NSDSL – NATIONAL SCHOOLS DIETARY SERVICES LIMITED	MANAGES THE SCHOOL NUTRITION PROGRAM. COOPERATES WITH NAMDEVCO AND TTABA TO USE LOCAL VEGETABLES WHERE POSSIBLE. OPERATES UNDER THE MINISTRY OF EDUCATION.
PRODUCERS' ASSOCIATIONS (PRIVATE)	
CGA – COCONUT GROWERS ASSOCIATION	PRIVATE COOPERATIVE FOR COPRA PROCESSING AND PRICE CONTROL. OPERATES A PROCESSING PLANT WITH CONTRACTUAL SUPPLY ARRANGEMENTS WITH FARMERS.
CCGA – CO-OPERATIVE CITRUS GROWERS ASSOCIATION	PRIVATE COOPERATIVE. OPERATES A PROCESSING PLANT WITH CONTRACTUAL SUPPLY ARRANGEMENTS WITH FARMERS.
TTABA – TRINIDAD AND TOBAGO AGRIBUSINESS ASSOCIATION	ESTABLISHED IN 2006 BY THE PRIVATE SECTOR WITH GOVERNMENTAL SUPPORT. PROMOTION, RESEARCH AND DEVELOPMENT SERVICES FOR VALUE-ADDED AGRICULTURAL PRODUCTS.
ORGANIZATIONS AND PROGRAMS CO-FINANCED BY MALF	
NAHFA – NATIONAL AGRICULTURAL HEALTH AND FOOD SAFETY AGENCY	REGULATORY BODY, FORMED TO COORDINATE NATIONAL POLICY WITH REGIONAL AND INTERNATIONAL FOOD SAFETY REQUIREMENTS.
NRWP – NETWORK OF RURAL WOMEN PRODUCERS	FOUNDED IN 1995 TO PROMOTE WOMEN'S BUSINESSES.
4H YOUNG FARMERS CLUB	PROVIDES EDUCATIONAL, ECONOMIC, SOCIAL AND RECREATIONAL ACTIVITIES.

1.4. BUDGET TRANSFERS TO AGRICULTURE

Improving public expenditure management, including through program-based budget and policy impact analysis, may be one of the ways to increase allocation efficiency of budget transfers to agriculture in Trinidad and Tobago. The PSE methodology provides insights into the distribution of budget support between the most distorting and the most efficient programs (see Chapter 3). The deficiencies in the budget planning process may restrict the ability of the MALF to improve the allocation of funds and to monitor its efficiency.

THE BUDGET IS VERY DETAILED, BUT NOT PROGRAM-BASED

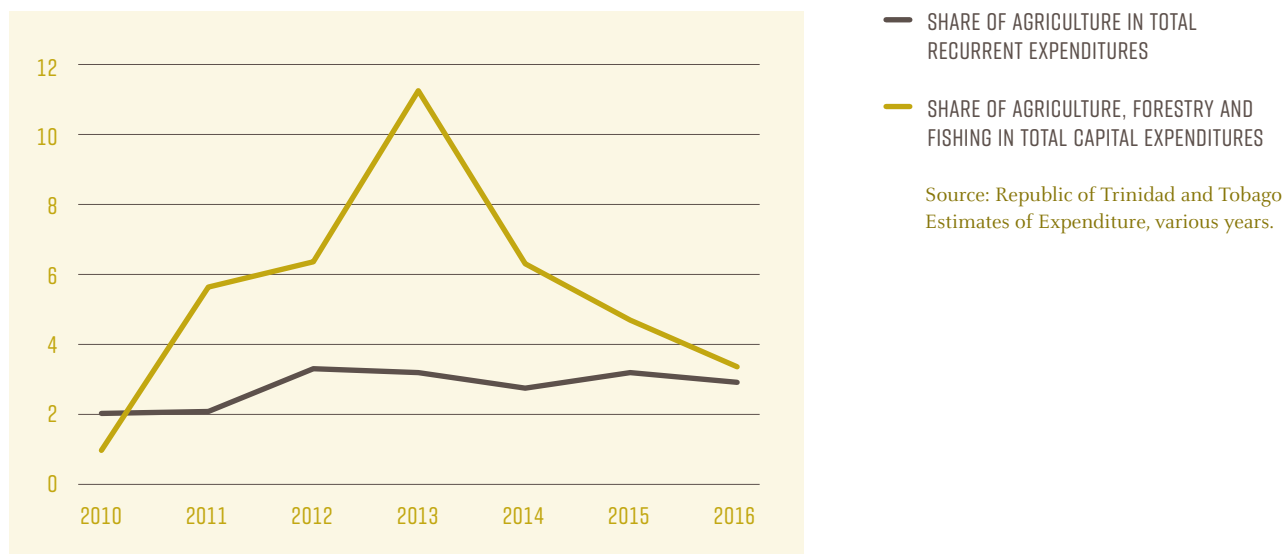
The budget spending in Trinidad and Tobago is divided in two parts: recurrent and capital expenditure. The budget document is very detailed, listing every project managed by the government, which leads to a rigid stricture of expenditures. However, the budgeted programs and projects are mostly extended from year to year and are not driven by the medium-term strategic goals. No monitoring or evaluation of public spending efficiency is published on a regular basis.²⁴ However, evaluation studies for selected projects are conducted from time to time.

Capital expenditures (also called the “development program”) are financed according to the Public Sector Investment Program (PSIP), which is presented for the medium term (2012-2015, 2015-2017) and annually, and through the Infrastructure Development Fund. The Social Sector Investment Programme (SSIP), the plan for social projects’ financing, is also published annually.

HIGH SHARE OF AGRICULTURE IN TOTAL BUDGET EXPENDITURES

The share of transfers to agriculture-related expenditures in the total budget is relatively high, especially considering the limited size of the sector (Figure 9). In agriculture, capital expenditures play a more important role than in total budget expenditures. On average, in 2010-2016, 21% of all budget transfers to agriculture were allocated to capital expenditures, while the share of capital expenditures in the total national budget was only 12%.

²⁴ The accounting audit is performed regularly, but it is presented several years after the end of the budget cycle.

FIGURE 9: SHARE OF AGRICULTURE-RELATED EXPENDITURES IN TOTAL BUDGET EXPENDITURES (%)

2. AGRICULTURAL AND RURAL DEVELOPMENT POLICY



2.1. OVERVIEW OF POLICY PROGRAMS AND ACTIONS

THE POLICY INSTRUMENTS APPLIED IN TRINIDAD AND TOBAGO ARE A COMBINATION OF INPUT SUBSIDIES, GENERAL SERVICES SUPPORT, AND STATE-OWNED ENTERPRISES' ACTIVITIES

Agricultural support policies in Trinidad and Tobago use the following instruments:

- Compensation of production and investment costs (Agricultural Incentive Program).
- Guaranteed minimum prices.
- Subsidized loans (through ADB).
- Training and extension services.
- Investments in infrastructure.

- Research and development.
- Marketing, promotion, and information support (NAMDEVCO).
- Border protection.

Incentives, subsidies and infrastructure development programs are also available for the fisheries sector.

Annual changes to policy actions and investment programs are presented in the budgetary proposals. Within the period of this study, domestic support consisted of several major programs, listed in Table 3 and discussed in more detail in this chapter.

TABLE 3: DOMESTIC SUPPORT PROGRAMS IN TRINIDAD AND TOBAGO, 2010-2015

PROGRAM	DESCRIPTION
AGRICULTURAL INCENTIVE PROGRAM	• COMPENSATION OF COSTS. • GUARANTEED MINIMUM PRICES.
LARGE COMMERCIAL FARMS PROGRAM	• PUBLIC-PRIVATE PARTNERSHIP FOR PARTICIPATION IN AGRICULTURAL ACTIVITIES. • AGRICULTURAL PRODUCTION AT 15 LARGE COMMERCIAL FARMS.
EMPLOYMENT ENCOURAGEMENT PROGRAMS	ENCOURAGING YOUTH PARTICIPATION IN THE AGRICULTURE SECTOR: • YOUTH APPRENTICESHIP PROGRAMME IN AGRICULTURE (YAPA). • FARM VISITS FOR SCHOOLS. • AGRICULTURE PROFESSIONAL DEVELOPMENT PROGRAMME (APDP) FOR GRADUATES. • UNEMPLOYMENT RELIEF PROGRAMME (URP) TRAINING IN AGRICULTURE FOR UNEMPLOYED.
SUPPORT RELATED TO SUGAR PRODUCTION SUSPENSION	• NATIONAL ADAPTATION STRATEGY. • EU ASSISTANCE.
STRENGTHENING OF VALUE CHAINS	• ESTABLISHING AND OPERATING PACKING HOUSES. • ESTABLISHING AND OPERATING WHOLESALE MARKETS FOR AGRICULTURAL COMMODITIES AND FISH. • INFORMATION SUPPORT AND MARKETING BY NAMDEVCO.
SUBSIDIZED LOANS	THE AGRICULTURAL DEVELOPMENT BANK (ADB) OFFERS SHORT- AND LONG-TERM AGRICULTURAL LOANS WITH FLEXIBLE REQUIREMENTS AND TERMS.
RESEARCH AND DEVELOPMENT	INTERNATIONAL AND LOCAL ORGANIZATIONS (CARIBBEAN AGRICULTURAL RESEARCH & DEVELOPMENT INSTITUTE (CARDI), THE UNIVERSITY OF WEST INDIES (UWI), AND THE UNIVERSITY OF TRINIDAD AND TOBAGO (UTT) PROVIDE RESEARCH AND EXTENSION SERVICES FOR AGRICULTURAL PRODUCERS.
INFRASTRUCTURE DEVELOPMENT	AGRICULTURAL ACCESS ROADS AND IRRIGATION INFRASTRUCTURE REHABILITATION AND DEVELOPMENT ARE PART OF ANNUAL INVESTMENT PROGRAMS.

2.2. DOMESTIC POLICY

2.2.1. AGRICULTURAL INCENTIVE PROGRAM

The Agricultural Incentive Program provides grants to investors in targeted subsectors, mostly to stimulate value addition (i.e. processing) and use of machinery in agriculture. The program has not changed since 2011. In 2014, the Incentive Program was extended to large farms. The farmers were eager to participate in the program, and in 2015, 3,390 small farms applied for compensations.²⁵

The program includes capital grants to provide partial compensation for the costs of the following investments:

- Land preparation, purchase of farm equipment and machinery, including irrigation systems, post-harvest and processing facilities, livestock facilities; farm security (percent share of costs with a maximum value limit).
- Soil conservation (100%).
- Establishment and rehabilitation of citrus, coffee, cocoa and coconut farms (100%).
- Pest management (integrated pest management) (50%).
- Importing goats, sheep, pigs for breeding (100%).
- Young farmers' start-up (50%).

The beneficiary breakdown by type of holding, size, or commodities produced, and the breakdown of grants by support for production versus infrastructure development are not available.

MINIMUM GUARANTEED PRICES ARE SET IN THE AGRICULTURAL INCENTIVE PROGRAM

Minimum prices are listed in Table 4. They are set in the Agricultural Incentive Program and are not adjusted for season or year while the program is in effect. The previous minimum prices were set in 2005 and 2009.

²⁵ Over 17% of agricultural holdings (according to the 2004 Census, there were no more recent estimates of the total number of farmers or of the number of farmers potentially eligible to participate in the incentives program).

TABLE 4: GUARANTEED MINIMUM PRICES, IN EFFECT IN 2011-2015

COMMODITY	UNIT	PRICE
COCOA	TT\$/KG	\$19.00
COFFEE	TT\$/KG	\$12.00
RICE GRADE I	TT\$/KG	\$2.99
RICE GRADE II	TT\$/KG	\$2.86
RICE GRADE III	TT\$/KG	\$2.09
RICE SEED	TT\$/KG	\$2.99
MILK	TT\$/KG	\$1.50

Source: MALF, 2011.

Price effects of this program varied by commodity. For cocoa, minimum prices were set according to international prices (see section 3.3.1), and producers were selling their output at those prices. Therefore, this policy's effect on cocoa producers was minimal.

The National Flour Mills (51% state-owned, the rest is publicly traded) purchases all paddy rice from farmers at guaranteed minimum prices and is reimbursed by the GORTT. Minimum guaranteed prices for rice were set considerably higher than world prices, resulting in a high level of support for rice producers (demonstrated by PSCT in section 3.3.1).

2.2.2. NATIONAL ADAPTATION STRATEGY FOR THE SUGAR SUBSECTOR

SECTOR RESTRUCTURING STILL REQUIRES POLICY INTERVENTION

To cope with the loss of preferential access to EU markets, the GORTT decided to abandon sugar production in the country and introduced the National Adaptation Strategy for the Sugar Industry to assist farmers transitioning from sugar production to producing other crops or to non-agricultural activities. The scope of the National Adaptation Strategy (2008) extends beyond the sugar subsector to include infrastructure development measures, water management, strengthening policy making capacity, and

reforms to the incentive program, along with measures to help sugar farmers adaptation and reorient.

The European Union has allocated €75 million in transfers to Trinidad and Tobago since 2007 in the framework of the EU Accompanying Measures for Sugar Protocol Countries (AMSP), of which €66 million had been disbursed as of 2015.

Direct transfers to former sugar cane farmers are part of the EU-financed program, and were mostly distributed between 2007 and 2010. However, in 2015, a TT\$130 million compensation package was issued, of which TT\$22.8 million were disbursed in 2015. This package is to benefit 3,481 cane farmers with a minimum payment of TT\$12,000 per farm.

2.2.3. STRENGTHENING VALUE CHAINS

INVESTMENTS IN MARKET INFRASTRUCTURE ARE FINANCED BY THE PUBLIC BUDGET

Programs for strengthening agricultural value chains, financed through capital budget expenditures, mostly involve actions to develop market infrastructure, such as financing for construction of packing houses. In the framework of the program “Establishment of Small Scale Packing Houses in Agricultural Production,” in 2013, 5 packing houses were established, and the program continued until 2016. The allocation of budget funds for this program is presented in Table 5. Actions to strengthen value chains also include investment in establishing wholesale markets.

TABLE 5: ESTABLISHMENT OF SMALL SCALE PACKING HOUSES FOR AGRICULTURAL PRODUCTION (TT\$ MN)

	2013	2014	2015	2016
BUDGET GRANTS FOR ESTABLISHING PACKING HOUSES	13.0	18.6	9.0	7.0

Source: Republic of Trinidad and Tobago Estimates of Expenditure, various years.

MARKETING AND PROMOTION SERVICES ARE PROVIDED BY NAMDEVCO

Agricultural and fish wholesale markets in Trinidad and Tobago are generally operated by the National Agricultural Marketing and Development Company (NAMDEVCO), while agricultural wholesale

markets in Tobago are managed by the Marketing Division of the Tobago House of Assembly.

NAMDEVCO also provides market information through the National Agricultural Market Information System Trinidad and Tobago (NAMISTT), and services to farmers at all stages of the value chain, from connecting with suppliers of high quality of seedlings to packing houses.

2.2.4. LARGE COMMERCIAL FARMS PROGRAM

THE GOVERNMENT CREATES LARGE-SCALE COMMERCIAL FARMS IN AN ATTEMPT TO INCREASE OUTPUT

The GORTT's attempts to increase available land for agricultural production resulted in the Commercial Large Farms Programme (CLFP), which established large (100-300 acres) agricultural holdings in the form of public-private partnerships. The GORTT provides land rights (mainly for the land previously used for sugarcane production) and the necessary infrastructure (access roads, electricity, drainage), whereas NAMDEVCO purchases output from these enterprises, provides services, and is responsible for marketing and exports.

Twelve commercial farms have been established, including the Caroni Green initiative, which dedicated 320 acres to production of hot peppers, sweet peppers, and tomatoes. However, this enterprise's operations were not economically viable, so production was halted and in 2017 the government decided to close Caroni Green Ltd.

One of the objectives of the large commercial farming program was to significantly reduce the import bill (rice imports in particular) by 2015. However, the increase in rice production the program managed to achieve was not enough to make a noticeable contribution to import substitution: rice production increased from only 1,500 to 2,500 tons,²⁶ compared to domestic consumption of 26,000 tons in 2015.

²⁶ There was no official rice production goal in the CLFP, but the National Food Production Plan for 2012-2015 aimed for rice production of 7,500 tons by 2015.

2.2.5. SUBSIDIZED LOANS

AGRICULTURAL PRODUCERS HAVE ACCESS TO LOANS AT 3%-5% P.A. INTEREST RATE, WHILE THE MARKET RATE IS 7.5%

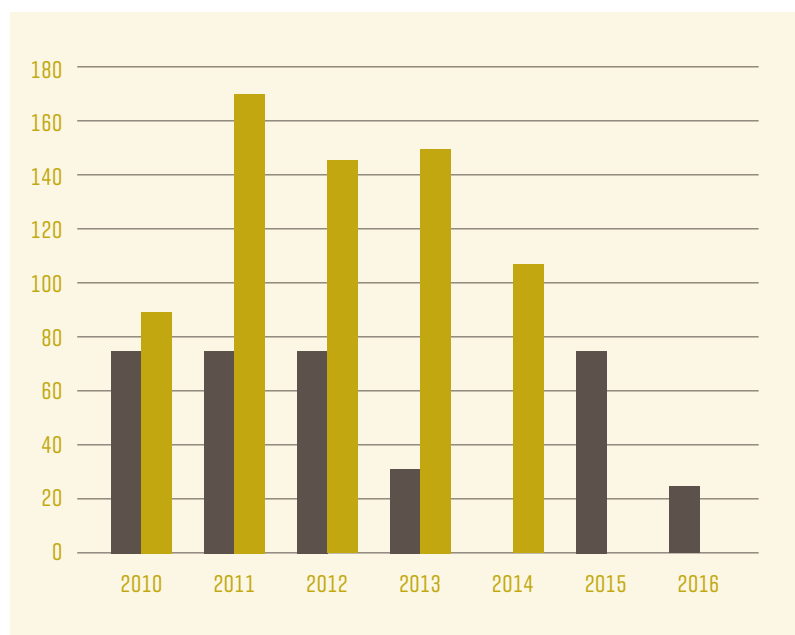
Lending to farmers is provided by the state-owned Agriculture Development Bank of Trinidad and Tobago (ADB). The Bank issues investment loans and short-term loans to farmers in need, and it financially supported MALF initiatives like Caroni Green Ltd, the cocoa subsector revitalization, and infrastructure development. Most investment loans require borrowers to invest 20% of their own capital, with a repayment period of up to 7 years. Lending interest rates²⁷ were reduced in 2012 from 8-11% to 3-5%, which is attractive compared to the market rates of 7.5%.

THE ADB RECEIVES GRANTS FROM THE PUBLIC BUDGET IN FIXED AMOUNTS REGARDLESS OF ITS ACTIVITIES OR PERFORMANCE

The ADB receives annual²⁸ grants from the public budget, the size of which was not tied to any performance analysis or the amount of loans issued. The amounts of the loans disbursed by the ADB was volatile, ranging between 90 TT\$ mn and 170.6 TT\$ mn during the period of study, as demand for loans fluctuated due to a combination of factors, including availability of collateral and financial characteristics of farmers and agro-processors.

²⁷ Effective rates, taking into account compounding and required balance for credit lines.

²⁸ In 2014, there were no budget allocations to the ADB. The annual budget allocations are defined in the budget process. There is no mid-term schedule for the value of the grants, and the Parliament is not required to approve the grants in any given year.

FIGURE 10: GRANTS TO THE ADB FROM THE BUDGET AND LOANS DISBURSED ANNUALLY* (TT\$ MN)

■ TRANSFERS TO ADB

■ LOANS DISBURSED

* Data on loan disbursement for 2015-2016 is not available.

Source: Trinidad and Tobago Annual Report on Performance, various years.

2.3. AGRICULTURAL DEVELOPMENT SUPPORT

2.3.1. RESEARCH AND DEVELOPMENT

RESEARCH AND DEVELOPMENT (R&D) SERVICES INCLUDED OVER 20 DIFFERENT RESEARCH PROGRAMS

The GORTT recognizes the importance of knowledge generation for the long-term development of the agricultural sector. Over 20 different research programs were financed through the MALF's capital expenditure (development) budget during the period of study.

The Research Division of the Ministry of Agriculture generates knowledge for distribution to farmers, provides soil testing, pest/disease alerts, and advisory services. The country also benefits from projects by regional research institutions such as CARDI and the University of the West Indies (UWI).

Innovations in economic activities, including agriculture, are promoted through the Idea to Innovation (i2i) program, which provides grants to projects selected through a competition.

UNIVERSITIES OFFER HIGHER EDUCATION IN AGRICULTURE AND ARE INVOLVED IN R&D

The University of the West Indies (UWI) has a faculty of agriculture that provides advanced agricultural education and training. The University of Trinidad and Tobago (UTT) has programs in agriculture (focused on agricultural and food technology), forestry and marine sciences.

MALF OFFERS MULTIPLE TRAINING PROGRAMS, WHICH ARE IN DEMAND WITH FARMERS²⁹

In 2015, the following training programs were implemented, both for existing farmers and for young people with the goal of increase employment in agriculture:

- The Urban Aquaponics/Agriculture in Schools Initiative.
- The Agriculture Professional Development Programme.
- The Youth Apprenticeship Programme in Agriculture (YAPA).
- The Farmers Registration Programme.
- The Building Farmers Programme.

2.3.2. INFRASTRUCTURE DEVELOPMENT

ACCESS ROAD CONSTRUCTION AND WATER MANAGEMENT ARE AMONG THE GORTT'S PRIORITIES

Several investment projects are ongoing for water supply and flood protection. Market access is another priority investment area, including road construction and investment in post-harvest infrastructure.

The Food Basket roads program was one of the major agricultural infrastructure investments financed from the public funds. The MALF selected about 90 "food baskets" - land areas dedicated to crop production, farmed by single or multiple farmers, and provided additional support in the form of road infrastructure for those areas. However, "food basket" is not formally defined in any legislation, and neither the selection criteria nor a list of

²⁹ According to the Annual Report on Performance, (GORTT, 2012), in 2012, 2,927 farmers benefitted from training programs. Participation was not officially reported in the later years.

the areas receiving support have been made publicly available. In 2014, 44.07 km of roadway (25 roads) were rehabilitated under the Food Basket roads program, improving access to 69 major crop production areas in Trinidad.

WATER SUPPLY REMAINS AN ISSUE, BUT INVESTMENT IS DECREASING

While formally Trinidad and Tobago is not a water scarce country,³⁰ the changing climate requires increased efforts to ensure sustainable water availability, as rising temperatures lead to increased aridity of soils, increasing demand for water.³¹ Agriculture still mostly relies on rain-fed water (only 11% of agricultural land was irrigated;³² agriculture consumes 4% of the public water supply), and supply of water for irrigation remains an issue due to lack of irrigation infrastructure and lack of resources for its operation and maintenance (IDB, 2015). Several infrastructure projects were aimed at ensuring a sustainable supply of water for agriculture.

Thus, The Irrigation and Water Management Flood Control Programme invested in the construction of on-farm irrigation ponds to harvest and provide water for individual farmers. However, the level of investment in irrigation infrastructure decreased during the period of study. Irrigation development also lacks a long-term investment strategy to ensure availability and maintenance of existing irrigation infrastructure for agricultural production.

2.4. AGRO-FOOD TRADE POLICY AND REGULATIONS

TRINIDAD AND TOBAGO PARTICIPATE IN A NUMBER OF TRADE AGREEMENTS

Trinidad and Tobago is a member of CARICOM, where it sends 18.6% of its exports. In an attempt to expand opportunities for exporters, Trinidad and Tobago has signed bilateral Free Trade Agreements with the Venezuela, Colombia, the Dominican Republic,

³⁰ Freshwater (main water source) availability of 2,200 m³/year per person, while the international criterion for water scarcity is less than 1,000 m³/year per person.

³¹ GORTT, 2013.

³² According to the 2004 Agricultural Census, no systematic data on irrigation is collected.

Costa Rica, and Cuba, but exports under those agreement account for under 6% of total exports.³³ Trinidad and Tobago also participates in the Cariforum-EU Partnership Agreement. The Caribbean Basin Initiative with the United States, a main destination for Trinidad and Tobago's exports, was extended to September 30, 2020. A trade agreement is currently being negotiated with Canada.

TRADE POLICY INCLUDES IMPORT TARIFFS AND SURCHARGES

GORTT promotes trade liberalization and open markets. However, agriculture receives more trade protection than the rest of economy. The simple average of the applied import tariff on agricultural goods was 19.4% in 2013, higher than for non-agricultural goods (9.4%). Most agricultural commodities, including those selected for this study, are imported at a tariff of 40% (Common External Tariff rates). The import duty for rice is 25%, while rice for sowing is imported duty-free. Cocoa beans are also imported duty-free. Import duties for small ruminants ranges between 10% and 15%.

TABLE 6: TARIFFS APPLIED BY TRINIDAD AND TOBAGO TO AGRICULTURAL IMPORTS, 2014

DESCRIPTION	# OF LINES	AVERAGE (%)	RANGE (%)	VARIANCE	WTO BOUND AVERAGE RATE (%)
WTO AGRICULTURE	1,028	17.5	0 - 50.7	1.0	90.4
ANIMALS AND PRODUCTS THEREOF	149	22.5	0 - 40	0.7	84.9
DAIRY PRODUCTS	24	11.9	0 - 40	1.0	100.0
COFFEE AND TEA, COCOA, SUGAR, ETC.	172	16.9	0 - 40	0.9	94.6
CUT FLOWERS, PLANTS	48	9.6	0 - 40	1.7	73.5
FRUIT AND VEGETABLES	258	23.8	0 - 40	0.7	96.7
GRAINS	29	14.3	0 - 40	0.9	76.4
OIL SEEDS, FATS AND OILS AND THEIR PRODUCTS	94	16.0	0 - 40	1.2	89.1
BEVERAGES AND SPIRITS	108	21.3	0 - 40	0.6	100.0
TOBACCO	10	35.5	0 - 50.7	0.7	100.0
OTHER AGRICULTURAL PRODUCTS N.E.S.	136	2.8	0 - 40	2.7	81.2
WTO NON-AGRICULTURE (INCL. PETROLEUM)	5,267	6.8	0 - 45	1.5	50.9

Source: WTO 2012.

³³ Trade Policy and Strategy for Trinidad and Tobago, 2013-2017.

TARIFF PLUS SURCHARGE FOR POULTRY LEADS TO HIGH BORDER PROTECTIONS

Some commodities face surcharges (taxes) in addition to import duties. In 2013, in addition to surcharges on fatty livers of geese or ducks (86%), beet sugar (60%), sugar with added color (60%), and icing sugar (75%), a 15% surcharge on poultry meat was introduced.

Meat and dairy importers must obtain permits from MALF. Sanitary permits are required for fresh produce, onions, garlic, potatoes and certain grains.

As an additional support measure for agriculture, starting January 1, 2016, agricultural inputs (including approved vehicles, approved fishing vessels and equipment, and approved chemicals and pest control items) were exempted from all duties and taxes.

NON-TARIFF BARRIERS TO TRADE ARE PART OF TRADE POLICY

Sanitary and phytosanitary (SPS) measures play a more important role for Trinidad and Tobago's international trade than import tariffs. Strengthening and enforcing domestic SPS requirements to a level acceptable to the EU and the US is one of the directions of the trade policy. Currently, Trinidad and Tobago is part of the CARICOM Regional Organization for Standards and Quality (CROSQ) and participates in the Caribbean Agricultural Health and Food Safety Agency (CAHFSA).

FOOD PRODUCTION IS RECOGNIZED AS HAVING A STRONG EXPORT POTENTIAL

The most recent strategic document establishing trade policy actions is the Trade Policy and Strategy for Trinidad and Tobago, 2013-2017 (GORTT, 2013). This document identifies the food and beverages subsector as having strong export potential. Increased competitiveness and regional integration are among the objectives of trade policy. The strategy does not include any provisions regarding primary agricultural production, but includes a list of commodities with the highest potential for export: hot peppers, cocoa, pumpkin, papaya, sweet potato, cassava, herbs and spices, green coconuts, golden apples, rabbits, and tilapia.

2.5. FISCAL POLICY

The income tax rate in Trinidad and Tobago is 25%. There were no tax concessions provided to agriculture in the period of study. However, since 2016, the Land and Building Tax rate for agriculture has been 1%, while for commercial and industrial properties it stands at 5 and 6%. There is a proposal to exempt agri-processing companies that use locally produced materials from income tax starting in 2017.³⁴

³⁴ At least 75% of the ingredients must be produced locally.

3. ANALYSIS OF SUPPORT TO AGRICULTURE



3.1. METHODOLOGY

Application of the PSE methodology developed by the OECD (OECD, 2010) provides a standardized quantitative method of measurement of the support provided to the agricultural sector. It has been officially calculated by the OECD for a series of countries since 1987.

The methodology involves a set of indicators that measure transfers to and from economic agents as a result of agricultural policy. Transfers to agricultural producers that benefit individual farmers or groups of farmers are measured by the PSE, while transfers that benefit the agricultural sector as a whole rather than at the level of individual farmers are measured using the General Services Support Estimate (GSSE). Transfers to the first consumers of agricultural production (agro-processors) are included in the Consumer Support Estimate (CSE). PSE, GSSE, and the budget transfers in CSE are added together to calculate total policy transfers to the agricultural sector, called the Total

Support Estimate (TSE). Single commodity transfers (SCT) estimate the effect of the support policy on individual commodities. PSE, CSE and SCT are often measured in percentage form, as a share of total farm receipts (receipts from output plus the budget transfers); the CSE% measures the share of transfers to (from) consumers in consumption expenditures at farm gate. See Annex 1 for a glossary of the indicators used in this section.

The PSE indicator measures transfers to producers arising from agricultural policy and focuses on two components of support: 1) support to producer prices, measured by Market Price Support (MPS), and 2) support through budget transfers (BT). The price support policy analysis is based on comparison of the observed market conditions with a benchmark situation. The aggregate effect of the policy in the supply-demand model is measured by price ratios in the “with and without” program situation. Thus, output producers’ prices (farm gate prices) are compared with the prices that would be expected if there were no policy interventions, e.g. market equilibrium, or reference prices. The effect of the public policy is measured by the difference between market and reference prices. If the difference between market and reference output prices is positive, policy causes benefits to producers. If negative, policy leads to implicit taxation of the farmers.

The distortions caused by agricultural and trade policy in Trinidad and Tobago were previously evaluated using the PSE methodology by David Orden in 1992. According to this study, PSE for rice³⁵ was at 85%, milk: 65%, and total transfers to producers amounted to TT\$390 mn (IICA, 1994).

The effect of policy was evaluated in 2007 for the cocoa sub-sector by L. Neptune and A. Jacque, and for paddy rice by D. Seecharan and A. Jacque. The Nominal Protection Coefficient (NPC), Effective Protection Coefficient (EPC) and PSE were also calculated. The study revealed that the policies in place by that time were unfavorable for small cocoa farmers because the CCIB did not pass the price it received on international markets to them. The effect of policy was mostly neutral for large farmers. PSE estimates for paddy rice showed that farmers received prices 75%-79% above what they would have obtained in a no-policy intervention situation.

THE EFFECT OF THE PUBLIC POLICY IS MEASURED BY THE DIFFERENCE BETWEEN MARKET AND REFERENCE OUTPUT PRICES. IF THE DIFFERENCE IS POSITIVE, POLICY CAUSES BENEFITS TO PRODUCERS. IF NEGATIVE, POLICY LEADS TO IMPLICIT TAXATION OF THE FARMERS.

³⁵ PSE by commodity was calculated at the time of the previous study. It was replaced by a similar indicator, Producer SCT, in 2005.

3.2. DATA DESCRIPTION

THE CENTRAL STATISTICAL OFFICE WAS THE MAIN DATA SOURCE

The study covers the time period 2010-2015. The Official Central Statistical Office (CSO) was the main source of the data used in the PSE calculations reported in this chapter. CSO provided data on domestic and international prices and production quantities, and volume and values of international trade.

The selection of the exchange rate used in the estimates may have a substantial effect on the PSE results in some countries. While the Trinidad and Tobago currency is considered to be overvalued, according to the IMF it is close to equilibrium level, (IMF, 2013; IMF, 2016) and the extent of overvaluation cannot be quantified. Therefore, the nominal exchange rate was used in the PSE estimates.

Excess feed costs were not calculated because imported corn is the main input in animal feed, and the use of domestically produced crops in livestock production is negligible.

POULTRY DOMINATES IN THE SET OF COMMODITIES

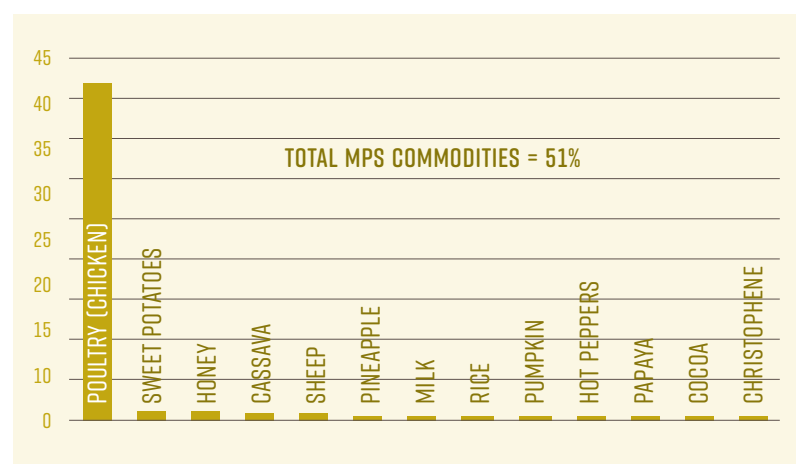
Thirteen commodities were selected for the by-commodity analysis (Figure 11). The total value of commodities selected for the PSE estimate is less than the 70% threshold recommended by the OECD due to lack of data availability, as each commodity other than poultry contributes very little to the total value of agricultural production.

Calendar-year annual quantities and production values for main agricultural commodities are not included in the official, regularly reported statistical data in Trinidad and Tobago. Quantities and values of production for MPS commodities were collected and processed by the Central Statistical Office of Trinidad and Tobago specifically for this study. Within the period of study, the Statistical Office was not able to identify any other commodities with a substantial contribution to the value of production. Eggs, citrus fruits, and tomatoes likely contribute over 1% to the total value of agricultural production, but farm-gate prices for those commodities were not available and could not be collected for the period of this study. Therefore, in the future, the study could

benefit from the expansion of the list of MPS commodities, if the required data becomes available.³⁶

For the purpose of PSE calculations, six products were treated as net exports: hot peppers, pumpkin, papaya, pineapple, christophine and honey (though volumes of trade in honey and christophine were limited); the remaining products were treated as net imports: rice, sweet potatoes, cassava, cocoa, milk, poultry, and sheep.

FIGURE 11: SHARE OF MPS COMMODITIES TO TOTAL VALUE OF AGRICULTURAL PRODUCTION IN TRINIDAD AND TOBAGO, AVERAGE FOR 3 YEARS (2013-2015)



Source: author's estimates based on CSO data.

REFERENCE PRICES WERE ADJUSTED FOR MARKETING MARGINS

Farm-gate prices are average prices received by producers at farm gate level, except for hot peppers, for which wholesale prices are used. This information has been provided by the CSO.

Reference prices were average trade unit value of import for imported commodities and of export for exported commodities. However, alternative sources of reference prices were used if available trade information was not consistent. A marketing margin adjustment was applied to the reference prices to make those prices comparable with domestic prices measured at the farm gate (Table 6).

³⁶ The Central Statistical Office has faced challenges in recent years. It was falling behind in its data collection, and multiple efforts were made to improve its activities. The progress it made in remedying its shortcomings in the statistics was recognized by the IMF in its country report of June 2016 (IMF, 2016). However, the reforms are still in progress.

TABLE 7: REFERENCE PRICE DATA DESCRIPTION AND MARGIN ADJUSTMENTS

COMMODITY	REFERENCE PRICE	SOURCE	MARGIN ADJUSTMENT*
RICE (IMPORTED)	RICE ROUGH, US FOB, NEW ORLEANS	USDA RICE OUTLOOK SERIES ³⁷	ADJUSTED FOR INSURANCE AND FREIGHT FROM US TO TRINIDAD AND TOBAGO, HANDLING AND TRANSPORTATION FROM BORDER TO FARM
SWEET POTATOES (IMPORTED)	BARBADOS CIF IMPORT PRICE FOR 2010, TRINIDAD AND TOBAGO CIF IMPORT PRICE FOR 2011-2015	CSO DATA, AGRIMONITOR DATABASE: COUNTRY DATABASE BARBADOS	ADJUSTED FOR HANDLING, PACKING, TRANSPORTATION COSTS FROM BORDER TO FARM. 2010: ADJUSTED FOR INSURANCE AND FREIGHT FROM BARBADOS TO TRINIDAD AND TOBAGO
CASSAVA (IMPORTED)	FOB EXPORT PRICE FROM BRAZIL, WEIGHTED AVERAGE FOR ALL DESTINATIONS	UN COMTRADE DATA	ADJUSTED FOR INSURANCE AND FREIGHT BRAZIL-TRINIDAD AND HANDLING, PACKING, TRANSPORTATION COSTS FROM BORDER TO FARM
COCOA (IMPORTED)	AVERAGE EXPORT FOB UNIT VALUE, RAW COCOA BEANS	CSO DATA	ADJUSTED FOR HANDLING, PACKING, TRANSPORTATION COSTS AND PORT EXPENSES
MILK (IMPORTED)	IMPLICIT MILK PRICE CALCULATED FROM CIF BORDER PRICES FOR MILK PRODUCTS (SKIM MILK POWDER AND BUTTER) ³⁸	CSO DATA	ADJUSTED FOR TRANSPORTATION AND PROCESSING (AVERAGE MARKETING MARGIN IN FOUR MAJOR PRODUCING COUNTRIES)
POULTRY MEAT (IMPORTED)	AVERAGE CIF IMPORT UNIT VALUE, WHOLE BIRDS ONLY, FROZEN	CSO DATA	ADJUSTED FOR PROCESSING AND HANDLING, TRANSPORTATION FROM BORDER TO FARM
HOT PEPPERS (EXPORTED)	AVERAGE MIAMI AND NEW YORK PRICES OF HOT PEPPERS CARIBBEAN ORIGIN (DR, JM, TT)	AMS TERMINAL MARKET REPORT ³⁹	ADJUSTED FOR AIR FREIGHT TO US, PORT CHARGES, TRANSPORTATION FROM FARM TO BORDER
PUMPKIN (EXPORTED)	AVERAGE FOB UNIT VALUE	CSO DATA	ADJUSTED FOR PORT CHARGES, TRANSPORTATION FROM FARM TO BORDER
PAPAYA (EXPORTED)	AVERAGE FOB UNIT VALUE	CSO DATA	ADJUSTED FOR PORT CHARGES, TRANSPORTATION FROM FARM TO BORDER
SHEEP MEAT (IMPORTED)	AVERAGE CIF IMPORT UNIT VALUE	CSO DATA	ADJUSTED FOR HANDLING AND PROCESSING COSTS
CHRISTOPHINE (EXPORTED)	AVERAGE FOB UNIT VALUE	CSO DATA	ADJUSTED FOR PORT CHARGES, TRANSPORTATION FROM FARM TO BORDER
PINEAPPLE (EXPORTED)	AVERAGE FOB UNIT VALUE	CSO DATA	ADJUSTED FOR PORT CHARGES, TRANSPORTATION FROM FARM TO BORDER
HONEY (EXPORTED)	AVERAGE FOB UNIT VALUE	CSO DATA	ADJUSTED FOR PORT CHARGES, TRANSPORTATION FROM FARM TO BORDER

³⁷ <https://www.ers.usda.gov/publications/?page=1&seriesCode=RCS>

³⁸ The methodology is described in the OECD PSE Manual (OECD, 2011)

³⁹ <https://www.marketnews.usda.gov/mnp/fv-report-config-step1?type=termPrice>

In accordance with the OECD methodology, negative price gaps for imported commodities were set to zero if they were considered to reflect factors other than agricultural policies.

BUDGETARY SUPPORT INFORMATION WAS OBTAINED FROM THE ESTIMATE OF EXPENDITURES DOCUMENTS

Budget expenditure allocations to the categories and subcategories according to PSE/GSSE methodology was based on actual 2010-2016 budget allocations as presented in the Details of Estimate of Expenditures for the analyzed years. Budgetary support data includes the budgets of the MALF, Tobago House Assembly, Ministry of Housing, Land and Marine Affairs (in the years when relevant expenditures were not included in the MALF's budget), Ministry of Rural Development and Local Government and statutory bodies (NAMDEVCO, Agricultural Society of Trinidad and Tobago, Cocoa and Coffee Industry Board).

Budget statements, public investment programs, and other documents were used to identify the most precise category for each budget line. The classification of budget expenditures by PSE and GSSE categories differs from the classification of the expenses in the budget documentation of Trinidad and Tobago. That is, in budget documentation (capital expenditure section), the budget line "Research and Development" includes some allocations to inspection services and some non-agricultural spending, and was classified accordingly in GSSE. Where the purpose of the spending was unclear from the available documents, the expenditure was classified according to the available budget classification. If different types of expenditures were financed by a single budget line without details provided, the expenditure was allocated to the subcategory for which the majority of spending took place.

Support to agro-processing, forestry, fishery, non-agricultural purposes and administrative costs were excluded from the PSE/GSSE calculation according to the PSE methodology. However, administrative expenditures closely linked to providing services to agriculture, such as salaries of the inspection officers, were included. Climate change related expenditures are included in the GSSE, M. Miscellaneous category. Rural development expenditures were included only if they were mainly benefiting agricultural producers, and not the general rural population, according to the general principle of the PSE methodology.

NAMDEVCO's information system development and the development of agricultural sector plans and documents were included in the institutional infrastructure development transfers.

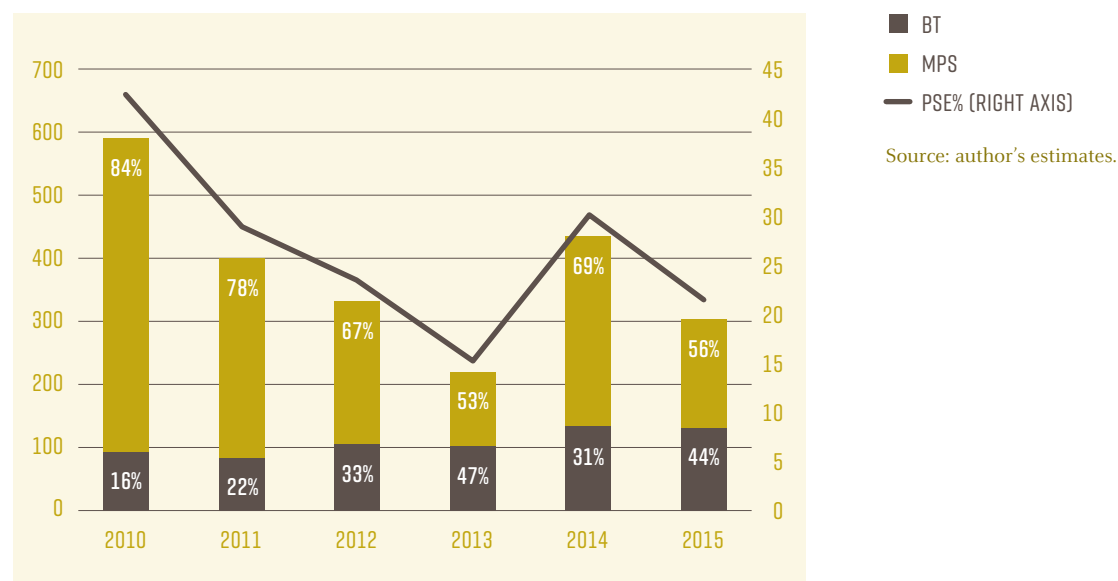
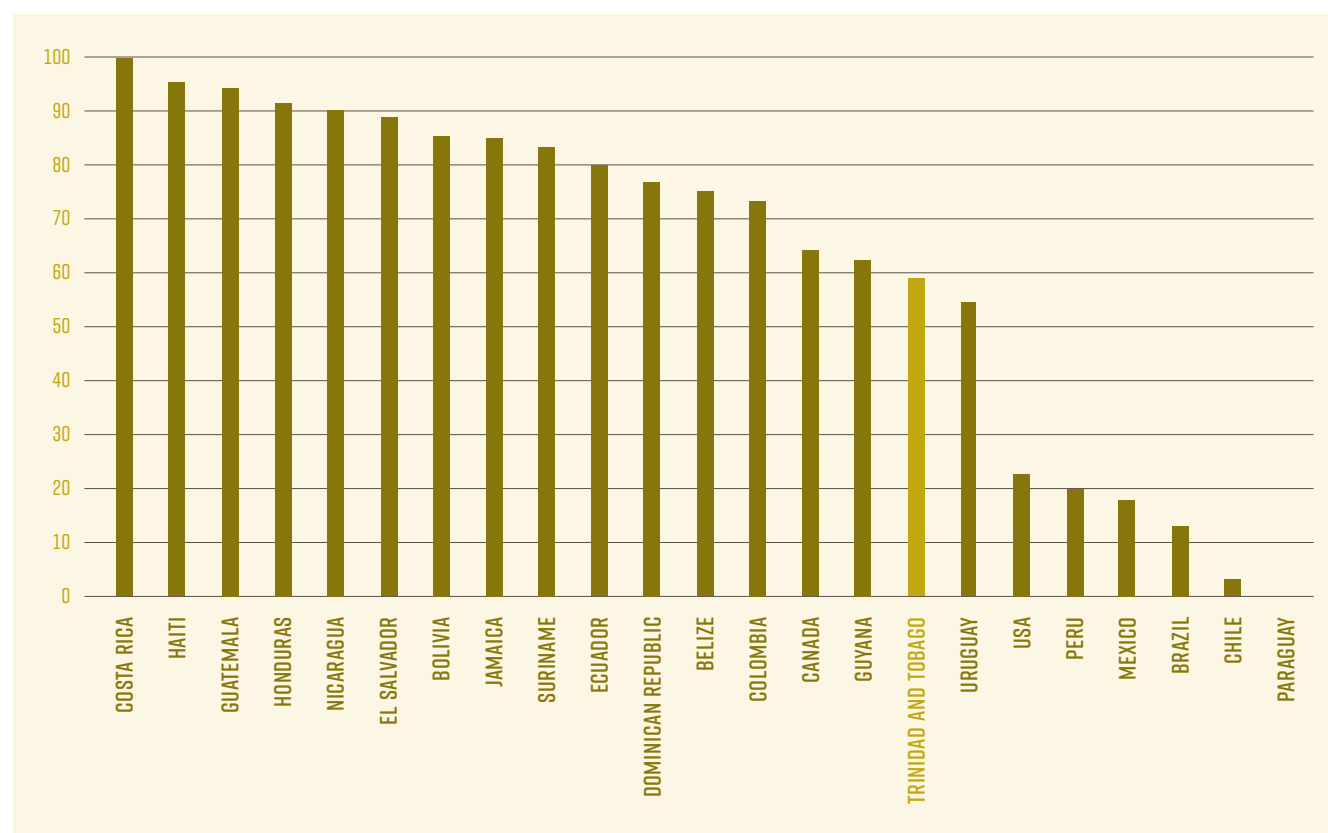
Transfers to support agro-processing were not included in the estimates unless they were aimed at facilities required to use a majority of locally produced agricultural commodities.

3.3. RESULTS: LEVEL AND STRUCTURE OF SUPPORT TO PRODUCERS

The PSE or value of the transfers farmers in Trinidad and Tobago received as a result of agricultural support policy was, on average, 22.4% of gross farm receipts in the latest 3 years of the study (2013-2015) (Figure 12). The role of MPS in total support to producers (PSE), was less important than in most Latin American and Caribbean countries (Figure 13), but still accounted for more than half of PSE.

While changes in PSE were driven by changes in market price support (MPS), there was an increase in budget transfers (BT) to agricultural producers individually. Budget transfers played an increasingly important role in the value of support (the BT share was on average 21% of PSE in 2010-12, and 41% in 2013-2015). Transfers to agricultural producers individually resulting from agricultural policy, as measured by PSE, reached TT\$304 million, or US\$47 million in 2015 (Table 7).

Market price support was the most potentially distorting component of PSE, as this type of support directly affects production decisions. Further reducing this most distorting type of support and replacing it with measures to support long-term productivity will contribute to the sector's international competitiveness.

FIGURE 12: PRODUCER SUPPORT ESTIMATE COMPOSITION IN TRINIDAD AND TOBAGO, 2010-2015 (TT\$ MN)**FIGURE 13: MPS AS A % SHARE OF PSE IN TRINIDAD AND TOBAGO AND OTHER COUNTRIES, AVERAGE VALUE FOR 2013-2015 (%*)**

* Uruguay 2011-2013; Costa Rica, Ecuador, and Honduras 2010-2012; El Salvador 2011-2012; Guatemala 2009-2011; Nicaragua 2009-2010; Bolivia 2008-2009; Jamaica, Argentina, Belize, and Suriname 2012-14. Source: author's estimates.

TABLE 8: SUPPORT ESTIMATE IN TRINIDAD AND TOBAGO, 2010-2015 (TT\$ MN)

DESCRIPTION	UNIT	2010	2011	2012	2013	2014	2015
1. TOTAL VALUE OF PRODUCTION (AT FARM GATE)	MN TT\$	1,301.67	1,294.59	1,309.09	1,339.33	1,302.27	1,267.87
1.1. OF WHICH, SHARE OF MPS COMMODITIES (%)	%	56.12	50.35	50.15	50.57	50.25	52.08
2. TOTAL VALUE OF CONSUMPTION (AT FARM GATE)	MN TT\$	2,409.07	2,601.71	2,283.56	2,485.47	2,378.03	2,054.21
2.1. VALUE OF CONSUMPTION (FARM GATE): STANDARD MPS COMMODITIES	MN TT\$	1,351.87	1,310.03	1,145.09	1,256.82	1,195.07	1,069.84
3.1. PRODUCER SUPPORT ESTIMATE (PSE)	MN TT\$	593.84	400.60	334.47	220.91	436.69	304.37
A. SUPPORT BASED ON COMMODITY OUTPUTS	MN TT\$	498.39	313.33	225.29	116.25	300.78	170.53
A1. MARKET PRICE SUPPORT	MN TT\$	498.39	313.33	225.29	116.25	300.78	169.53
RICE	MN TT\$	2.35	2.69	1.87	2.11	2.72	4.10
SWEET POTATOES	MN TT\$	2.42	0.07	5.78	7.30	10.42	10.19
CASSAVA	MN TT\$	0.10	-	-	-	-	-
COCOA	MN TT\$	1.21	0.18	0.75	0.36	0.27	0.43
MILK	MN TT\$	-	-	-	-	-	-
POULTRY (CHICKEN)	MN TT\$	252.71	157.66	93.21	28.50	117.78	54.69
HOT PEPPERS	MN TT\$	(0.82)	(5.55)	(3.78)	(5.29)	(1.25)	(3.40)
PUMPKIN	MN TT\$	4.29	(9.36)	(0.84)	(3.35)	(3.35)	(1.65)
PAPAYA	MN TT\$	2.35	(1.96)	2.04	2.22	2.30	(0.04)
SHEEP	MN TT\$	4.18	4.20	4.02	10.26	2.96	5.48
CHRISTOPHINE	MN TT\$	2.18	2.11	1.71	6.61	2.92	2.04
PINEAPPLE	MN TT\$	1.06	3.44	2.63	4.02	5.68	2.97
HONEY	MN TT\$	7.66	4.27	5.56	6.04	10.72	13.48
NON-MPS COMMODITIES	MN TT\$	218.72	155.56	112.32	57.46	149.62	81.24
A2. PAYMENTS BASED ON OUTPUT	MN TT\$	-	-	-	-	-	1.00
B. PAYMENTS BASED ON INPUT USE	MN TT\$	71.44	69.06	99.21	99.53	92.34	90.04
B1. VARIABLE INPUT USE	MN TT\$	10.02	0.54	0.80	-	5.51	5.51
B2. FIXED CAPITAL FORMATION	MN TT\$	34.31	35.64	66.39	57.03	49.10	37.05
B3. ON-FARM SERVICES	MN TT\$	27.11	32.88	32.02	42.50	37.73	47.48
C. PAYMENTS BASED ON CURRENT A/AN/R/I, PRODUCTION REQUIRED	MN TT\$	18.61	14.69	9.67	3.83	9.44	17.00
C1. BASED ON CURRENT RECEIPTS/INCOME		18.61	14.69	9.67	3.83	9.44	17.00
D. PAYMENTS BASED ON NON-CURRENT A/AN/R/I, PRODUCTION REQUIRED	MN TT\$	-	-	-	1.00	33.83	3.70
E. PAYMENTS BASED ON NON-CURRENT A/AN/R/I, PRODUCTION NOT REQUIRED	MN TT\$	-	-	-	-	-	22.80
G. MISCELLANEOUS PAYMENTS	MN TT\$	5.40	3.51	0.30	0.30	0.30	0.30
3.2. PERCENTAGE PSE	%	42.50	28.99	23.58	15.30	30.36	21.70

Source: author's estimates.

TABLE 8: SUPPORT ESTIMATE IN TRINIDAD AND TOBAGO, 2010-2015 (TT\$ MN)

DESCRIPTION	UNIT	2010	2011	2012	2013	2014	2015
4. GENERAL SERVICES SUPPORT ESTIMATE (GSSE)	MN TT\$	151.40	188.13	227.07	257.76	239.55	254.49
H. AGRICULTURAL KNOWLEDGE AND INNOVATION SYSTEM	MN TT\$	28.34	31.06	40.79	35.27	32.70	33.59
H1. AGRICULTURAL KNOWLEDGE GENERATION	MN TT\$	23.61	26.13	33.71	27.47	27.41	26.66
H2. AGRICULTURAL KNOWLEDGE TRANSFER	MN TT\$	4.73	4.94	7.09	7.80	5.29	6.93
I. INSPECTION AND CONTROL	MN TT\$	2.40	8.10	7.13	7.14	2.04	1.81
I1. AGRICULTURAL PRODUCT SAFETY AND INSPECTION	MN TT\$	-	0.10	1.00	1.87	0.70	1.31
I2. PEST AND DISEASE INSPECTION AND CONTROL	MN TT\$	2.40	8.00	6.13	5.27	1.34	0.50
I3. INPUT CONTROL	MN TT\$	-	-	-	-	-	-
J. DEVELOPMENT AND MAINTENANCE OF INFRASTRUCTURE	MN TT\$	77.11	98.34	119.98	166.85	157.05	162.99
J1. HYDROLOGICAL INFRASTRUCTURE	MN TT\$	8.12	15.44	16.20	16.03	3.90	3.10
J2. STORAGE, MARKETING AND OTHER PHYSICAL INFRASTRUCTURE	MN TT\$	12.65	21.96	36.71	61.93	77.19	84.06
J3. INSTITUTIONAL INFRASTRUCTURE	MN TT\$	56.34	60.93	67.07	88.88	75.96	75.83
K. MARKETING AND PROMOTION	MN TT\$	38.55	46.52	53.33	43.03	44.43	53.15
K1. COLLECTIVE SCHEMES FOR PROCESSING AND MARKETING	MN TT\$	1.20	1.15	3.40	3.26	3.90	4.40
K2. PROMOTION OF AGRICULTURAL PRODUCTS	MN TT\$	37.35	45.37	49.93	39.77	40.54	48.75
M. MISCELLANEOUS	MN TT\$	5.00	4.11	5.83	5.46	3.32	2.95
5.1. CONSUMER SUPPORT ESTIMATE (CSE)	MN TT\$	(291.71)	(639.50)	(420.47)	(386.48)	(549.92)	(357.82)
O. TRANSFERS TO PRODUCERS FROM CONSUMERS (-)	MN TT\$	(491.39)	(325.46)	(229.29)	(120.78)	(302.88)	(176.12)
TRANSFERS TO PRODUCERS FROM CONSUMERS OF WHICH, MPS COMMODITIES	MN TT\$	275.75	163.88	114.98	61.07	152.21	91.72
P. OTHER TRANSFERS FROM CONSUMERS (-)	MN TT\$	(355.12)	(314.23)	(191.37)	(266.00)	(247.32)	(181.90)
OTHER TRANSFERS FROM CONSUMERS OF WHICH, MPS COMMODITIES	MN TT\$	199.28	158.23	95.96	134.51	124.29	94.74
Q. TRANSFERS TO CONSUMERS FROM TAXPAYERS	MN TT\$	0.40	0.20	0.20	0.30	0.28	0.20
Q.1. COMMODITY SPECIFIC TRANSFERS TO CONSUMERS	MN TT\$	0.40	0.20	0.20	0.30	0.28	0.20
5.2. PERCENTAGE CSE	%	(12.11)	(24.58)	(18.41)	(15.55)	(23.13)	(17.42)
5.3. CONSUMER NAC	MN TT\$	1.14	1.33	1.23	1.18	1.30	1.21
6. TOTAL SUPPORT ESTIMATE (TSE)	MN TT\$	745.64	588.92	561.74	478.96	676.51	559.06
S. TRANSFERS FROM CONSUMERS	MN TT\$	846.51	639.70	420.67	386.78	550.20	358.02
T. TRANSFERS FROM TAXPAYERS	MN TT\$	254.25	263.46	332.45	358.18	373.63	382.94
U. BUDGET REVENUES (-)	MN TT\$	(355.12)	(314.23)	(191.37)	(266.00)	(247.32)	(181.90)
TSE%	%	0.53	0.36	0.34	0.28	0.39	0.34

Source: author's estimates.

While Trinidad and Tobago's agricultural sector is relatively small, budget and price support for it amounted to a relatively significant share of gross farm receipts. Even though this percent share, measured by PSE%, has been trending down in recent years, it is among the highest in the region and higher than in the EU (slightly), US, and Canada (Figure 14).

Similarly, a high PSE% is observed in other Caribbean countries, such as Jamaica and Barbados, but the PSE% is lower (slightly above 10%) in Suriname, Belize, and the Dominican Republic.

FIGURE 14: PSE% IN TRINIDAD AND TOBAGO AND OTHER COUNTRIES, AVERAGE VALUE FOR 2013-2015*



* Dominican Republic and Uruguay 2011-2013; Argentina, Costa Rica, Ecuador, and Honduras 2010-2012; El Salvador 2011-2012; Guatemala 2009-2011; Nicaragua 2009-2010; Bolivia 2008-2009; Jamaica, Barbados (preliminary), Belize, and Suriname 2012-14.
Source: author's estimates.

3.3.1. SUPPORT TO PRODUCERS BY COMMODITY

Support to producers individually and by commodity is measured by the Producers Single Commodity Transfer (SCT), which, like the PSE, consists of market price support and budget support (MPS and BT).

THE POULTRY SUBSECTOR RECEIVES THE HIGHEST AMOUNT OF TRANSFERS. FOR OTHER SUBSECTORS, THE SCT% IS HIGHER

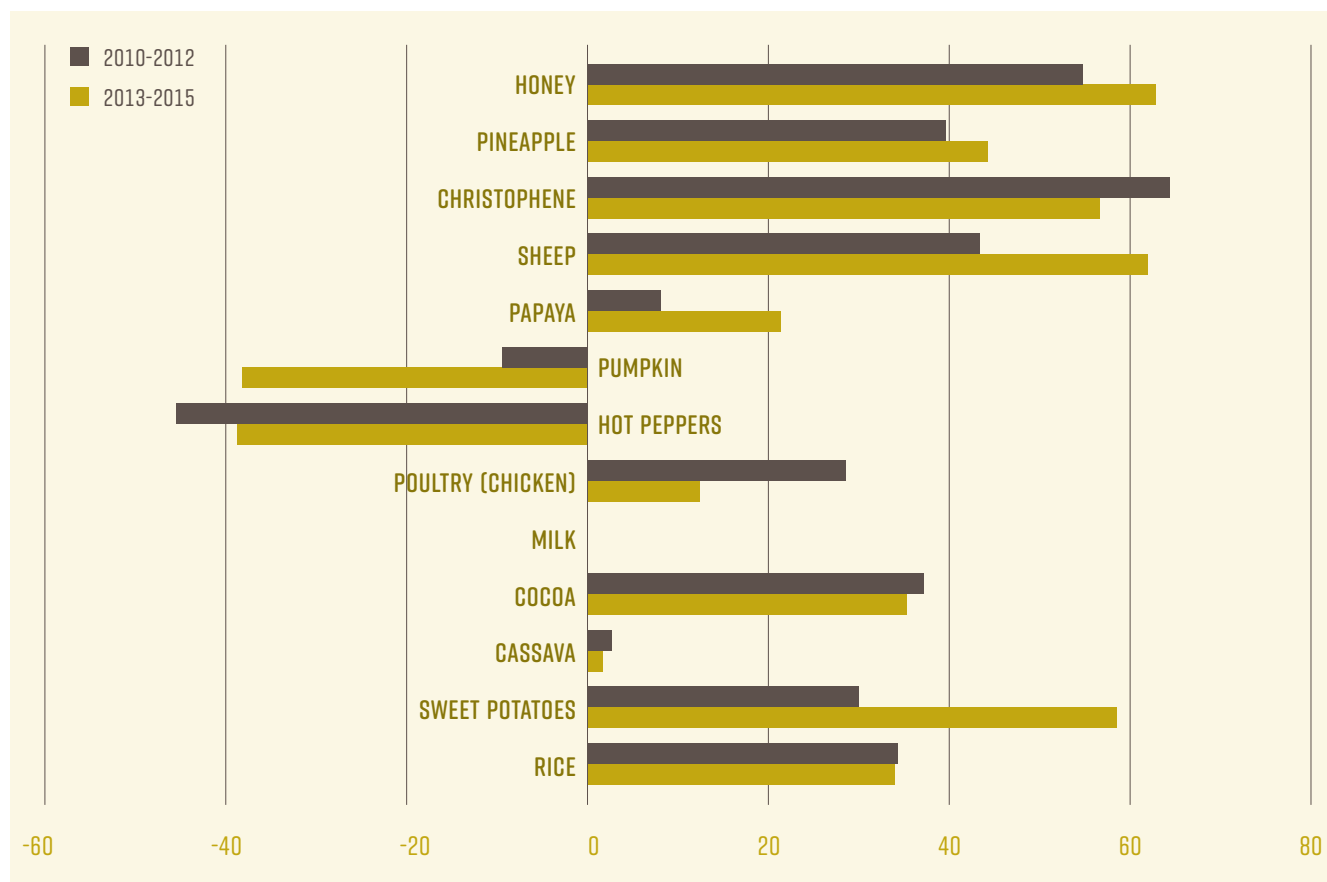
Support to producers in the form of market price support in Trinidad in Tobago mainly consists of support for the poultry subsector (Figure 14), due to this subsector's overwhelming contribution to the gross value of agricultural output. High levels of protection to the poultry subsector is a common trend among the Caribbean countries. At the same time, support to poultry is moderate if considered as a percent share of its farm receipts, and other commodities receive higher support as a share of their gross receipts (SCT%, see Figure 15).

Although it still accounts for the majority of transfers to producers, support to poultry decreased considerably during the study period, while support for other livestock commodities (sheep meat and honey) increased. Commodity-specific support was mostly provided in the form of price support. The budget transfers to individual producers were provided for groups of commodities or all agricultural commodities, and therefore were not reflected in the individual commodities' SCT values. Subsector-specific budget transfers played an important role only in support for the cocoa subsector, and to some extent in support for hot peppers and cassava.

TABLE 9: COMPONENTS OF PRODUCERS SINGLE COMMODITY TRANSFER IN TRINIDAD AND TOBAGO. MARKET PRICE SUPPORT AND BUDGET TRANSFERS BY COMMODITY (TT\$ MN) 2010-2015.

		2010		2011		2012		2013		2014		2015	
CROPS		MPS	BT	MPS	BT	MPS	BT	MPS	BT	MPS	BT	MPS	BT
RICE	IMPORTED	2.4	0.0	2.7	0.0	1.9	0.0	2.1	0.0	2.7	0.0	4.1	0.0
SWEET POTATOES	IMPORTED	2.5	0.0	0.1	0.0	5.8	0.0	7.3	0.0	10.4	0.0	10.2	0.0
CASSAVA	IMPORTED	0.1	0.4	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2
COCOA	IMPORTED	1.2	3.5	0.2	4.1	0.8	3.0	0.4	3.4	0.3	4.0	0.4	2.0
HOT PEPPERS	EXPORTED	-0.8	0.2	-5.5	0.1	-3.8	0.1	-5.3	0.1	-1.3	0.1	-3.4	0.0
PUMPKIN	EXPORTED	4.3	0.0	-9.4	0.0	-0.8	0.0	-3.3	0.0	-3.4	0.0	-1.6	0.0
PAPAYA	EXPORTED	2.3	0.0	-2.0	0.0	2.0	0.0	2.2	0.0	2.3	0.0	0.0	0.0
CHRISTOPHINE	EXPORTED	2.2	0.0	2.1	0.0	1.7	0.0	6.6	0.0	2.9	0.0	2.0	0.0
PINEAPPLE	EXPORTED	1.1	0.0	3.4	0.0	2.6	0.0	4.0	0.0	5.7	0.0	3.0	0.0
LIVESTOCK		MPS	BT	MPS	BT	MPS	BT	MPS	BT	MPS	BT	MPS	BT
MILK	IMPORTED	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
POULTRY (CHICKEN)	IMPORTED	252.7	0.0	157.7	0.0	93.2	0.0	28.5	0.0	117.8	0.0	54.7	0.0
SHEEP	IMPORTED	4.2	0.0	4.2	0.0	4.0	1.0	10.3	6.0	3.0	0.0	5.5	0.0
HONEY	EXPORTED	7.7	0.0	4.3	0.0	5.6	0.0	6.0	0.0	10.7	0.1	13.5	0.2

Source: author's estimates.

FIGURE 15: PRODUCERS SINGLE COMMODITY TRANSFER IN TRINIDAD AND TOBAGO, AVERAGE 2010-2012 AND 2013-2015 (%)

Source: author's estimates.

Results of the commodity-specific policy analyses are summarized in Table 9 and discussed in more detail in the following subsections. The leftmost column in table 10 includes the general services that benefit producers in the subsectors analyzed in order to provide a general picture of the policy applicable to each commodity. Most of the subsectors analyzed benefitted to some extent from general services, including research and extension, packing houses and other post-harvest infrastructure, promotion, and information. However, general services benefit agricultural sector as a whole, and therefore, transfers to each individual subsector cannot be quantified and are thus not reflected in SCT estimates by commodity. General services are measured by the GSSE and discussed in section 3.3.3.

TABLE 10: COMMODITY-SPECIFIC POLICY IN TRINIDAD AND TOBAGO

POLICY	COMMODITY-SPECIFIC SUPPORT	SUBSECTOR CHARACTERISTICS
RICE SUBSECTOR - Guaranteed prices set above international levels, benefitting rice producers. - Subsidized fixed inputs. - General services.	- MPS positive during the whole period of study and increased in 2015. - Guaranteed prices on average 50% higher than they would be without policy intervention. - No product-specific budget support. - Rice farmers were supported at the expense of consumers.	- Production volume is increasing, but in 2015 it was only one third that of 1995. 90% of consumption is imported. - Yields are lower than those of other Caribbean producers.
ROOT CROPS SUBSECTOR - Stimulating demand through incorporating cassava into the school menu. - Support to research and development. - Promotion measures to encourage substitution of imported grains with local cassava.	- SCT-related policy effect positive for sweet potatoes farmers: prices about two times higher than in a non-policy intervention situation. - SCT-related policy effect nearly neutral for cassava farmers: no price support, budget transfers to the Tobago program for development of the cassava industry.	- Production increased significantly. - Measures to increase productivity and improvement of post-harvest management is recommended.
COCOA SUBSECTOR - Minimum guaranteed prices set at levels close to international prices. - Investment grants: 100% of the costs of cocoa establishment or rehabilitation and 10% of the costs of establishment of cocoa fermentation facilities. - Marketing and exports by the state company. - Research and development services.	- Neutral price support (MPS close to 0, prices follow international trends). - Positive budget transfers. - Total level of support (SCT%) amounts to 35% of gross farm receipts on average in 2012-2015.	- Production fell significantly. - Yields are very low.
HOT PEPPER SUBSECTOR - Subsidized loans from ADB. - Investment grants: subsidized machinery and investments in on-farm irrigation. - Value chain support: packing houses. - Public-private partnerships for production: the state-owned Caroni Green Limited was a major producer and exporter. - Research and development services. 40% import tariff for fresh peppers and a 20% tariff for pepper sauce.	- Hot pepper SCT was negative, indicating implicit taxation. - There are obstacles to price transmission along the value chain (costly export procedures).	- Highly profitable subsector. - High productivity.
PUMPKIN SUBSECTOR - Subsidized inputs: machinery, technical assistance. - General services: infrastructure (roads, water supply). - Duty-free imports of inputs since 2016. - Support to the value chain: packing houses that collect and store commodities, marketing infrastructure (wholesale markets).	- Pumpkin SCT was negative in most years, indicating implicit taxation. - Negative effect of the policy on export crop farmers is caused by the direct involvement of the government in the production and marketing of those crops: government-owned companies are slow to react to market signals, and increased output drives prices down. - At the same time, low prices contribute to international competitiveness.	- Highly profitable subsector. - High productivity.

TABLE 10: COMMODITY-SPECIFIC POLICY IN TRINIDAD AND TOBAGO

POLICY	COMMODITY-SPECIFIC SUPPORT	SUBSECTOR CHARACTERISTICS
OTHER EXPORT CROPS • Incentives to producers for pest management, support to post-harvest infrastructure development. • Investments in infrastructure. • Research and development support for productivity improvement and production sustainability.	• Pineapple and christophine producers were supported by the price policy (positive MPS). • Part of the large price gap may indicate underdeveloped infrastructure. • Support was provided at the expense of domestic consumers.	• Production is growing. • Productivity needs to be addressed.
DAIRY SUBSECTOR • Guaranteed prices: farmers supply milk to Nestlé Trinidad and Tobago Ltd, under contractual arrangements at prices established by the government. • Research and development services. • Same-day loans for milk farmers from ADB in cooperation with Nestlé Trinidad and Tobago. • An import tariff of 40% for fresh milk imports; the tariff on milk powder imports is only 5%.	• Minimum prices for milk were lower than the actual farm-gate prices received by producers. • Negative price gap for milk was set to zero as it was considered to be reflecting non-policy effects along the value chain. • No budget transfers specific for milk producers in the period of study.	• Production is declining. • Productivity is very low.
LIVESTOCK SUBSECTOR • The livestock subsector is a major beneficiary of knowledge generation and transfer services. • The government invests in forage farms and breeding centers. • Imported poultry receives an import tariff of 40%, in addition to which a 15% surcharge was levied in 2013.	• Poultry and small ruminants producers were supported by policy. • Price support to poultry producers was the single most important component of national MPS. • Average prices received by the poultry producers were stable despite the volatility of international prices. • The level of protection was moderate as a percent share of gross farm receipts (the highest share was 41% in 2010, and in 2013 it was only 5%), but substantial in absolute terms. • The level of support to sheep producers, provided both in the forms of price support (MPS) and budget transfers, reached an average of 62% of total farm receipts in 2013-15.	• Poultry imports are declining and production is stable. • Small ruminants production is expanding, but the export volume is negligible.
APICULTURE SUBSECTOR • Investment subsidies. • Subsidized loans. • Services to farmers: training in new technologies, and marketing assistance. • Tariff on imports (40%).	• Honey SCT was high (63% of gross farm receipts in 2013-15).	• Export expansion requires quality certification.

Source: author's compilation.

3.3.1.1. RICE SUBSECTOR POLICY ANALYSIS

POLICY INCLUDED GUARANTEED PRICES, SUBSIDIZED FIXED INPUTS, GENERAL SERVICES

Policy goals for the rice subsector, according to the Agriculture Now plan,⁴⁰ are to significantly increase production and substitute imports. Actions for support to rice producers included guaranteed purchase of the crop at fixed guaranteed prices set above international levels, benefitting rice producers. The consumer (The National Flour Mills) pays for purchased rice but is compensated by the government, so it is taxpayers who ultimately finance this support measure.

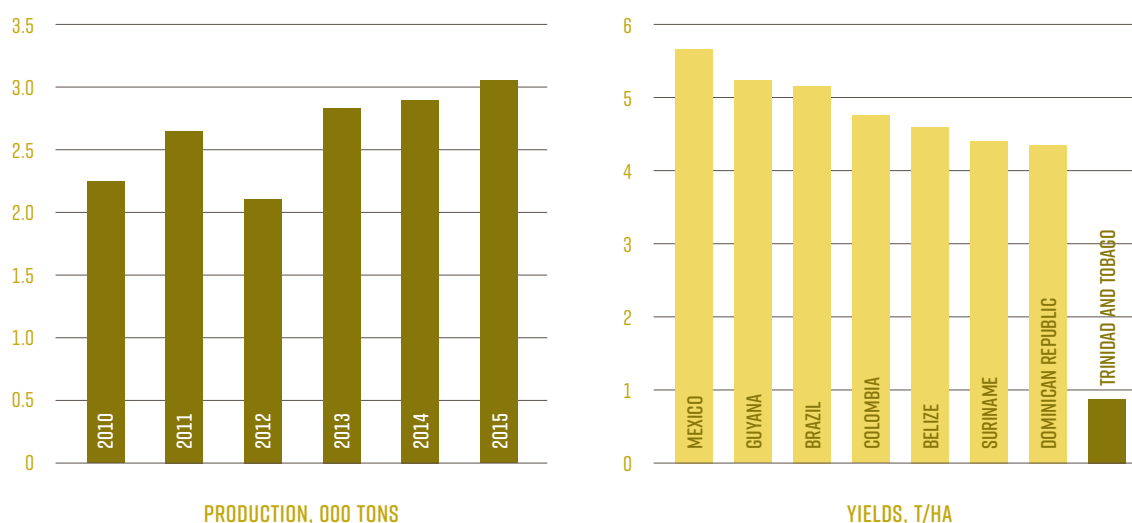
BOX 1: RICE SUBSECTOR CHARACTERISTICS

SLOW PRODUCTION GROWTH, STRONG COMPETITION FROM IMPORTS

Rice is one of the potential import substitution products for Trinidad and Tobago. Its production volumes are increasing, though not at an impressive pace. While a 34% increase in rice production in 2013 is reported as a major

achievement, it was mostly the effect of the low base of 2012, and its compound annual growth rate (CAGR) over the past 6 years was only 5% (Figure 16). At the same time, about 90% of local rice consumption was imported.

FIGURE 16: RICE PRODUCTION AND YIELDS IN TRINIDAD AND TOBAGO AND OTHER COUNTRIES



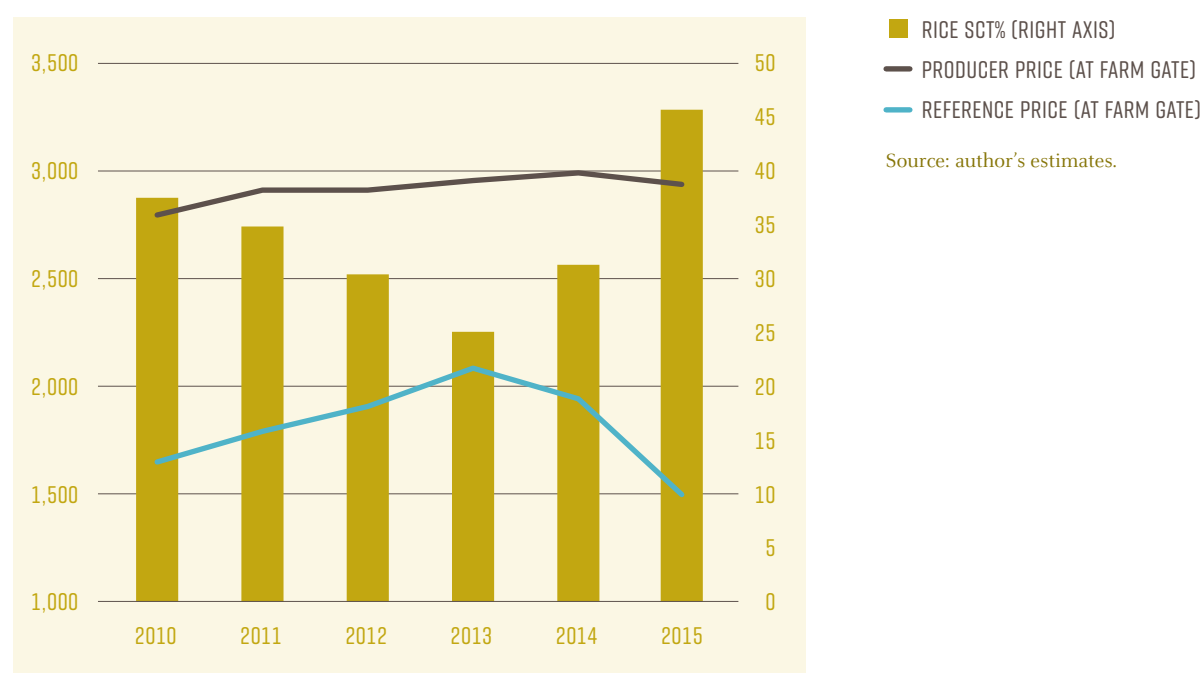
Source: CSO, 2016, FAOSTAT, 2016.

⁴⁰ MALF, 2011a.

RICE SUBSECTOR BENEFITED FROM THE GUARANTEED PRICE POLICY

Rice producers were supported by agricultural policy measures throughout the period of study, as farmers received guaranteed prices that were on average 50% higher than they would have received without policy intervention (Figure 17). All support came in the form of price support (MPS); no subsector-specific budget support was provided. The Producer SCT% of 46% in 2015 was slightly lower than the result of the 2007 study, where PSE for rice⁴¹ was estimated at 75% - 79%. Rice farmers were supported at the expense of consumers, who paid higher prices for rice as a result of the policy.

FIGURE 17: PRODUCER SCT%, PRODUCERS AND REFERENCE PRICES (TT\$/T) FOR RICE IN TRINIDAD AND TOBAGO, 2010-2015



⁴¹ As noted before, PSE by commodity has not been calculated using OECD methodology since 2005, but the PSE by commodity in 2007 study are comparable to OECD's Producer SCT indicators.

3.3.1.2. ROOT CROPS SUBSECTOR POLICY ANALYSIS

POLICY INCLUDED STIMULATING DEMAND AND SUPPORT FOR RESEARCH AND DEVELOPMENT

According to the Agriculture Now plan, the goal of the commodity-specific policy for root crops is to increase production and productivity.⁴² Policy actions included promotion measures to encourage substitution of imported grains with local cassava, expanding demand through incorporating cassava into the school menu, and research and development support. Most programs benefitting cassava farmers did not have separate budgets for this commodity, thus, promotion of cassava products was financed as part of the general promotion financing (NAMDEVCO). Research and development and inspection services were financed through the budgets of the respective organizations. The only commodity-specific budget program was “Development of cassava industry” of TT\$ 200,000 annually, directed by the Tobago House Assembly.

Production levels of both cassava and sweet potatoes have been successfully supported by public investments. However, profitability and productivity require more attention. Otherwise, such subsidies may become non-sustainable. In addition, the FAO report on the cassava industry in the Caribbean (FAO, 2015) indicated high levels of post-harvest losses in Trinidad and Tobago; this issue should also be a priority for subsector policy makers.

ROOT CROPS SUPPORT: BETWEEN NEUTRAL AND POSITIVE

The effect of individual support for farmers, included in SCT, was positive for sweet potato farmers, who received prices about two times higher than they would have in a non-policy intervention situation. The effect was nearly neutral for cassava farmers, who did not receive price support, but received budget transfers in the framework of the Tobago program for development of the cassava industry. While cassava was supported by budget transfers in Tobago and was the focus of some promotion programs, the increase in sweet potato production was more significant during the period of study. Domestic prices for both sweet potatoes and cassava decreased in 2015, but market-distorting price support for sweet potatoes remained high (Figure 20). Increasing productivity through improvements to production technology, planting more efficient varieties, and improvements to post-harvest management would increase the competitiveness of both subsectors.

⁴² MALF, 2011a.

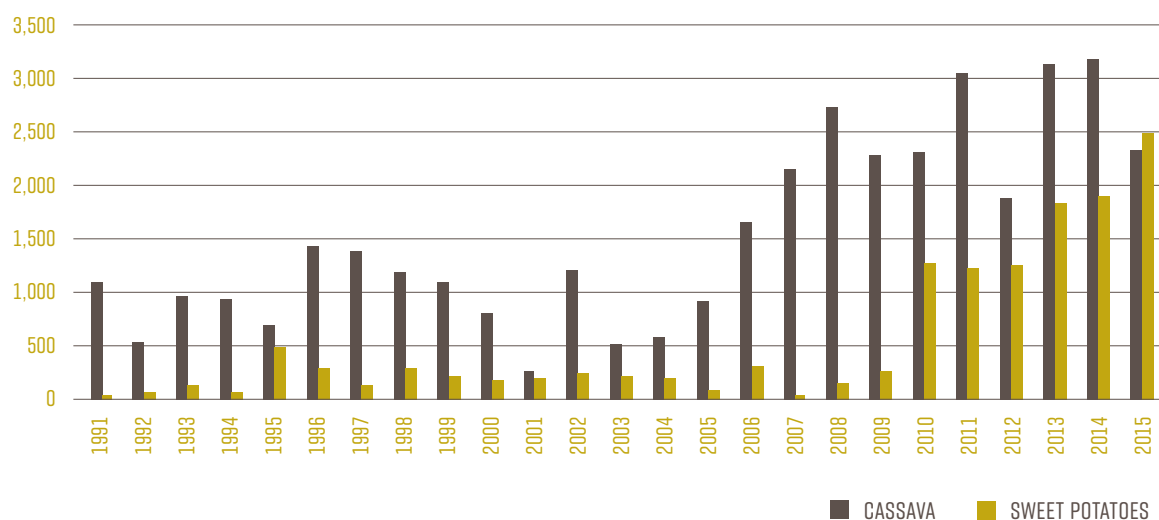
BOX 2: ROOT CROPS SUBSECTOR CHARACTERISTICS

PRODUCTION INCREASED SIGNIFICANTLY, BUT PRODUCTIVITY IS STILL LOW

Both cassava and sweet potato production have increased significantly in recent years (Figure 18). However, the productivity of both root crops is still much lower than the region's leaders,

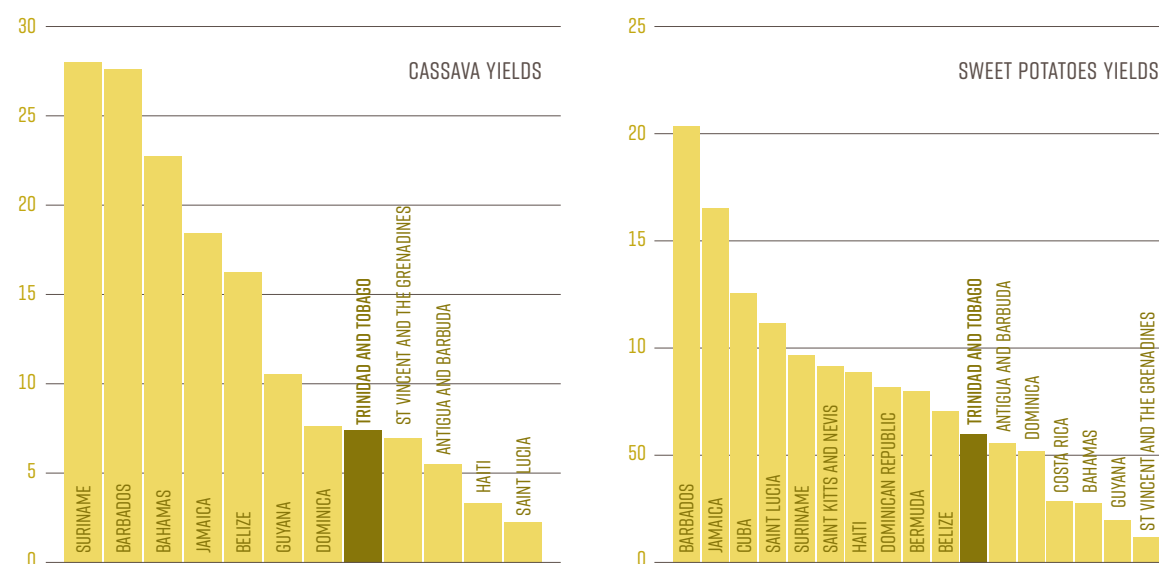
i.e. Barbados, Suriname and Jamaica (Figure 19). Therefore, if the productivity issue is not addressed, output from further expanding production volumes may not find regional markets.

FIGURE 18: PRODUCTION OF ROOT CROPS IN TRINIDAD AND TOBAGO (TONS)



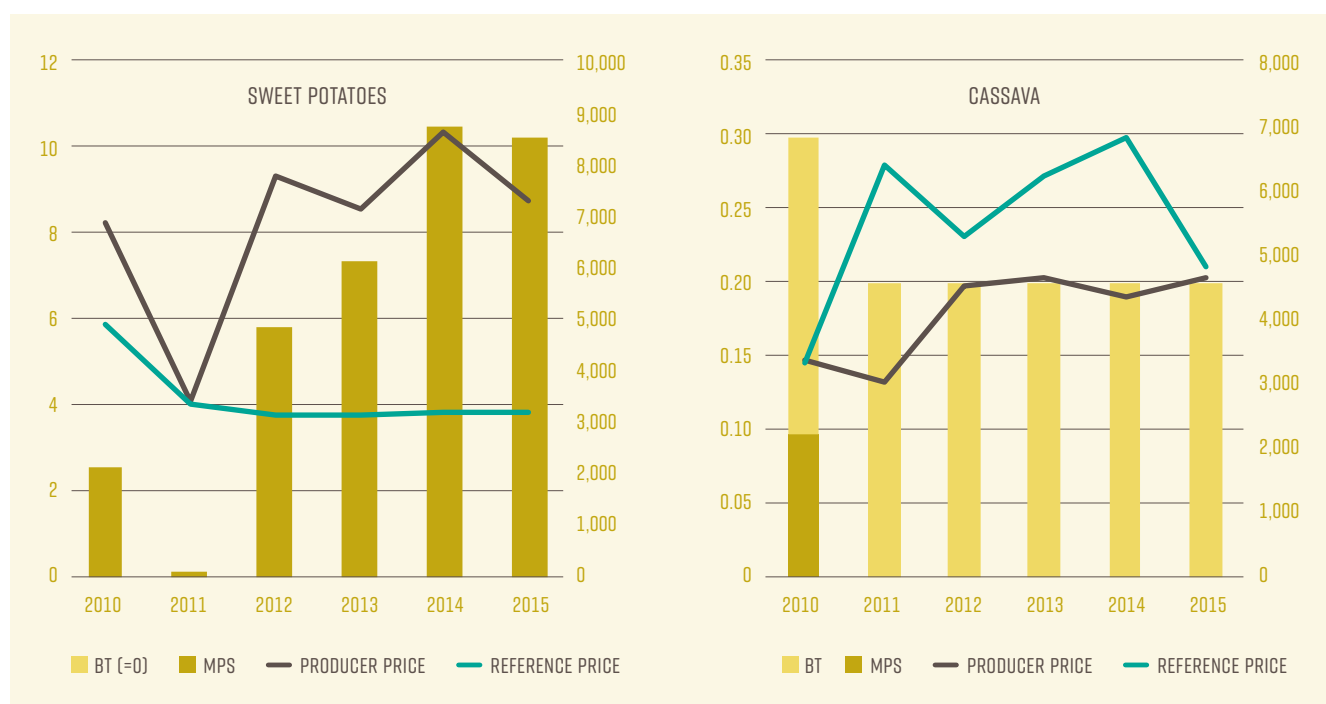
Source: FAOSTAT, CSO.

FIGURE 19: ROOT CROPS PRODUCTIVITY IN TRINIDAD AND TOBAGO AND OTHER COUNTRIES (TONS/HA)



Source: FAOSTAT.

FIGURE 20: PRODUCER SCT (TT\$ MN), PRODUCERS AND REFERENCE PRICES (TT\$/T, RIGHT AXIS) FOR SWEET POTATOES AND CASSAVA IN TRINIDAD AND TOBAGO, 2010-2015



Source: author's estimates

3.3.1.3. COCOA SUBSECTOR POLICY ANALYSIS

POLICY SUPPORT INCLUDED MINIMUM GUARANTEED PRICES, INVESTMENT GRANTS, MARKETING BY THE STATE COMPANY, AND RESEARCH AND DEVELOPMENT

Cocoa was named a strategic crop in the Agriculture Now plan⁴³, which listed the goals of support as increased production, productivity and exports of cocoa-based products at premium prices. Minimum guaranteed prices for cocoa were set at levels close to international prices.⁴⁴

The Agricultural Incentive Program compensated 100% of the cost of cocoa establishment or rehabilitation (with a fixed maximum subsidy per hectare) and 10% of the cost of establishment of cocoa fermentation facilities.

⁴³ MALF, 2011a.

⁴⁴ The Cocoa Development Company announced an increase in the guaranteed price for the 2015/2016 cocoa crop, to \$22 per kg and \$23 per kg for farmers who increased supplies by 25% compared to 2013/2014, but the prices remained close to international levels.

Up until 2014, the parastatal Cocoa and Coffee Industry Board had been purchasing cocoa from farmers for marketing and export. To ensure a favorable institutional environment for industry development,⁴⁵ the Cocoa and Coffee Industry Act was repealed in 2014, and the Cocoa and Coffee Industry Board ceased to provide financing. The Cocoa Development Company was formed in its place and plays a similar role.

Research and development services for the cocoa sub-sector were provided by the Cocoa Research Centre (CRC) at UWI, as well as by MALF. New varieties with improved productivity are being developed and planting materials are being distributed to cocoa farmers.

BOX 3: COCOS SUBSECTOR CHARACTERISTICS

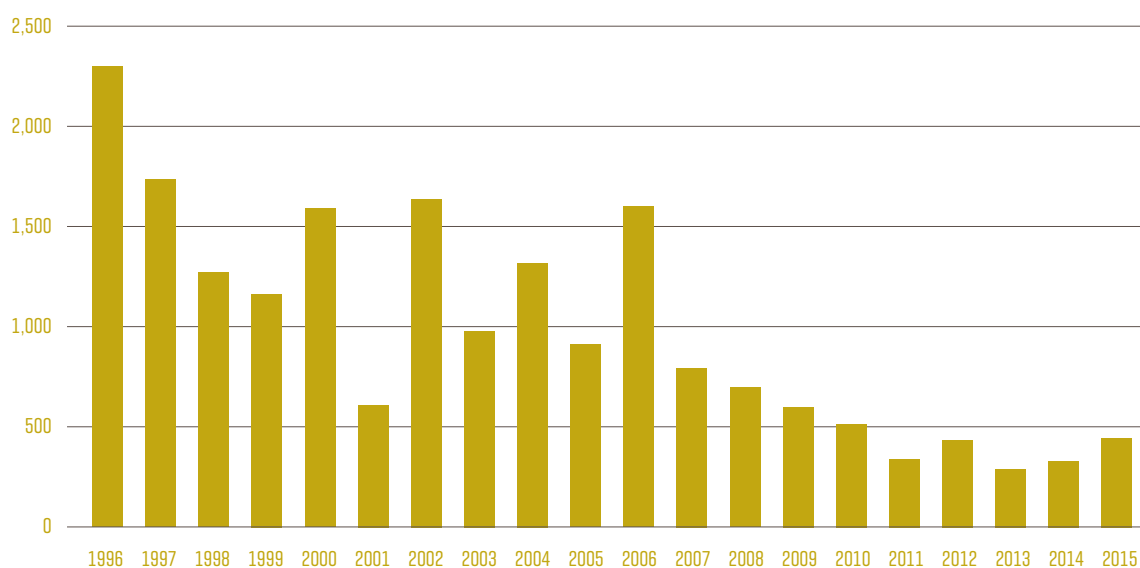
CHALLENGES INCLUDE SHRINKING PRODUCTION AND LOW YIELDS

Trinidad and Tobago produces fine-flavored cocoa that attracts premium prices on the world market. However, only 832 cocoa farmers were operating in 2015, and the production volume has declined considerably in the past decade: In 2015, 450 tons of cocoa were produced, only half 2005's production (Figure 20). Eighty-five percent of the farms operate on plots smaller than 5 hectares. Most output is exported as cocoa beans, but in 2015, the first

cocoa processing facility was established and processed 50 tons of cocoa beans into cocoa liquor.

The subsector suffers from low average productivity (Figure 21) and the yields are very different depending on the region of the country, farm size, and production methods, ranging between 200 kg/hectare for the small farms (under 5 hectares) to 2,000 kg/hectare on large farms in East Trinidad.

FIGURE 21: COCOA PRODUCTION IN TRINIDAD AND TOBAGO (TONS)

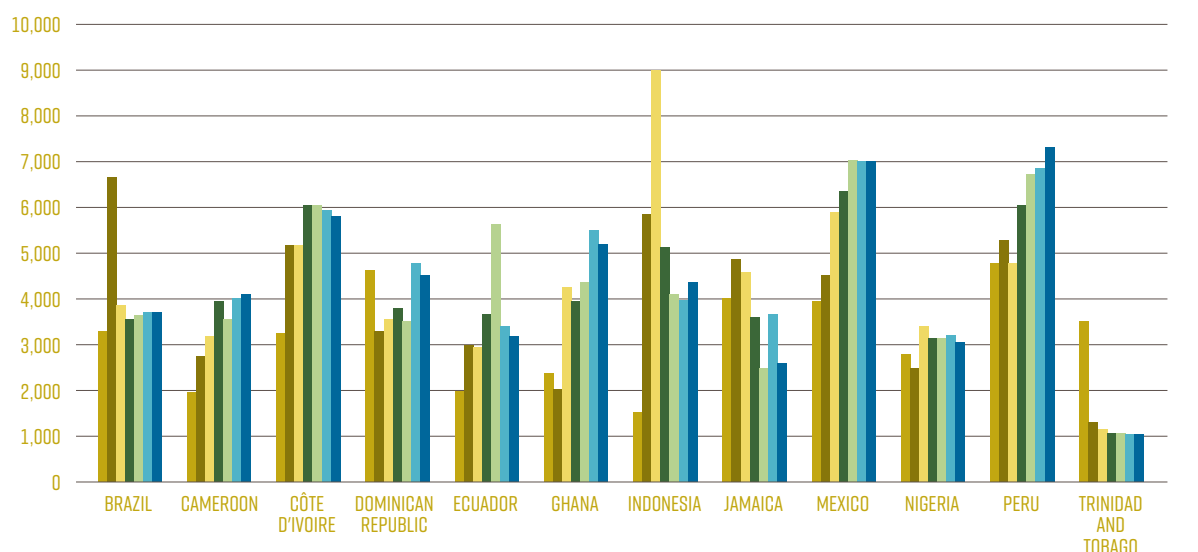


Source: FAOSTAT, CSO.

⁴⁵ According to Agriculture Now plan (MALF, 2011a)

BOX 3: COCOS SUBSECTOR CHARACTERISTICS

FIGURE 22: COCOA YIELDS IN TRINIDAD AND TOBAGO AND OTHER COUNTRIES (KG/HECTARE)



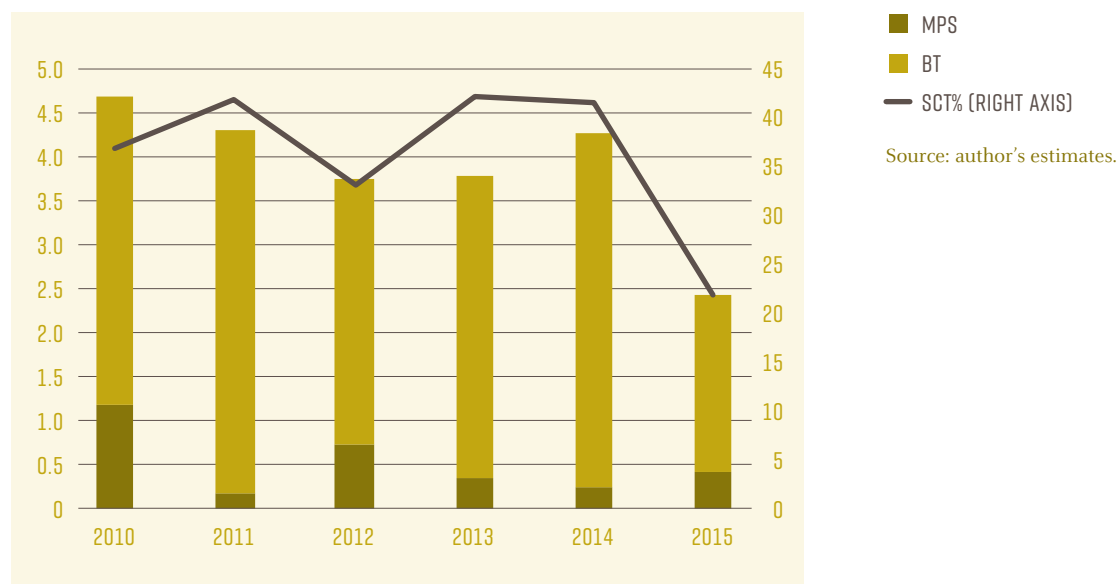
Source: FAOSTAT.

■ 1961
 ■ 1981
 ■ 1990
 ■ 2010
 ■ 2011
 ■ 2012
 ■ 2013

COCOA RECEIVED NEUTRAL PRICE SUPPORT, BUT POSITIVE BUDGET TRANSFERS

Prices in domestic cocoa markets were similar to international prices, and subsector specific policy had a neutral effect on cocoa farm-gate prices, despite the minimum guaranteed price policy in place. This indicates that the minimum guaranteed price policy did not benefit farmers, a result that has not changed since the 2007 study.⁴⁶ However, if the budget transfers to cocoa farmers are taken into account, the level of support amounted to an average of 35% of gross farm receipts for 2012–2015 (Figure 23). The Producer SCT for cocoa was high compared with other crops, and consisted of budget transfers for rehabilitation of cocoa farms, which is a less distortive form of support than MPS. This analysis suggests that the guaranteed minimum price policy for cocoa farmers may be redundant, and farmers would benefit from more competitive market structure and from the reduction of the role of state-owned companies in marketing. Measures to address low productivity in the subsector are also needed.

⁴⁶ L. Neptune and A. Jacque, 2007.

FIGURE 23: COMPOSITION OF COCOA SCT IN TRINIDAD AND TOBAGO, 2010-2015 (TT\$ MN)

3.3.1.4. HOT PEPPER SUBSECTOR POLICY ANALYSIS

POLICY INCLUDED SUBSIDIZED LOANS, INVESTMENT GRANTS AND PUBLIC-PRIVATE PARTNERSHIPS FOR PRODUCTION

The policy for hot pepper aimed to improve quality, ensure availability throughout the year, and expand exports.⁴⁷ Incentives to hot pepper producers included subsidized loans from the ADB, subsidized machinery, and investments in on-farm irrigation. The government was also directly involved in the pepper subsector, as the state-owned Caroni Green Limited was a major producer and exporter until 2017. CARDI provided R&D support to the sector, and supplied high quality seeds.

Besides domestic support policy measures, the government protected domestic hot pepper producers from imports. Import duties included a 40% tariff for fresh peppers and a 20% tariff for pepper sauce.

⁴⁷ MALF, 2011a.

BOX 4: HOT PEPPER SUBSECTOR CHARACTERISTICS

HOT PEPPER PRODUCTION IS HIGHLY PROFITABLE AND PRODUCTIVITY IS HIGHER THAN AVERAGE IN THE REGION

Hot pepper production is one of the financially successful sub-sectors in Trinidad and Tobago, as it is highly profitable and offers vast export opportunities. Trinidad and Tobago's hot pepper variety is the hottest pepper in the world, which generates demand for it from hot sauce producers and increases its value. Peppers were produced on medium-sized farms (8-20 acres, larger than in other pro-

ducing countries in the Caribbean); state-owned Caroni Green Limited was one of the major producers and exporters of hot peppers.

Productivity was higher than the regional average, at 22 t/ha (Figure 24), however, according to CARDI, potential yields could reach 45-78 t/ha through use of best production practices.

FIGURE 24: PRODUCTION VOLUMES (000 TONS) AND PRICES (TT\$/TON, RIGHT AXIS) OF HOT PEPPER IN TRINIDAD AND TOBAGO

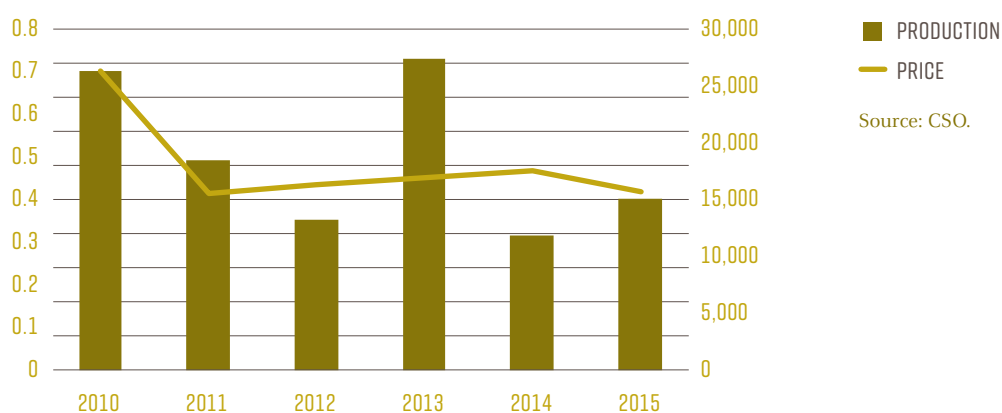
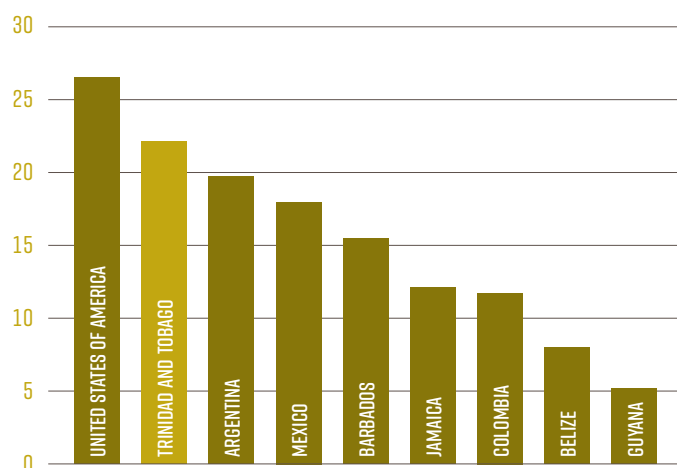


FIGURE 25: HOT PEPPER PRODUCTIVITY IN TRINIDAD AND TOBAGO AND OTHER COUNTRIES (T/HA)V



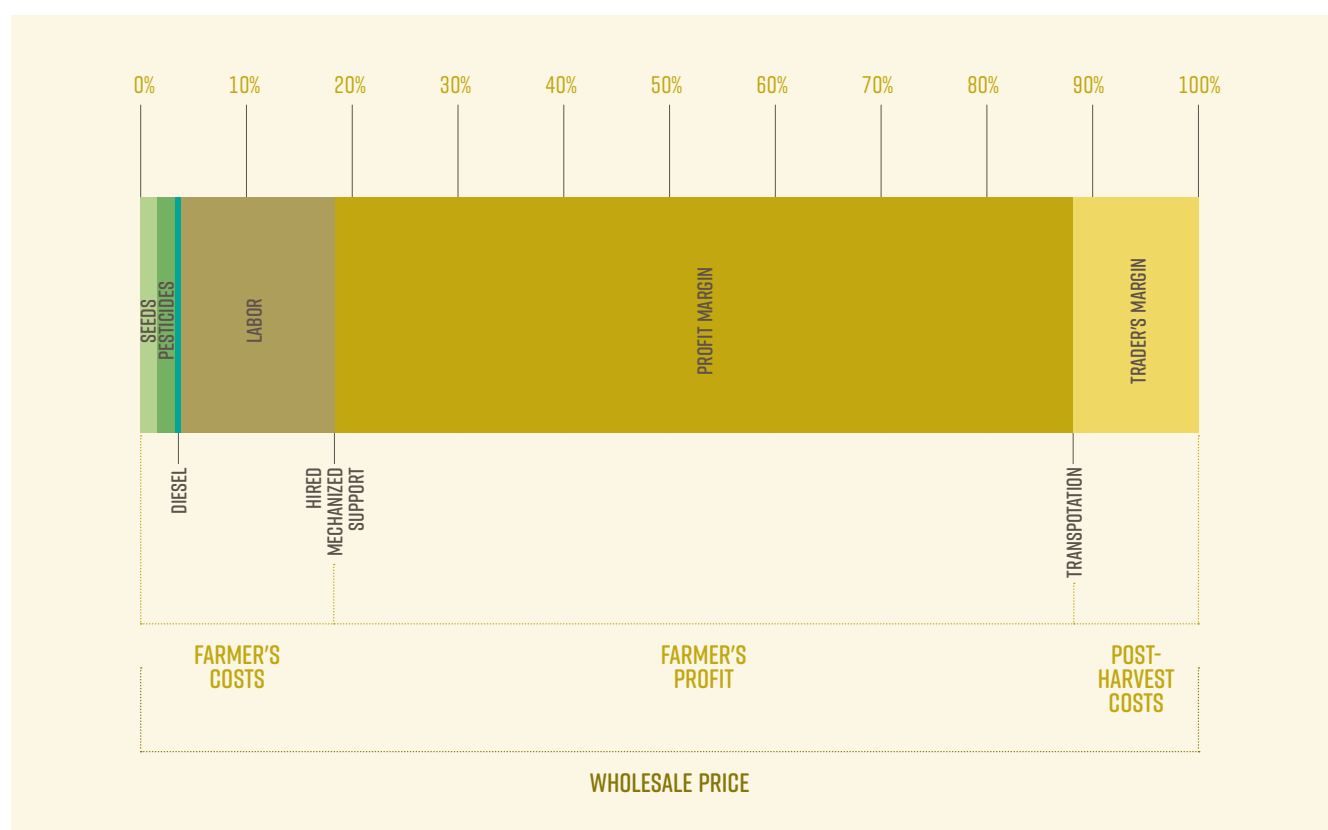
Source: FAOSTAT,
NAMDEVCO, CARDI.

CASE STUDY ON VALUE CHAIN ANALYSIS REVEALED HIGH PROFITABILITY

Hot pepper production is labor intensive. Hired labor is generally used for planting and picking peppers. Workers are usually paid \$40 per bag of peppers picked (\$1 per lb). The cost of seed and fertilizer does not significantly affect total production costs. One of the farmers interviewed, from one of the largest producers of hot peppers, uses organic production techniques and does not use fertilizer or chemical weed control.

Production volume is growing, and high productivity and quality ensures demand on international markets. Hot pepper is exported mainly to the US and Canada in both fresh and processed forms (pepper mash, pepper sauce).

FIGURE 26: HOT PEPPER VALUE CHAIN, SHARE OF EACH COMPONENT'S VALUE (%) / CASE STUDY ⁴⁸



Source: interviews with farmers, NAMDEVCO, Turtle Village Trust.

⁴⁸ This is a value chain structure based on a sample of case studies and should not be considered as representing an average distribution of the value along the value chain in the country.

FIGURE 27: HOT PEPPER VALUE CHAIN, TRINIDAD AND TOBAGO



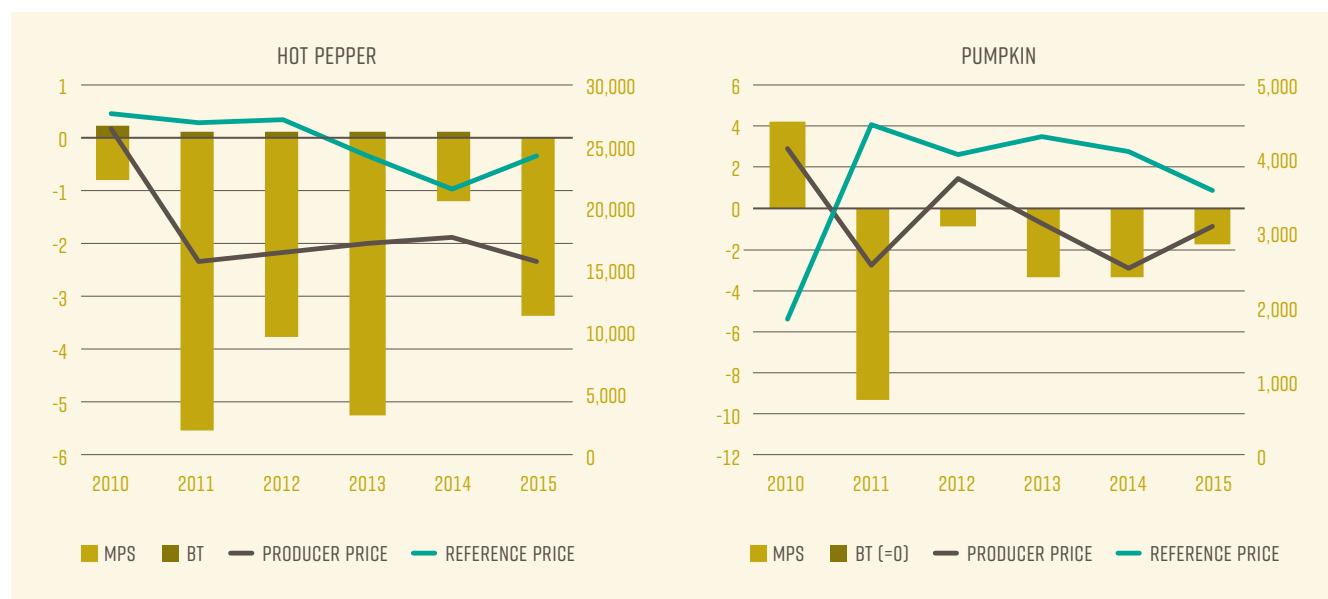
Source: interviews with farmers, NAMDEVCO, 2016, Turtle Village Trust, 2016.

Pepper production in Trinidad is highly profitable. However, as the negative MPS indicates, it could be even more profitable. The government has paid special attention to this subsector: It was one of the first commodities to benefit from the quality control and packaging improvements provided by the packing houses; the government invested in pepper production directly and provided subsidized loans to private entities. Productivity is also quite high. However, the increase in production may not be sustainable if the government continues to participate in production directly instead of promoting competitive production and post-production markets. Reorientation of policy goals and focus on farmer incomes rather than production volumes is recommended.

HOT PEPPER SCT WAS NEGATIVE, INDICATING IMPLICIT TAXATION

The prices hot pepper farmers received were lower than prices they would receive for their output in the absence of the price policies. This result indicates that there were obstacles to price transmission along the value chain. Public policies affecting prices on the hot pepper market included export procedures (certification) and direct participation of state companies (Caroni Green, NAMDEVCO) in production and exports. Market inefficiencies, such as monopolization of exports and infrastructure deficiencies, also contributed to the price gap. While the negative price gap cannot be fully attributed to the effects of the government's actions, it indicates that more efforts are required to ensure a competitive market structure and remove administrative obstacles to exports.

FIGURE 28: PRODUCER SCT (TT\$ MN), PRODUCERS AND REFERENCE PRICES (TT\$/T) FOR HOT PEPPER AND PUMPKIN IN TRINIDAD AND TOBAGO, 2010-2015



Source: author's estimates.

3.3.1.5. PUMPKIN SUBSECTOR POLICY ANALYSIS

POLICY SUPPORT INCLUDED SUBSIDIZED INPUTS AND GENERAL SERVICES

The goals of the pumpkin subsector policy were to maintain high yields and increase production volumes.⁴⁹ Incentives to pumpkin producers included subsidized loans by ADB; subsidized machinery, technical assistance, and infrastructure (roads, water supply). Inputs have been imported duty-free since 2016. Additional support to the value chain included packing houses that collect and store commodities, marketing infrastructure (wholesale markets), and technical assistance for exporters.

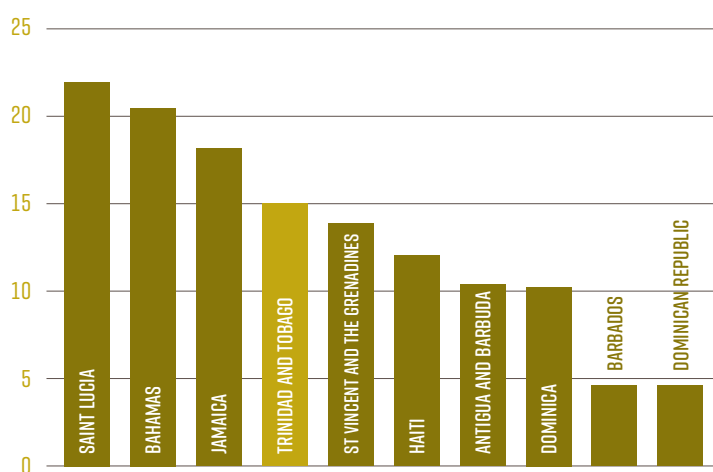
BOX 5: PUMPKIN SUBSECTOR CHARACTERISTICS

PUMPKIN PRODUCTION INCREASED SUBSTANTIALLY IN 2015. HOWEVER, IT IS VERY VOLATILE.

Pumpkin is a value crop with established export markets. Productivity for pumpkins in Trinidad and Tobago is relatively high (15 t/ha in 2014), which contributes to its re-

gional competitiveness (Figure 27). However, production has been very volatile, and over the last six years, it was on average 50% lower than in 2000-2005 (Figure 29).

FIGURE 29: PUMPKIN YIELDS IN TRINIDAD AND TOBAGO AND OTHER COUNTRIES (TONS/HECTARE)

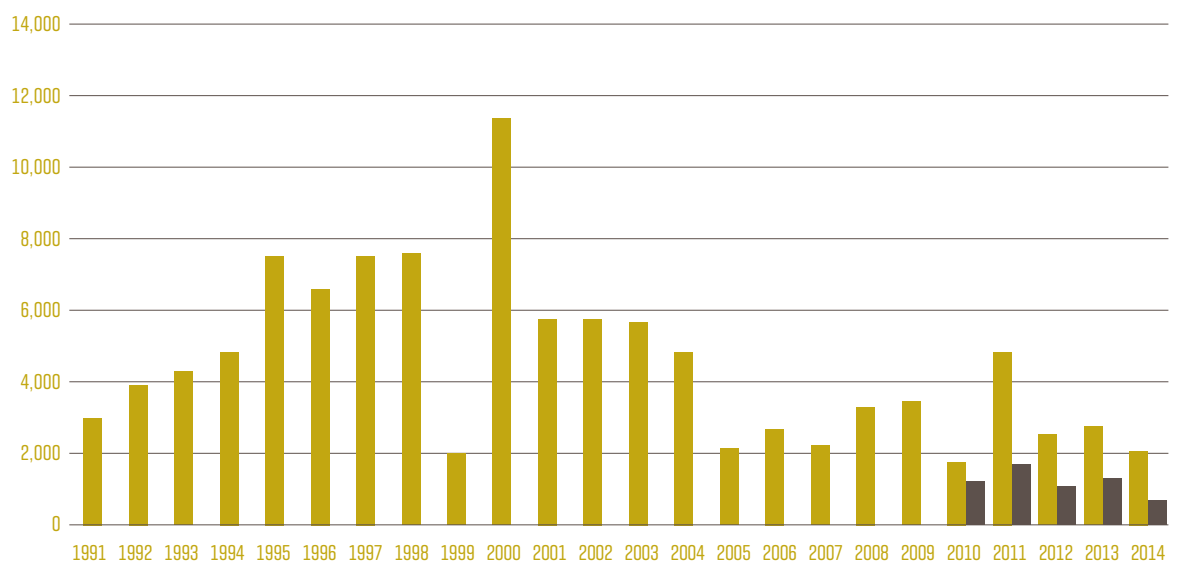


Source: FAOSTAT, 2016;
NAMDEVCO, 2016.

⁴⁹ According to the Agriculture Now plan (MALF, 2011a).

BOX 5: PUMPKIN SUBSECTOR CHARACTERISTICS

FIGURE 30: PUMPKIN PRODUCTION AND EXPORTS* IN TRINIDAD AND TOBAGO (TONS)



* No trade data available prior to 2010.

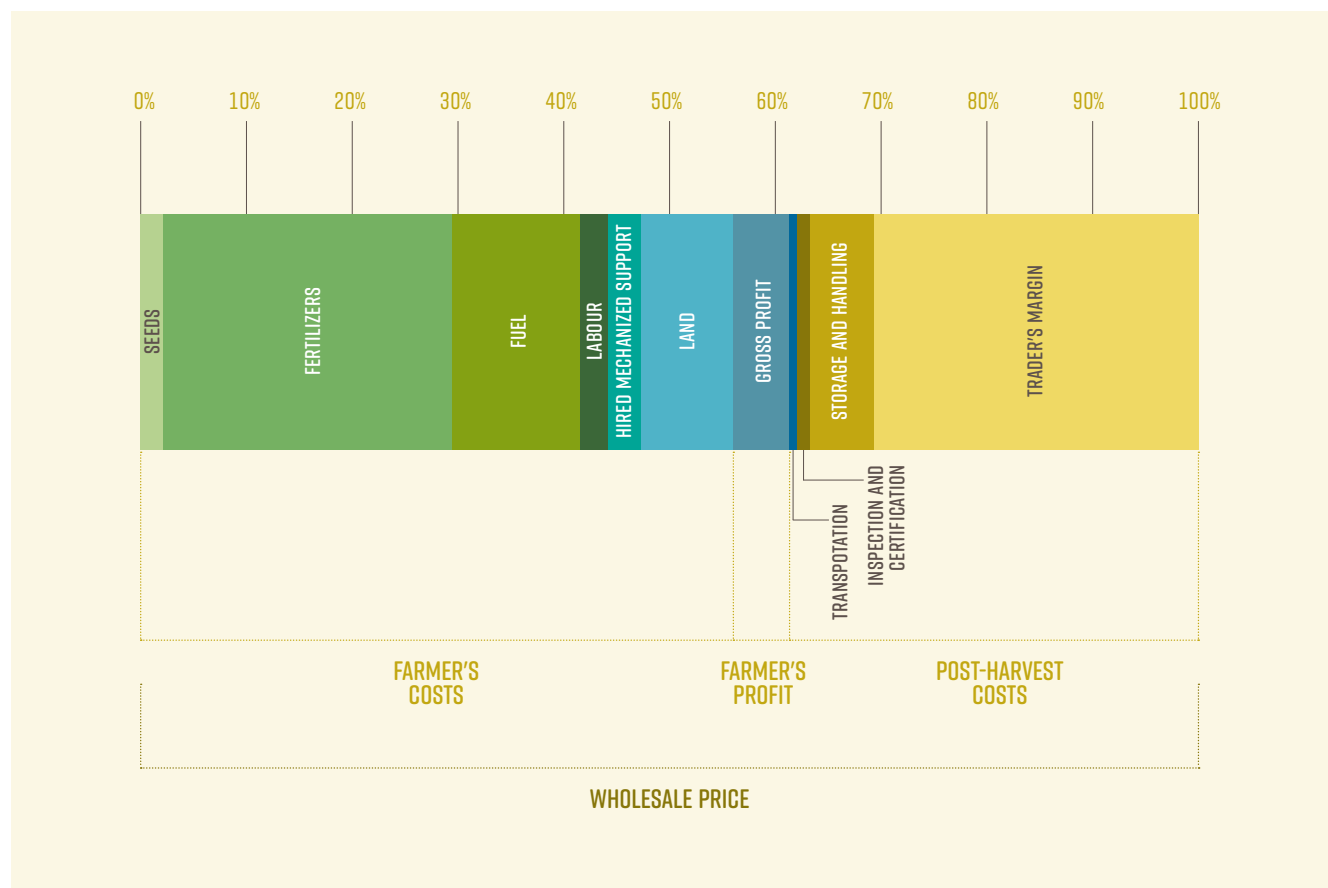
Source: FAOSTAT, 2016; CSO, 2016.

■ PUMPKIN PRODUCTION
■ PUMPKIN EXPORTS

CASE STUDY FOR VALUE CHAIN ANALYSIS REVEALED A HIGH SHARE OF PURCHASED INPUTS IN PRODUCTION COSTS

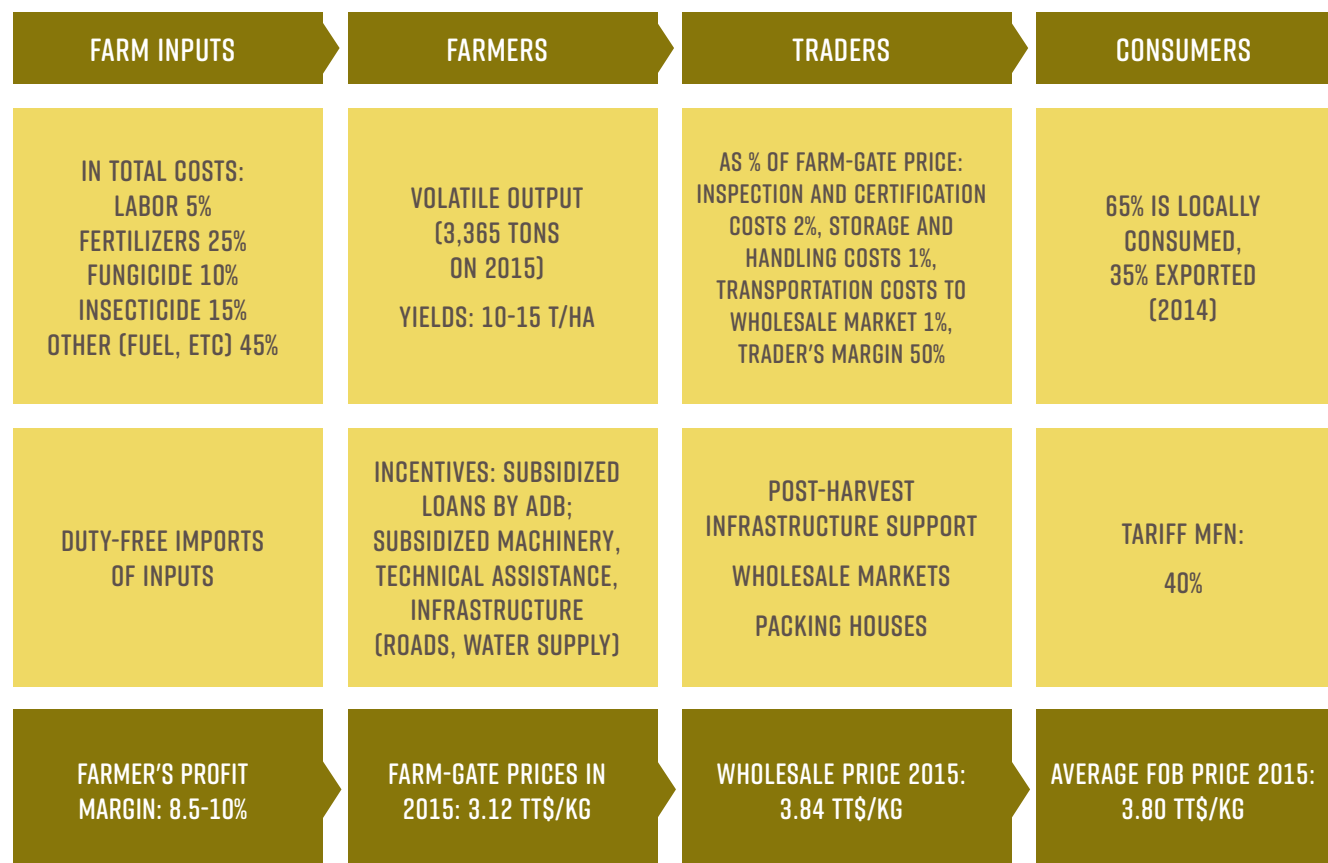
The value chain analysis performed for this study found that purchased inputs (namely seeds, fuel and fertilizers) played a more important role in pumpkin production than in the hot pepper value chain. It is also worth noting that in this pumpkin case study, the ratio between the farm-gate price and the wholesale price was only 60% (Figure 31, Figure 32), due to high post-harvest costs and traders' margin.

While over a third of pumpkin output was exported in 2014, this share is decreasing, and the volumes of export decreased too. While pumpkin production is profitable and competitive, and support to the value chain in the form of packing houses seems to be effective, the negative price gap (MPS) is a disincentive for producers. The SCT-related budget support is zero, but producers benefitted from general services (see section 3.3.3).

FIGURE 31: PUMPKIN VALUE CHAIN, SHARE OF EACH COMPONENT'S VALUE (%) / CASE STUDY⁵⁰

Source: interviews with farmers, 2016, NAMDEVCO, 2016.

⁵⁰ This is a sample value chain structure based on a sample of case studies and should not be considered as representing a demonstration of an average distribution of the value along the value chain in the country.

FIGURE 32: PUMPKIN VALUE CHAIN, TRINIDAD AND TOBAGO

Source: interviews with farmers, 2016, NAMDEVCO, 2016.

PUMPKIN SCT WAS NEGATIVE IN MOST YEARS, INDICATING IMPLICIT TAXATION

Pumpkin SCT consisted only of price support (MPS) and was negative in most years, indicating that in the absence of such policy, producers would have received higher prices for their output (Figure 32). One possible factor explaining the negative effect of the policy on export crop farmers (hot peppers, pumpkin, and also papaya in some years) is the government's direct involvement in producing and marketing those crops. Government-owned companies are slow to react to market signals and introduce new technologies and tend to use excessive administrative procedures and engage in corruption. Increased output from public companies drives prices down and crowds out private investors. Other forms of market inefficiencies, such as costly export procedures and lack of physical infrastructure, also contributed to negative MPS.

At the same time, the average profitability of production in those subsectors was positive (and high in case of hot peppers). The government's efforts to introduce quality control and assist in marketing through the packing houses improved the value chains, reduced post-harvest losses and ensured access to export markets. While prices received by producers of pumpkin and hot peppers were lower than they would have been in a non-policy situation, production was still profitable, an indication that costs were low, making those commodities internationally competitive. However, efficiency of production and competitive marketing chains are crucial to maintain this competitive position.

3.3.1.6. OTHER EXPORT CROPS POLICY ANALYSIS

POLICY INCLUDED INCENTIVES TO PRODUCERS, SERVICES AND INVESTMENTS IN INFRASTRUCTURE

Goals of the policy affecting other export crops in the study are: improvements to chrisophine quality and increased availability throughout the season,⁵¹ and increased pineapple production. Producers of those crops received incentives for pest management, support for post-harvest infrastructure development, and research and development support for improving productivity and production sustainability.

⁵¹ Agriculture Now plan (MALF, 2011a). Christophine was not included in the 22 commodities listed for priority development in this document.

BOX 6: OTHER EXPORT CROPS SUBSECTORS CHARACTERISTICS

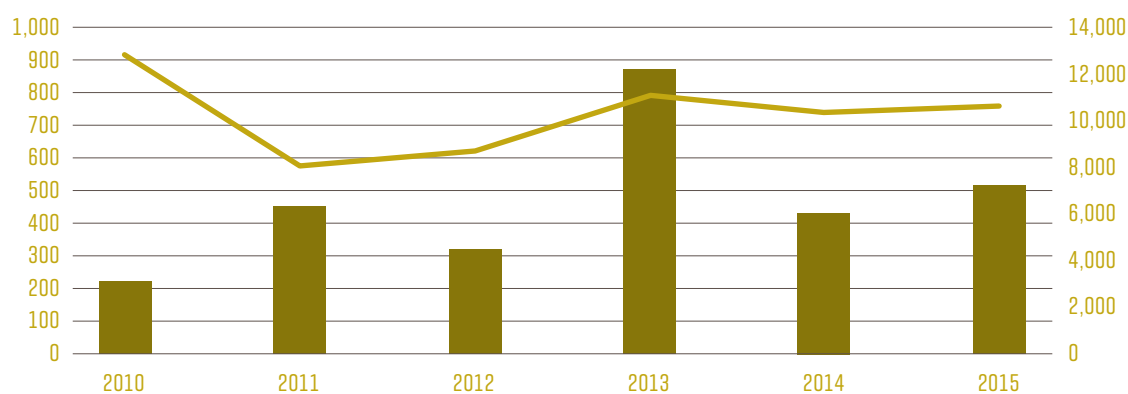
CHRISTOPHINE PRODUCTION IS GROWING, PRICES ARE VERY VOLATILE THROUGHOUT THE SEASON

Production of christophine is growing, but the volume of production is very volatile by year and throughout the season, and prices are volatile and often higher than international prices. Improved quality and post-harvest practices would facilitate access to the growing US market, where demand is currently met by imports from Costa Rica and Mexico.

PINEAPPLE PRODUCTION INCREASED SIGNIFICANTLY

Pineapple production in 2015 was nearly 2 times higher than in 2010, and prices received by farmers were rising as well (Figure 34).

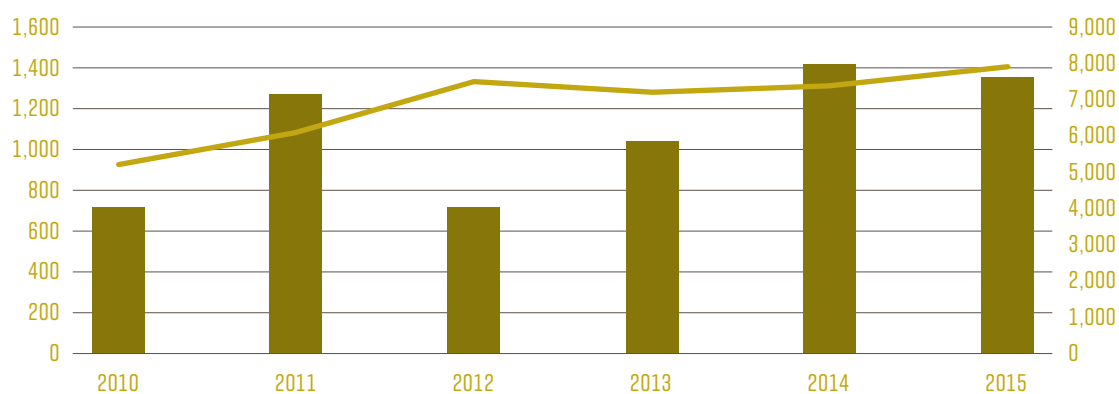
FIGURE 33: CHRISTOPHINE PRODUCTION (TONS) AND PRICES (TT\$/T, RIGHT AXIS), 2010-15



Source: CSO, 2016.

■ CHRISTOPHINE PRODUCTION (TONS) — CHRISTOPHINE PRICE (TT\$/T)

FIGURE 34: PINEAPPLE PRODUCTION AND PRICES, 2010-15



Source: CSO, 2016.

■ PINEAPPLE PRODUCTION (TONS) — PINEAPPLE PRICE (TT\$/T)

SCT REVEALED SUPPORT TO PRODUCERS

Pineapple and christophine⁵² producers were supported by agricultural policy, with local prices for pineapple twice as high as international prices, and christophine prices up to four times higher than international prices. Part of the high price gap may indicate infrastructure underdevelopment, leading to high costs along the value chain, which do not in fact benefit farmers. Support was provided through MPS, at the expense of domestic consumers. Although growth of production volumes of those highly protected commodities was considerable, SCT indicators only measure the level of support, and not its impact on producers, and therefore, do not provide sufficient evidence to conclude that this production growth was the result of a high level of protection.

3.3.1.7. DAIRY SUBSECTOR POLICY ANALYSIS

MILK PRODUCERS RECEIVED GUARANTEED PRICES, R&D SERVICES, BUT PRODUCTION IS IN DECLINE

The policy goal for cattle milk support is to halt the decline in production.⁵³ Farmers supply milk to the largest processing company, Nestlé Trinidad and Tobago Ltd, under contractual arrangements at minimum guaranteed prices set by the government. They also benefit from general services provided to the subsector, including veterinary services and research.

Same-day loans for milk farmers from the ADB in cooperation with Nestlé Trinidad and Tobago were introduced to help finance investments in new technology and improvement of farming systems. Those loans are available to farmers who have been supplying fresh milk to Nestlé for at least 6 months prior to application.

An import tariff of 40% is applied to fresh milk imports, however, the tariff on milk powder imports is only 5% (10% on butter, and 5% on cheese imports).

⁵² Also called chayote.

⁵³ MALF, 2011a.

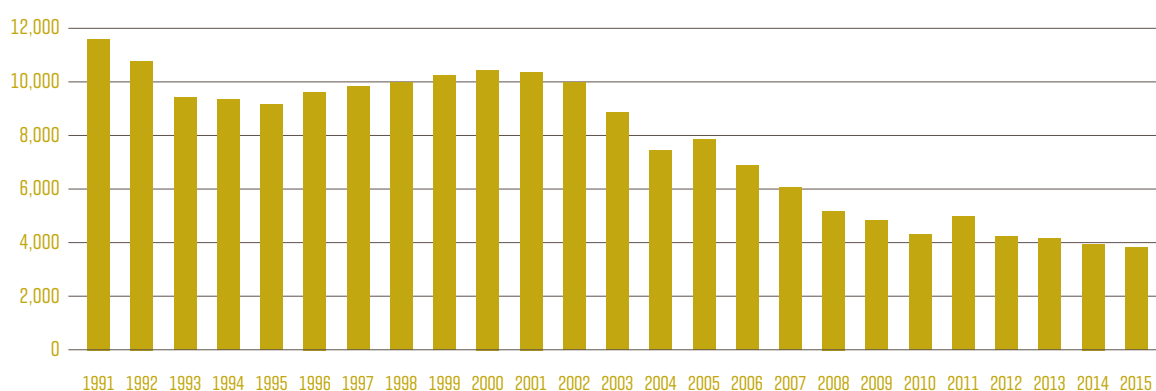
BOX 7: CATTLE MILK SUBSECTOR CHARACTERISTICS

PRODUCTION AND PRODUCTIVITY OF MILK IS DECLINING

Milk production is in decline, facing competition from imported milk powder (mostly from US). In 2015, only 3,817 tons of fresh milk were supplied, a sharp decline from 10,000 tons in 2002 (Figure 35), and productivity is low despite considerable research efforts by the MALF, UWI,

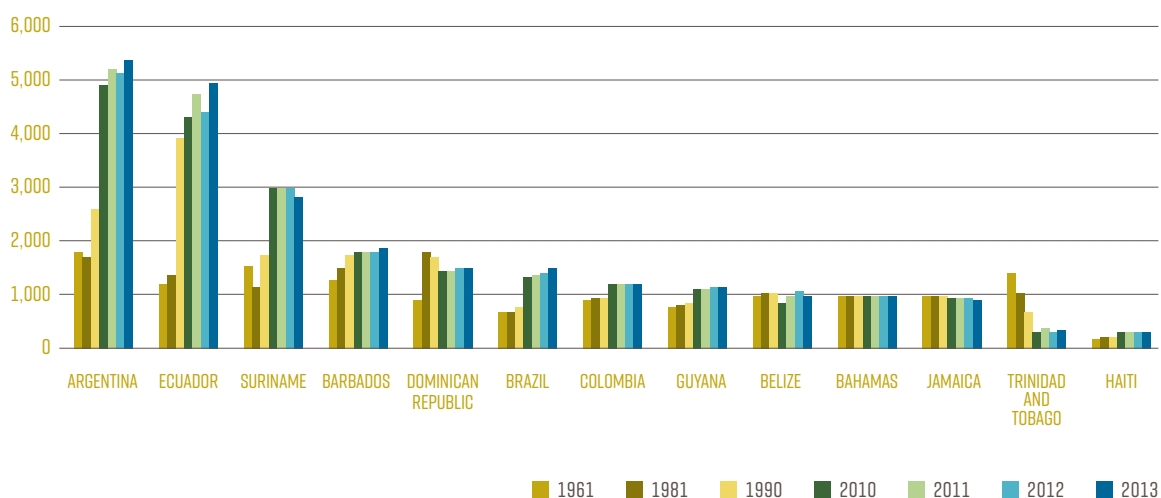
and private associations aimed at increasing it (Figure 36). Dependence on imported animal feed is one of the constraints for the sub-sector's development, while another is the insufficient availability of milk collection centres.

FIGURE 35: MILK PRODUCTION IN TRINIDAD AND TOBAGO (TONS)



Source: FAOSTAT, CSO.

FIGURE 36: MILK YIELDS IN TRINIDAD AND TOBAGO AND OTHER COUNTRIES (KG/ANIMAL)



Source: FAOSTAT, 2016.

NEUTRAL SUPPORT FOR DAIRY SUBSECTOR

Estimates of support to the milk subsector indicate that contractual arrangements with the processing company are not favorable for the farmers. Minimum prices for milk were lower than the actual farm-gate prices received by producers, and therefore did not have any effect on average in the country. The negative price gap for milk was set to zero as it was considered to reflect non-policy effects along the value chain. No budget transfers specific for milk producers took place in the period of study.

3.3.1.8. LIVESTOCK SUBSECTOR POLICY ANALYSIS

LIVESTOCK SUBSECTOR BENEFITS FROM RESEARCH AND DEVELOPMENT SERVICES AND BORDER PROTECTION

There are no declared policy goals for poultry and pork subsectors, other than maintaining current production levels. The policy goals for the small ruminants' subsector include increasing sheep and goat meat production to 20% of local consumption and replacing imported goat milk with local supply⁵⁴. Small ruminants were part of several support programs and are mentioned in all the planning documents as one of the priority subsectors. The livestock subsector was a major beneficiary of knowledge generation and transfer services. The Sugarcane Feeds Center, established in 1976 and operating under the MALF since 2000, is a major agricultural livestock research and development entity, occupying 60 hectares. The Government also invested in forage farms and breeding centers (those activities are described in more detail in Section 3.3.3).

Imported poultry received an import tariff of 40%, in addition to which a 15% surcharge was levied in 2013.

⁵⁴ MALF, 2011a.

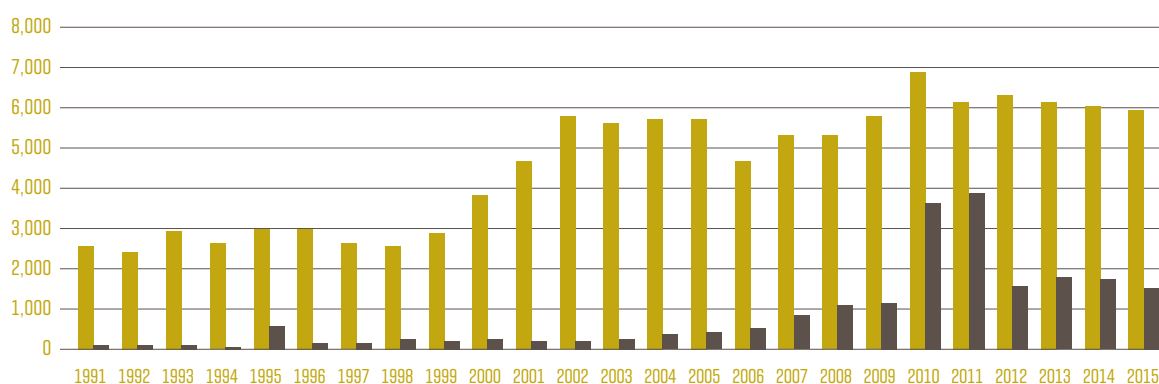
BOX 8: LIVESTOCK SUBSECTOR CHARACTERISTICS

POULTRY IS THE BIGGEST SUBSECTOR IN AGRICULTURE, WITH PRODUCTION GROWING AND IMPORTS DECLINING

Poultry production is the most important agricultural sub-sector in Trinidad and Tobago, producing about 40% of the gross value of the country's agricultural production. It is a major source of protein for consumers. Poultry, like other livestock subsectors, is highly dependent on imported inputs, including feed, chicks, and medication.

Its value chain is well developed and the level of competition is high. Imports halved compared to 2011. Imported poultry is considered to be of inferior quality compared to domestic production. Lack of standardization is also a constraint on potential poultry export expansion (Figure 37).

FIGURE 37: POULTRY PRODUCTION IN TRINIDAD AND TOBAGO (TONS)



Source: FAOSTAT, CSO.

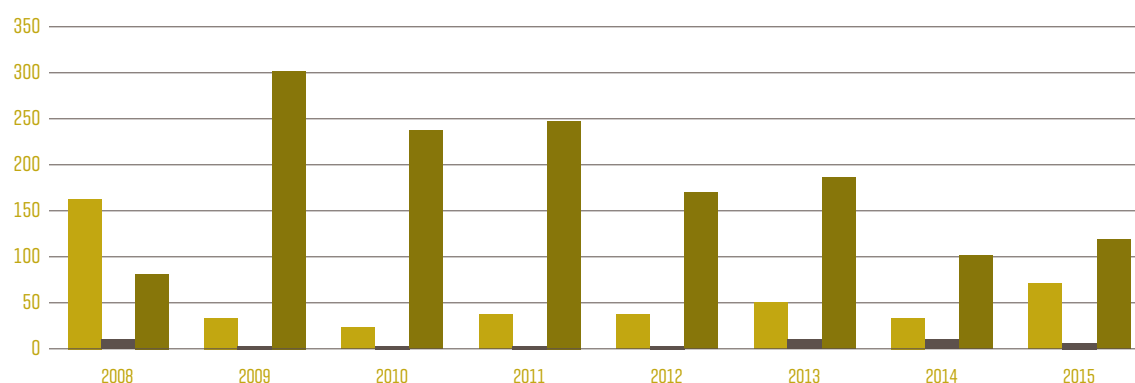
■ PRODUCTION ■ IMPORTS

SMALL RUMINANTS' PRODUCTION IS GROWING

Goat and sheep production has grown steadily over the past six years. These subsectors benefitted from input subsidies, subsidized loans, and research and development support,

including breeding centers. However, most of the output is still consumed domestically. The rabbit meat subsector was identified as a target for potential export expansion.

FIGURE 38: SMALL RUMINANTS PRODUCTION IN TRINIDAD AND TOBAGO (TONS)



Source: FAOSTAT, 2016, CSO, 2016.

■ GOAT MEAT PRODUCTION ■ RABBIT MEAT PRODUCTION ■ SHEEP MEAT PRODUCTION

POULTRY AND SMALL RUMINANTS' PRODUCERS WERE SUPPORTED BY POLICY

Price support to poultry producers was the single most important component of MPS (an average of 40% of national MPS for the period 2010-15 went to the poultry subsector) and a driver of the changes in MPS level during the period of study. While the formal import tariff protection of the domestic poultry market consisted of the 40% import duty and, since 2013, of an additional 15% surcharge, in fact there was very limited transmission between domestic and international primary markets for poultry, and average prices received by the producers were stable despite the volatility of international prices. The level of protection as a percentage share of gross farm receipt was moderate (the highest share was 41% in 2010, and in 2013 it was only 5%), but it was substantial in absolute terms (between TT\$253 million - US\$40 million - in 2010 and TT\$28 million - US\$4.5 million - in 2013). All support to poultry was in the form of price support, no subsector-specific budget transfers were allocated to the poultry subsector.

The level of support to sheep producers estimated by SCT was high, reaching on average 62% of total farm receipts in 2013-2015. Support was provided in the form of both price support (MPS) and budget transfers.

3.3.1.9. APICULTURE SUBSECTOR POLICY ANALYSIS

APICULTURE POLICY INCLUDED INVESTMENT SUBSIDIES, SUBSIDIZED LOANS AND SERVICES TO FARMERS

Along with cocoa, honey was selected by the MALF as a strategic crop with high export potential and comparative advantages, and the goal of Agriculture Now plan⁵⁵ was to increase honey production to 200,000 liters in 2015, twice the amount of 2010 output.⁵⁶ Policy support measures include investment subsidies, subsidized loans, support and training in new technologies, and marketing assistance. However, without adequate quality control and certification for international trade, the effect of this support will be limited. The government understands this, and industry standardization was initiated in 2016.

Tariff on imports (40%), combined with high domestic demand, supported domestic prices at a level higher than international prices.

⁵⁵ MALF, 2011a.

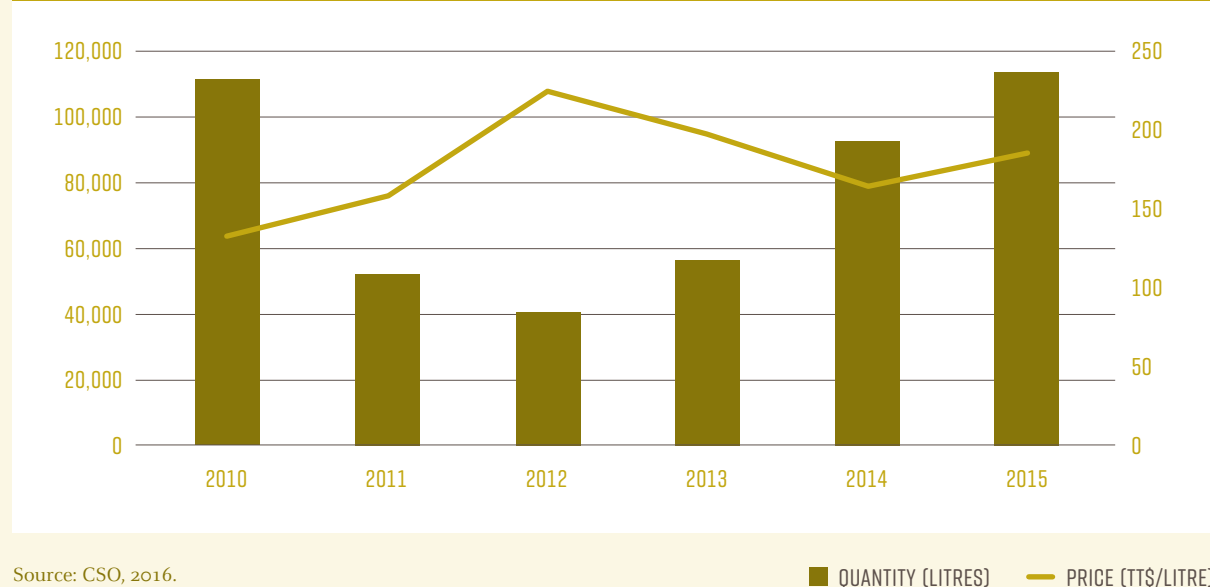
⁵⁶ Actual 2015 honey production amounted to 113,550 liters.

BOX 9: APICULTURE SUBSECTOR CHARACTERISTICS

HONEY: HIGH-QUALITY PRODUCT, LACKS QUALITY CONTROL

450 beekeepers with 7,000 bee colonies currently operate in Trinidad and Tobago. The quality of honey is very high. However, exports were limited, due to the lack of the certification required for EU markets.

FIGURE 39: HONEY PRODUCTION AND PRICES, 2010-15



HONEY SCT IS HIGH, BUT INDICATES GOOD PRICE TRANSMISSION

Honey production received support averaging 63% of gross farm receipts in 2013-15, but domestic prices were clearly influenced by international markets and followed the same trends, and part of the high support levels may be explained by quality differences or infrastructure deficiency.

3.3.1.10. EFFECTIVE RATE OF PROTECTION

The effective rate of protection (ERP) provides additional information regarding the level of support by commodity, by incorporating the effects of support to farm inputs. A positive ERP means that the returns on inputs are potentially higher than in the hypothetical situation of the absence of the policy on commodity and input markets. If ERP is negative, that means that the policy has a negative effect —the potential returns on inputs

would be higher in a non-policy intervention situation. The ERP methodology is limited because it does not take into account possible input substitution,⁵⁷ but it is useful as an indication of the effect of input market policy on agricultural producers.

Information on production costs required for the ERP estimate was obtained from interviews with farmers and supplemented by information provided by NAMDEVCO and MALF. Two exported commodities were selected for ERP estimates: hot peppers and pumpkin.

FERTILIZERS, FUEL, PESTICIDES AND HERBICIDES WERE INCLUDED IN ERP ANALYSIS

Fertilizer, pesticide, and herbicide markets are liberalized, and prices that farmers pay are not affected by public policy. Trinidad and Tobago is a major ammonia producer, and fertilizers are imported duty-free with the exception of urea (10% import duty). Therefore, the NRP for those purchased inputs is close to 0. Trinidad and Tobago has maintained a fuel subsidy (3.6% of operational costs in hot pepper production and 20% of operational costs in pumpkin production, according to the case studies conducted in the framework of this analysis). In the absence of reliable data on historic prices paid by farmers for fuel, the value of the subsidy was assumed to be 50% of the diesel price during the whole period of study, based on the prices reported in the 2016 budget discussions (GORTT, 2016).⁵⁸

ERP WAS NEGATIVE FOR SELECTED CROPS

Since the level of support to tradeable inputs was not substantial in Trinidad and Tobago in the period of study, ERP for pumpkin and hot pepper follows the nominal rate of protection (NRP)⁵⁹ closely and confirms the results of NRP estimates (Figure 40). In case of negative NRP, the situation we observe for both commodities analyzed, in the absence of any policy on input markets, the ERP (negative as well) is always lower than the NRP. Fuel subsidies contribute to an increased ERP for both pumpkin and hot pepper than it would be in the absence of input policy, but this

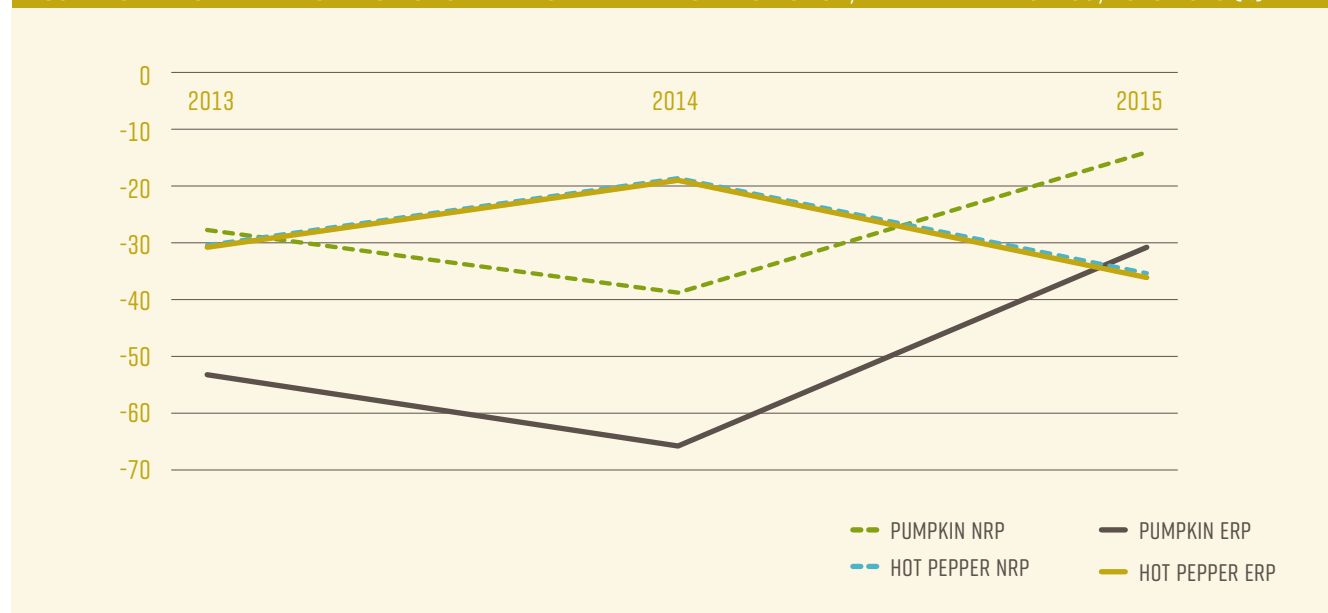
⁵⁷ Due to input substitution, the production technology would probably be different in the reference case, while in the ERP methodology, the reference value added is calculated under the assumption of the unchanged input quantities.

⁵⁸ In 2015, the subsidy was reduced, so this approach undervalues the level of the fuel subsidy.

⁵⁹ NRP is calculated as the difference between domestic and reference prices, expressed as a percentage. It is negative when domestic prices are lower than reference prices.

upward shift is not very noticeable. The ERP for both commodities is slightly lower than the NPR, indicating that even though farmers would pay higher prices for their tradeable inputs in the absence of fuel subsidy, the policy on the input markets has a considerably lower effect than the policy on the commodity markets. The difference between ERP and NPR for pumpkin is greater because of the higher share of tradeable input costs in the value added; this difference does not represent the fuel policy effect. The effect of fuel subsidy (the upward shift of ERP compared to its hypothetical value in the absence of input policy), was more pronounced on pumpkin farmers.

FIGURE 40: EFFECTIVE RATE OF PROTECTION AND NOMINAL RATE OF PROTECTION, TRINIDAD AND TOBAGO, 2013-2015 (%)



Source: author's estimates.

ERP TRENDS AND INDICATORS DO NOT DIFFER FROM THOSE OF NRP OR MPS

The ERP does not reveal any different trends or implicit support or taxation, other than those captured by the NRP and other indicators of support by commodity (see Section 3.3.1). This is because there is no border protection in place for most inputs, and cost compensation support is concentrated on fixed inputs such as on-farm infrastructure rather than purchased inputs, and such policy is not included in the ERP calculation.

3.3.2. BUDGET SUPPORT EVALUATION

Budget transfers to individual producers are included in PSE. Administrative costs, spending on performing regulatory functions, and salaries are not included in PSE/GSSE according to the methodology requirements. However, salaries of inspectors, extension officers, veterinary service staff, etc. are included in the respective expenditure category, as they provide a specific service to farmers.

MANY BUDGET TRANSFERS ARE CARRIED FORWARD YEAR TO YEAR

The budget in Trinidad and Tobago is not program-based, and each line item directs transfers to a specific administrative function or project. Transfers were mostly carried forward year to year: very few projects had limited timeframes, after which the impact of the project may be assessed and possibly the funds reallocated. Most projects were simply extended automatically without detailed review as part of the budget process. The reform of public finance management is ongoing.

MOST TRANSFERS TO INDIVIDUAL PRODUCERS WENT TO INPUT USE IN LIVESTOCK SUBSECTORS

The summary of budget transfers that benefit producers individually and are thus included in the PSE indicator, is presented in Table 8, with an indication of the commodities they were mostly directed to. Livestock producers received more support than other subsectors, in the form of both price support and budget transfers. Transfers to former sugar producers and flood damage compensation have also played an important role in recent years.

TABLE 11: BUDGET TRANSFERS TO PRODUCERS INDIVIDUALLY

PAYMENTS BASED ON:	2010	2011	2012	2013	2014	2015	SHARE IN TOTAL 2013-15 (%)
INPUT USE: LIVESTOCK	27.47	33.78	35.86	43.54	45.39	56.91	38.95
NON-CURRENT AREA: FORMER SUGAR INDUSTRY	-	-	-	1.00	33.83	26.50	16.38
INPUT USE: ALL COMMODITIES	38.62	25.15	51.36	39.54	37.61	25.62	27.45
CURRENT RECEIPTS/INCOME: FLOOD DAMAGE	18.61	14.69	9.67	3.83	9.44	17.00	8.09
INPUT USE: CITRUS	1.50	5.00	5.00	3.50	2.97	3.80	2.74
INPUT USE: COCOA	3.50	4.12	2.99	3.43	3.99	2.00	2.52
INPUT USE: SMALL RUMINANTS	0.05	0.80	2.80	7.79	1.01	0.83	2.57
INPUT USE: NON-MPS COMMODITIES	-	-	1.00	0.98	0.78	0.48	0.60
INPUT USE: BANANAS	0.10	0.10	0.10	0.40	0.40	0.20	0.27
INPUT USE: HONEY	-	-	-	-	0.09	0.20	0.08
OTHER: CASSAVA	0.20	0.20	0.20	0.20	0.20	0.20	0.16
OTHER: COCONUT	0.10	0.10	0.10	0.10	0.10	0.10	0.08
INPUT USE: HOT PEPPER	0.20	0.10	0.10	0.10	0.10	-	0.05
INPUT USE: VEGETABLES	-	-	-	0.25	-	-	0.07
OTHER: ALL COMMODITIES	5.10	3.21	-	-	-	-	-
TOTAL TRANSFERS TO PRODUCERS IN PSE	95.45	87.27	109.18	104.66	135.91	133.84	100.00

Source: author's estimates based on: Republic of Trinidad and Tobago Estimates of Expenditure, various years.

3.3.3. GENERAL SERVICES SUPPORT ESTIMATE

GENERAL SERVICES PLAYED A MAJOR ROLE IN SUPPORT TO AGRICULTURE

General services rightfully occupied an important place in the structure of support to agriculture in Trinidad and Tobago, and during the period of study the importance of this type of support increased. The value of GSSE was TT\$ 254 million (US\$ 40 million) in 2015, 68% more than in 2010.

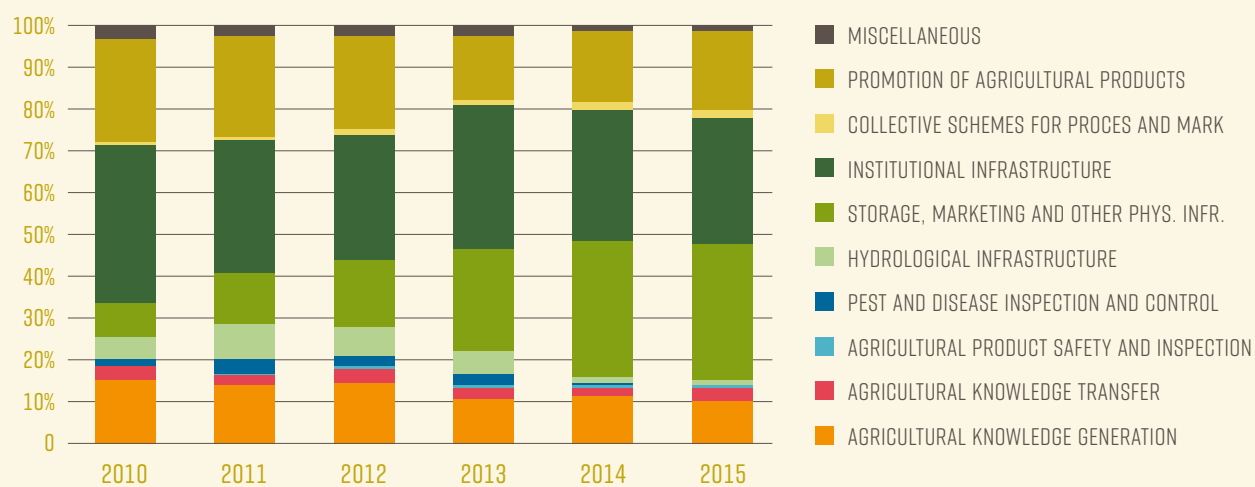
INFRASTRUCTURE WAS THE MAIN FOCUS OF GENERAL SERVICES SUPPORT; MORE FUNDS WENT TO MARKETING AND PROMOTION THAN TO RESEARCH

The structure of support to general services in Trinidad and Tobago is presented in Figure 41. The majority of transfers to general services support went to support infrastructure development. Public policy focused on both institutional infrastructure (including establishing land rights and legislature development) and physical infrastructure.

At the same time, inspection services and food safety transfers amounted on average to only 2.2% of the general services support.

Research and development support is a crucial factor in ensuring the competitiveness of Trinidad and Tobago's agriculture. Measures dedicated to improved productivity, such as development of new, more productive and disease-resistant crop varieties and livestock breeding programs are included in the policy support for most commodities. However, the government dedicates less funds to research and development programs than it does to marketing and promotion.

Support to marketing and promotion of agricultural commodities by NAMDEVCO was also substantial, representing about 20% of support to general services. These transfers, however, decreased slightly over time.

FIGURE 41: GENERAL SERVICES SUPPORT STRUCTURE, TRINIDAD AND TOBAGO. 2010-2015 (%)

Source: author's estimates.

INFRASTRUCTURE TRANSFERS WENT TO ROAD REHABILITATION AND POST-HARVEST INFRASTRUCTURE DEVELOPMENT

Development of infrastructure has focused on the major constraints on agricultural competitiveness: roads and post-harvest packing and storage infrastructure, and transfers from the budget reflect the government's recognition of the importance of those areas. Financing for physical infrastructure development increased six times during the period of study, from TT\$13 million to TT\$84 million. At the same time, the impact of such programs remains unknown and will depend on many factors. However, irrigation infrastructure attracted less attention and financing decreased over time.

TABLE 12: PHYSICAL INFRASTRUCTURE SUPPORT IN TRINIDAD AND TOBAGO (TT\$ MN)

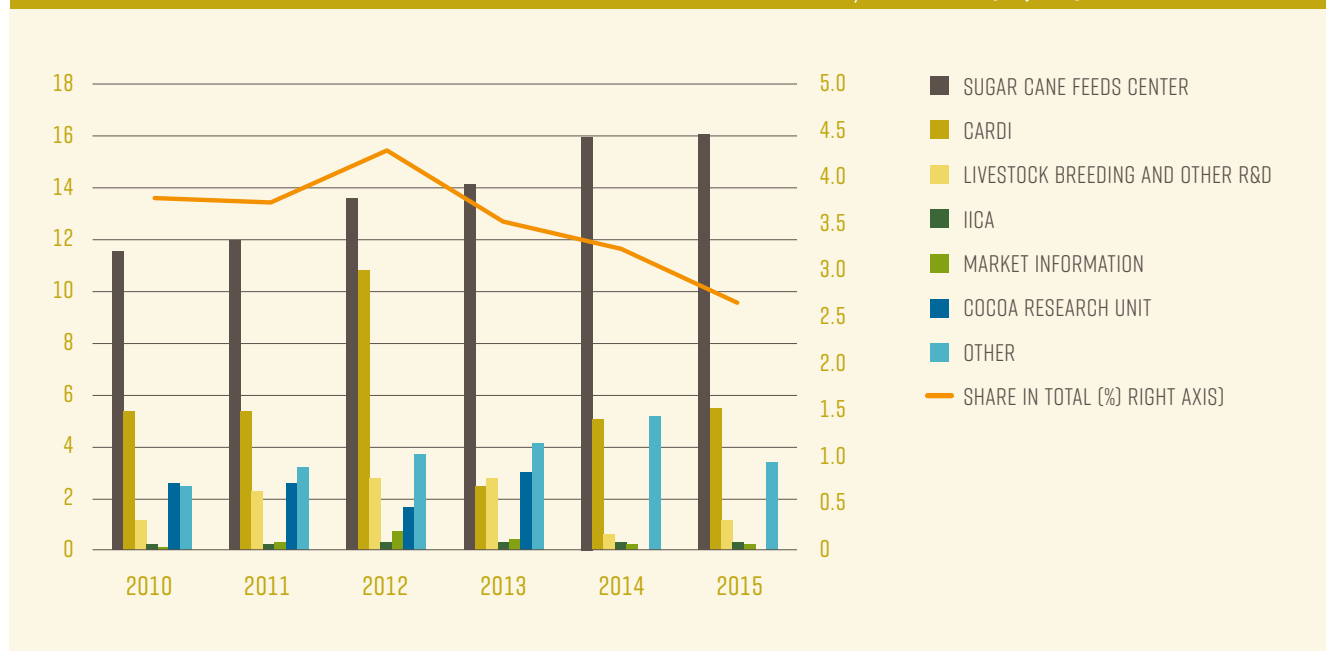
	2010	2011	2012	2013	2014	2015
WATER MANAGEMENT, FLOOD CONTROL, DRAINAGE AND IRRIGATION PROJECTS	8.1	15.4	16.2	16.0	3.9	3.1
AGRICULTURAL ACCESS ROADS	8.5	15.5	31.3	43.1	53.9	73.6
PACKING HOUSES	1.0	1.0	0.5	14.0	20.3	9.0
OTHER PHYSICAL INFRASTRUCTURE	3.2	5.5	4.9	4.9	2.9	1.4

Source: author's estimates based on: Republic of Trinidad and Tobago Estimates of Expenditure, various years.

THE SHARE OF SUPPORT FOR RESEARCH AND DEVELOPMENT IN THE TOTAL BUDGET DECREASED

Like in other Caribbean countries, it is difficult to properly measure the transfers to research and development because significant support in this area comes from international projects. Thus, the FAO, CARDI, UWI, and IICA share the results of their research with Trinidad and Tobago among other Caribbean countries. However, even taking this into account, financing for research and development activities was an important part of Trinidad and Tobago's general services expenditures, accounting for more than 10% of GSSE over the whole period of study. Its share in total agricultural expenditures declined from 4.3% in 2012 to 2.6% in 2015. Most transfers to R&D went to the Sugar Cane Feeds Center, a research and development center for the livestock subsector.

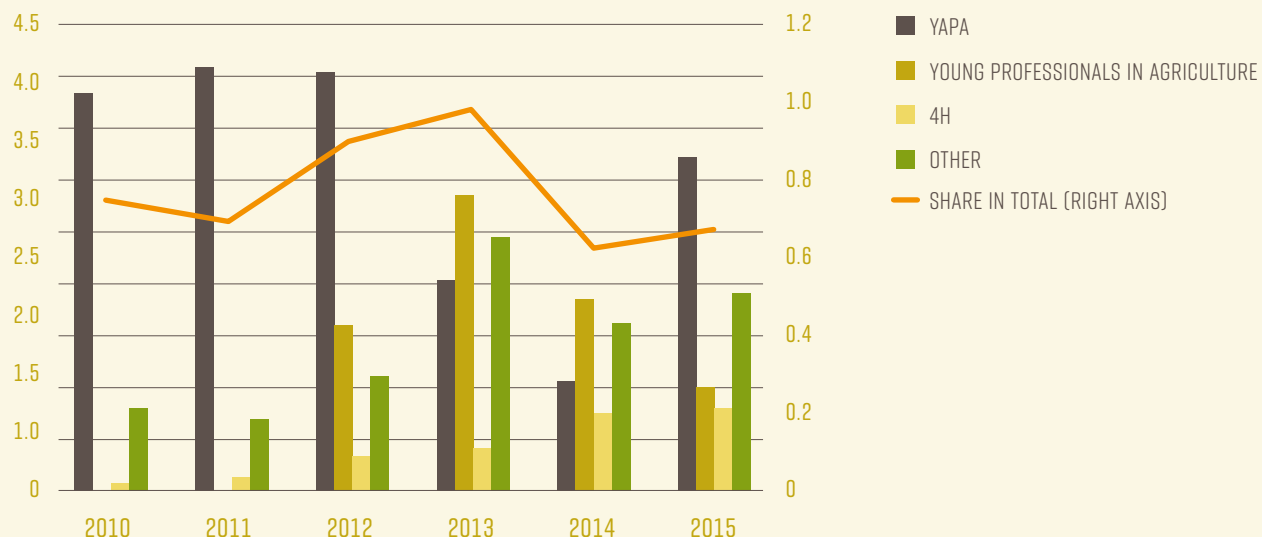
FIGURE 42: RESEARCH AND DEVELOPMENT TRANSFERS IN TRINIDAD AND TOBAGO, 2010-2015 (TT\$ MN)



Source: author's estimates.

TRAINING PROGRAMS TARGETED YOUNG PEOPLE

The YAPA program was the main training program in agriculture. Its goal was to increase employment in agriculture. Similar to research expenditures, the share of financing of knowledge transfers in the agricultural budget decreased since 2012 (Figure 43).

FIGURE 43: AGRICULTURAL EDUCATION AND TRAINING PROGRAMS IN TRINIDAD AND TOBAGO, 2010-2015 (TT\$ MN)

Source: author's estimates.

MARKETING AND PROMOTION ACTIVITIES PERFORMED BY NAMDEVCO

NAMDEVCO operates the packing houses, performs grading and quality control, expands markets internally (by establishing contacts with supermarkets) and externally, operates farmer's markets, and organizes exhibitions. NAMDEVCO operates the National Agricultural Market Information System of Trinidad and Tobago (NAMISTT). It also develops new value-added food products and organizes pilot production. NAMDEVCO's packing houses play a crucial role in ensuring that the quality is acceptable at the export markets, which is especially important for export crops like pumpkins and hot peppers.

3.3.4. CONSUMER SUPPORT ESTIMATE

The consumer support estimate (CSE) measures transfers to consumers arising from agricultural policy. In the OECD PSE methodology, the consumer is considered the primary buyer of the farm output and not the final consumer.

SUPPORT TO CONSUMERS REFERS TO THE PRIMARY CONSUMERS AT FARM GATE

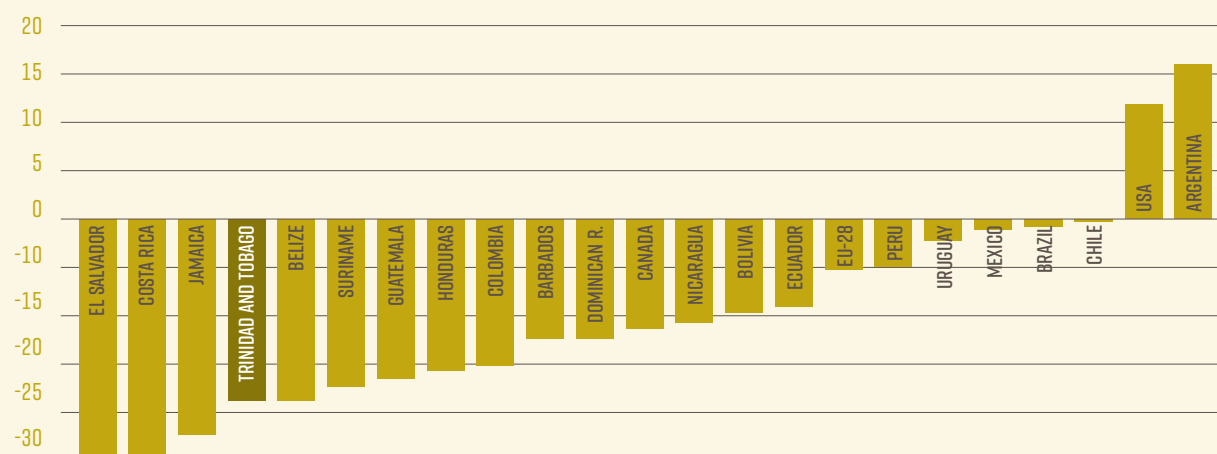
Support to consumers consists of price support (or implicit taxation if negative) and budget transfers to consumers. Budget transfers to consumers in Trinidad and Tobago are provided in the form of support to agri-processors. While there is a general requirement to use locally produced food in the school meals program, the role of this program in increasing consumption of agricultural commodities is unknown.⁶⁰ The Targeted Conditional Cash Transfer (Food Card⁶¹) Programme is not linked to agricultural support. Therefore, the budget for school meals and the food cards program was not included in the estimate of the transfers to consumers of locally produced food.

CONSUMERS ON AVERAGE PAY HIGHER PRICES FOR AGRICULTURAL COMMODITIES AS A RESULT OF AGRICULTURAL POLICY

As a result of agricultural policy in Trinidad and Tobago, primary consumers on average pay higher prices for agricultural commodities, as demonstrated by the negative CSE (Figure 44). Without adequate social policy, this negative support can adversely affect the low-income population. Price support to producers at the expense of consumers also limits demand for agricultural output and reduces international competitiveness. At the same time, the reduction of price support to producers (MPS), which is the most distorting and not the most efficient form of support, will benefit the consumers and does not require fiscal resources.

⁶⁰ The School Nutrition Program was audited in 2014, and the Auditor General concluded that the impact of this program on agriculture was unknown. The program uses mostly local vegetables, but imported cereals, protein (milk and meat), and legumes. (Auditor General, 2014).

⁶¹ This program provides people in poverty with a debit card for purchase of food.

FIGURE 44: CSE% IN TRINIDAD AND TOBAGO AND OTHER COUNTRIES, AVERAGE VALUE FOR 2013-2015*

* Dominican Republic, Uruguay (2011-2013); Argentina, Costa Rica, Ecuador, Honduras (2010-2012); El Salvador (2011-2012); Guatemala (2009-2011); Nicaragua (2009-2010); Bolivia (2008-2009); Jamaica, Barbados, Belize, Suriname (2012-14).
Source: author's estimates.

3.3.5. TOTAL SUPPORT ESTIMATE

TOTAL TRANSFERS REPRESENT A SMALLER SHARE OF GDP THAN IN MOST OTHER LAC COUNTRIES

GSSE, PSE, and transfers to consumers from taxpayers together are called the total support estimate (TSE). It includes all transfers in the economy that arise from national agricultural policy. TSE% was only 0.34% of the national GDP and amounted to TT\$560 million (US\$88 million) in 2015 (Figure 45).

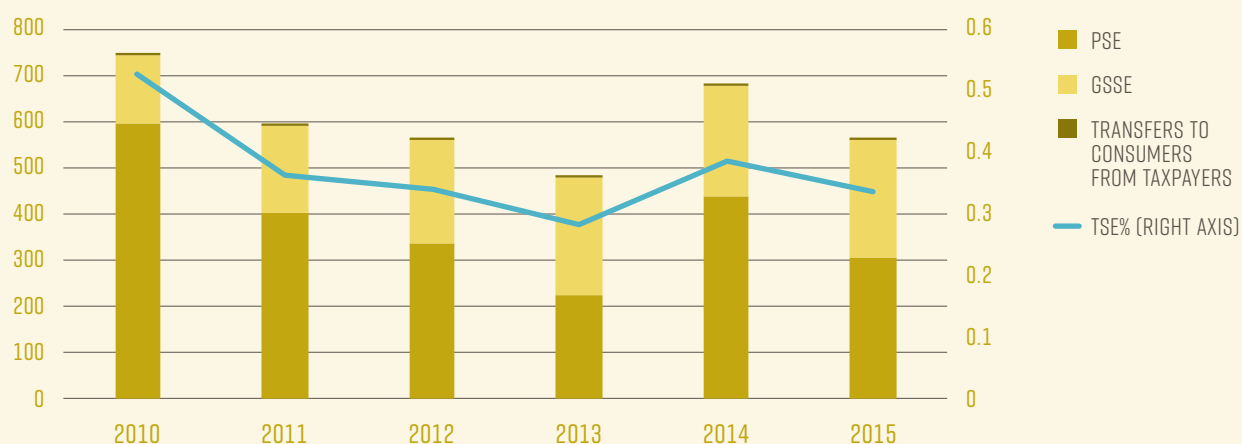
A CONSIDERABLE AMOUNT OF SUPPORT WAS PROVIDED IN THE FORM OF GENERAL SERVICES

In Trinidad and Tobago, 44% of total transfers arising from agricultural policy was directed to support general services. This is one of the highest levels in the region, as only a few countries in Latin America and the Caribbean have a GSSE that accounts for more than 40% of TSE (Chile, Suriname, Uruguay, and Barbados - see Figure 46). As a recent regional study demonstrated, GSSE measures are less distorting and contribute most to long-term competitiveness and growth in agriculture.⁶² Results show that a

⁶² IDB working paper (Anriquez, Foster, Ortega, Falconi, and De Salvo, 2016)

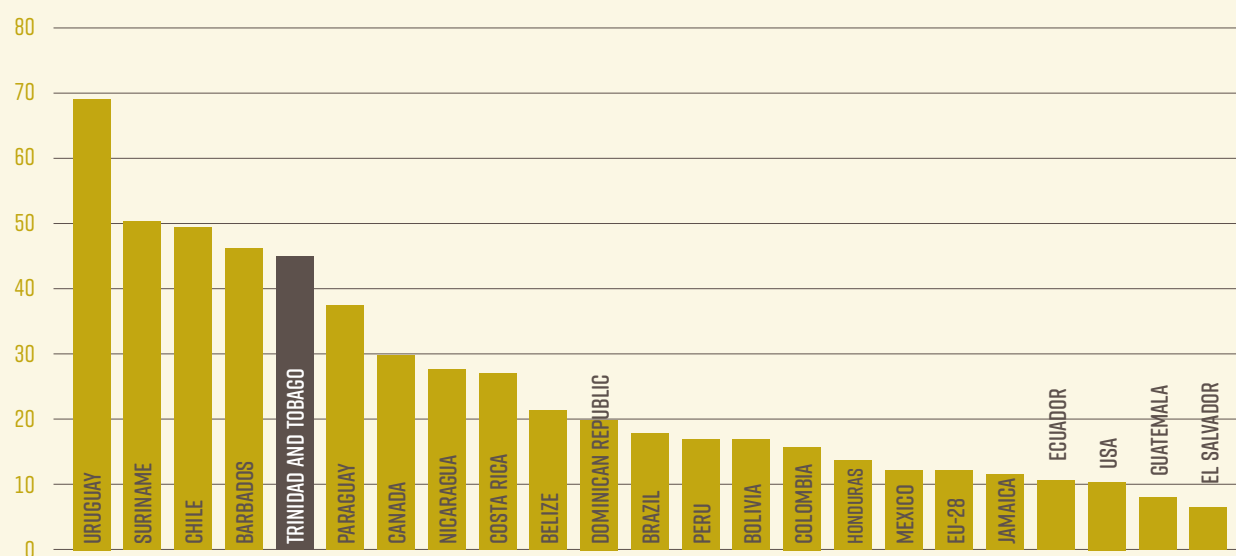
shift of 10 percentage points of the agricultural budget from private goods to general services, while maintaining total spending constant, leads to approximately a 5% increase in value added per capita. Achieving the same increase through increases in total spending would require an increase of approximately 25% or more while holding the mix constant.

FIGURE 45: TOTAL SUPPORT ESTIMATE, TRINIDAD AND TOBAGO. 2010-2015 (TT\$ MN)



Source: author's estimates.

FIGURE 46: GSSE AS A % SHARE OF TSE, IN TRINIDAD AND TOBAGO AND OTHER COUNTRIES. AVERAGE VALUE FOR 2013-2015*



* Dominican Republic, Uruguay (2011-2013); Argentina, Costa Rica, Ecuador, Honduras (2010-2012); El Salvador (2011-2012); Guatemala (2009-2011); Nicaragua (2009-2010); Bolivia (2008-2009); Jamaica, Barbados, Belize, Suriname (2012-2014).

Source: author's estimates.

4. CONCLUSIONS AND RECOMMENDATIONS



Agriculture does not contribute significantly to the GDP of Trinidad and Tobago (agriculture's share in GDP is 0.5%, and in total employment is 3.4%). However, it is one of the focus areas of public policy, as the government attempts to diversify an energy-driven economy and control food price inflation. A well-developed agro-processing industry is a potential consumer for increased agricultural production.

Many agricultural subsectors are profitable and potentially competitive. However, this potential cannot be realized without addressing low productivity, especially as it relates to small farmers.

Trade policy is characterized by a simple regulation regime with minimum intervention and flat import tariffs. This approach ensures efficient price transmission between domestic and international markets.

The liberal trade policy regime is combined with high degree of government intervention in domestic policy. Significantly distortive measures such as subsidies and guaranteed prices are combined with direct government involvement in agricultural production. Expanding agricultural production is one of the policy goals, and the government attempts to achieve this by acquiring agricultural holdings and engaging in production directly or through public-private partnerships.

The results of the PSE estimates indicate the following:

- The level of support to the agricultural sector in Trinidad and Tobago was positive and its share in gross farm receipts, measured by PSE%, was relatively high within the period of study.
- The total transfers arising from policy measures that support agriculture (measured by TSE%) account for only a small share of GDP, which is as expected given the small share of agriculture in GDP.
- National market price support levels mainly reflect support to the poultry subsector due to the subsector's overwhelming share of the gross agricultural output that this subsector represents.
- A considerable share of support comes from budget transfers, and the role of price support is diminishing.
- The effects of public policy, as demonstrated by SCTs, range from positive for import-competing products to negative for export crops like hot peppers and pumpkins. The effect is neutral for milk and cassava.
- The poultry subsector is well protected by price support.
- The most distorting types of support prevail, but the share of support for general services is among the highest in the region.
- Infrastructure development attracts adequate attention, but transfers to irrigation and drainage, as well as to food safety and inspection services, are relatively low.

THE LEVEL OF SUPPORT TO THE AGRICULTURAL SECTOR IN TRINIDAD AND TOBAGO WAS POSITIVE AND ITS SHARE IN GROSS FARM RECEIPTS, MEASURED BY PSE%, WAS RELATIVELY HIGH WITHIN THE PERIOD OF STUDY.

The policy analysis and results estimates **suggest the following recommendations:**

REORIENT AGRICULTURAL POLICY TOWARDS LESS PRODUCTION DISTORTING GOALS AND ACTIONS

The policy goals need to account for the fact that some issues the sector is facing, such as its diminishing contribution to GDP and even faster diminishing contribution to employment, are structural changes in the country's economy (which are not necessarily negative) and cannot be easily corrected by agricultural policy. Instead, policy directions focused on the profitability and productivity of the sector, such as enhanced research, development and extension support and creation of efficient post-harvest value chains and pest, disease and quality management systems, will help create a possibly small, but efficient agricultural sector and exploit some specific competitive advantages.

ENHANCE NON-AGRICULTURAL EMPLOYMENT IN RURAL AREAS

Since structural changes in the economy are inevitably leading to decreased agricultural activity, the suggestion is to redirect policy goals from enhancing employment in agriculture to enhancing employment in rural areas, with a focus on non-agricultural rural employment.

IMPROVE THE BUDGET PROCESS

The budget process would benefit from a program-based structure and the introduction of regular performance monitoring and evaluation mechanisms. Currently, disbursements are carried forward from year to year and are not affected by public expenditure reviews and/or impact evaluations.

REDUCE DIRECT INTERVENTION AND ENHANCE SUPPORT FOR GENERAL SERVICES

Restricting support measures to a long but still limited list of commodities reduces the flexibility of production decisions and obstructs farmers' ability to respond to market needs. Direct participation of publicly-owned entities in agricultural production distorts markets and leads to excessive supply, which suppresses prices and increases the time required to react to market signals. Price support measures, on the other hand, also distort markets. It would be more beneficial for the agricultural sector if the government were to focus on providing general services support to private entities and on offering incentives to investors.

REFERENCES

- **Anriquez, G., Foster, W., Ortega, J., Falconi, C., & De Salvo, C. P. (2016).** *Public Expenditures and the Performance of Latin American and Caribbean Agriculture*. August 2016.
- **CARDI (2007, 2011).** *Hot Pepper Production Manual for Trinidad and Tobago*. CARDI, St. Augustine, Trinidad and Tobago, West Indies.
- **CARDI (2015).** *Cassava and sweet potato: suitability of popular Caribbean varieties for value added product development*. CARDI, IICA, Port of Spain. IICA, 2015.
- **Central Statistical Office of Trinidad and Tobago CSO (2005).** *2004 Agricultural Census Report for Trinidad and Tobago*. The Republic of Trinidad and Tobago CSO.
- **Department of Agricultural Economics and Extension University of the West Indies (2007).** *The Hot Pepper Industry in CARICOM*. Competitiveness & Industry Development Strategies, St. Augustine.
- **Elias, C. (2013).** *The Private Sector Assessment Report for Trinidad and Tobago*. Inter-American Development Bank.
- **FAO (2013).** *Jamaica - Review of Agricultural Sector Support and Taxation*. Food and Agricultural Organization of the United Nations. Rome, 2013.
- **FAO (2015).** *Regional Conference on Cassava In the Caribbean and Latin America*. In Conference Report. Rome, ITALY: FAO.
- **FAO (2016).** *Cassava in the Caribbean region: A look at the potential of the crop to promote agricultural development and economic growth*. Bridgetown, 2016.
- **Government of the Republic of Trinidad and Tobago.** *Budget Statement*. Various years.
- **Government of the Republic of Trinidad and Tobago.** *Estimates of Expenditure*. Various years.
- **Government of the Republic of Trinidad and Tobago.** *Surveying the Scene. The National Spatial Development Strategy for Trinidad and Tobago*. Ministry of Planning and Development, 2013.
- **Government of the Republic of Trinidad and Tobago.** *Investment Opportunities in Agriculture*. 2011.

- **Government of the Republic of Trinidad and Tobago.**
Annual Report on Performance. Various years.
- **IICA (1994).** *Trinidad and Tobago: An Agricultural Sector Study of Tobago.*
- **IMF (2013).** *IMF Country Report No. 13/306.* Trinidad and Tobago.
- **IMF (2016).** *IMF Country Report No. 16/204. Staff Report for the 2016 Article IV Consultation.* Trinidad and Tobago.
- **Inter-American Development Bank (2014).** *Understanding the economics of climate adaptation in Trinidad and Tobago: full report.*
Inter-American Development Bank. IDB Monograph ; 219.
- **Løvendal, C.R., Kristian Thor Jakobsen K.T., and Jacque, A. (2007).** *Food Prices and Food Security in Trinidad and Tobago.* FAO, ESA Working Paper No. 07-27.
- **Mac Clean, S. (2013).** *Trade Policy and Strategy for Trinidad and Tobago, 2013-2017* (Vol. 53). Retrieved from <http://www.publish.csiro.au/?paper=ANv53n1toc>
- **MALF (2011).** *Incentive Programme.*
- **MALF (2011a).** *The National Food Production Action Plan 2012-2015.* "Agriculture Now".
- **Mohammed A. (2013).** *Analysis of Production and Trade of Selected Root and Tuber Crops within the CARICOM Region, USA, Canada and the United Kingdom.* CARDI.
- **Neptune, L., & Jacque, A. (2007)**
Competitiveness of Cocoa Production Systems in Trinidad and Tobago.
In N. Badrie (Ed.), proceeding of the 26th West Indies Agricultural Economics Conference (Caribbean Agro-Economics Society) in collaboration with the 42nd Caribbean Food Crops Society Meeting FOOD SAFETY AND VALUE ADDED PRODUCTION AND MARKETING (pp. 50–58).
- **OECD (2010).** *Producer Support Estimate and Related Indicators of Agricultural Support.* September, 1–178.
- **OECD (2015).** *Agricultural Policy Monitoring and Evaluation 2015.*
OECD Publishing, Paris. DOI http://dx.doi.org/10.1787/agr_pol-2015-en
- **OECD (2016).** *OECD's Produce Support Estimate Database.* <http://www.oecd.org/tad/agricultural-policies/producerandconsumersupportestimatesdatabase.htm>
- **Orden, David.** *Agricultural Trade and Pricing Policies in Trinidad and Tobago.*
Draft Paper for IDB Investment Sector Loan, July 1992.
- **Patterson-Andrews H., Pemberton C. A.** *Factors Affecting Profitability of Small Scale Farming in Southern Trinidad & Tobago.* International Journal of Food and Agricultural Economics ISSN 2147-8988 Vol. 2 No. 3 pp. 1-18.

- **Ramiro Moya, Anne-Marie Mohammed, Sandra Sookram (2010)**
Productive development policies in Trinidad and Tobago: A critical review.
Inter-American Development Bank. IDB working paper series ; 115.
- **Republic of Trinidad and Tobago, Ministry of Agriculture, Land and Marine Resources (2008).** *Strategies for Increasing Agricultural Production for Food and Nutrition Security in Trinidad and Tobago.*
- **Republic of Trinidad and Tobago, Ministry of Finance.** *Review of Economy.*
Various years.
- **Republic of Trinidad and Tobago, Ministry of Planning and Sustainable Development (2014).** *The Development of the Honey Industry in Trinidad and Tobago.*
- **Schwab, K., Sala-i-Martin, X., & Brende, B. (2015).** *The global competitiveness report 2015–2016.* World Economic Forum (Vol. 5)
- **Seecharan, D., & Jacque, A. (2007)**
A Competitiveness Study of Four Rice Production Systems in Trinidad and Tobago.
In N. Badrie (Ed.), proceeding of the 26th West Indies Agricultural Economics Conference (Caribbean Agro-Economics Society) in collaboration with the 42nd Caribbean Food Crops Society Meeting FOOD SAFETY AND VALUE ADDED PRODUCTION AND MARKETING (pp. 36-49).
- **The World Bank (2007).** *Reforming agricultural trade for developing countries.*
Edited by Alex F. McCalla, John Nash.
- **The World Bank (2007a).** *World Development Report 2008. Agriculture for Development.* Washington, DC.
- **The World Bank (2009).** *Distortions to Agricultural Incentives, under the leadership of Kym Anderson of the World Bank's Development Research Group.*
Accessed at www.worldbank.org/agdistortions
- **The World Bank (2016).** *Doing Business 2016 Measuring Regulatory Quality and Efficiency.* Washington, DC. <http://doi.org/10.1596/978-1-4648-0667-4>
- **Turtle Village Trust (n.d.).** *A Simple Guide for Hot Pepper Production.*
Trinidad and Tobago.
- **Westlake, M. J. (2014).** *Developing Sustainable, Green and Inclusive Agricultural Value Chains in the Caribbean and the Pacific Islands.* CTA and FAO, 2014.
- **WTO (2012).** *Trade Policy Review.* Report by the Secretariat. Trinidad and Tobago.

LIST OF FIGURES

• Figure 1: GDP growth, agricultural value-added growth (2000=100) and inflation rate (%).....	10
• Figure 2: Crop and livestock production indices for Trinidad and Tobago.....	11
• Figure 3: Agri-Food trade balance (January-September), Trinidad and Tobago	12
• Figure 4: Agri-Food exports in 2014, Trinidad and Tobago	12
• Figure 5: Infrastructure development index, Trinidad and Tobago.....	13
• Figure 6: Costs of trade (US\$) and trading across borders DTF value (right axis)	14
• Figure 7: Agriculture value added per worker for selected countries of the Caribbean region, constant 2005 (US\$).....	15
• Figure 8: Agriculture value added per 1 hectare of arable land for selected countries of the Caribbean region, constant 2005 (US\$)	15
• Figure 9: Share of agriculture-related expenditures in total budget expenditures (%)	24
• Figure 10: Grants to the ADB from the budget and loans disbursed annually* (TT\$ mn).....	32
• Figure 11: Share of MPS commodities to total value of agricultural production in Trinidad and Tobago, average for 3 years (2013-2015)	41
• Figure 12: Producer support estimate composition in Trinidad and Tobago, 2010-2015 (TT\$ mn)	45
• Figure 13: MPS as a percent share of PSE in Trinidad and Tobago and other countries, average value for 2013-2015 (%)*	45
• Figure 14: PSE% in Trinidad and Tobago and other countries, average value for 2013-2015*.....	48
• Figure 15: Producers single commodity transfer in Trinidad and Tobago, average 2010-2012 and 2013-2015 (%).....	50
• Figure 16: Rice production and yields in Trinidad and Tobago and other countries.....	53
• Figure 17: Producer SCT%, producers and reference prices (TT\$/t) for rice in Trinidad and Tobago, 2010-2015.....	54
• Figure 18: Production of root crops in Trinidad and Tobago (tons)	56
• Figure 19: Root crops productivity in Trinidad and Tobago and other countries (tons/ha)	56
• Figure 20: Producer SCT (TT\$ mn), producers and reference prices (TT\$/t, right axis) for sweet potatoes and cassava in Trinidad and Tobago, 2010-2015	57

• Figure 21: Cocoa production in Trinidad and Tobago (tons)	58
• Figure 22: Cocoa yields in Trinidad and Tobago and other countries (kg/hectare).....	59
• Figure 23: Composition of cocoa SCT in Trinidad and Tobago, 2010-2015 (TT\$ mn)	60
• Figure 24: Production volumes (000 tons) and prices (TT\$/ton, right axis) of hot pepper in Trinidad and Tobago.....	61
• Figure 25: Hot pepper productivity in Trinidad and Tobago and other countries (t/ha)	61
• Figure 26: Hot pepper value chain, share of each component's value, case study (%)	62
• Figure 27: Hot pepper value chain, Trinidad and Tobago.....	63
• Figure 28: Producer SCT (TT\$ mn), producers and reference prices (TT\$/t) for hot pepper and pumpkin in Trinidad and Tobago, 2010-2015.....	64
• Figure 29: Pumpkin yields in Trinidad and Tobago and other countries (tons/hectare)	65
• Figure 30: Pumpkin production and exports* in Trinidad and Tobago (tons)	66
• Figure 31: Pumpkin value chain, share of each component's value, case study (%)	67
• Figure 32: Pumpkin value chain, Trinidad and Tobago.....	68
• Figure 33: Christophine production (tons) and prices (TT\$/t, right axis), 2010-2015	70
• Figure 34: Pineapple production and prices, 2010-2015.....	70
• Figure 35: Milk production in Trinidad and Tobago (tons).....	72
• Figure 36: Milk yields in Trinidad and Tobago and other countries (kg/animal)	72
• Figure 37: Poultry production in Trinidad and Tobago (tons)	74
• Figure 38: Small ruminants production in Trinidad and Tobago (tons)	74
• Figure 39: Honey production and prices, 2010-2015.....	76
• Figure 40: Effective rate of protection and nominal rate of protection, Trinidad and Tobago, 2013-2015 (%)	78
• Figure 41: General services support structure, Trinidad and Tobago, 2010-2015 (%)	82
• Figure 42: Research and development transfers in Trinidad and Tobago, 2010-2015 (TT\$ mn)	83
• Figure 43: Agricultural education and training programs in Trinidad and Tobago, 2010-2015 (TT\$ mn)	84
• Figure 44: CSE% in Trinidad and Tobago and other countries, average value for 2013-2015*.....	86
• Figure 45: Total support estimate, Trinidad and Tobago, 2010-2015 (TT\$ mn)	87
• Figure 46: GSSE as a percent share of TSE, in Trinidad and Tobago and other countries, average value for 2013-2015*	87

LIST OF TABLES

• Table 1	Selected macroeconomic indicators, Trinidad and Tobago.....	9
• Table 2	State-owned and MALF-affiliated companies.....	22
• Table 3	Domestic support programs in Trinidad and Tobago, 2010-2015.....	26
• Table 4	Guaranteed minimum prices, in effect in 2011-2015.....	28
• Table 5	Establishment of small scale packing houses for agricultural production (TT\$ mn).....	29
• Table 6	Tariffs applied by Trinidad and Tobago to agricultural imports, 2014.....	35
• Table 7	Reference price data description and margin adjustments.....	42
• Table 8	Support estimate in Trinidad and Tobago, 2010-2015 (TT\$ mn).....	46
• Table 9	Components of producers single commodity transfer in Trinidad and Tobago: Market price support and budget transfers by commodity, 2010-2015 (TT\$ mn).....	49
• Table 10	Commodity-specific policy in Trinidad and Tobago.....	51
• Table 11	Budget transfers to producers individually.....	80
• Table 12	Physical infrastructure support in Trinidad and Tobago (TT\$ mn).....	82
• Table 13	Classification of budget transfers in PSE according to OECD methodology.....	100
• Table 14	Classification of budget transfers in GSSE according to OECD methodology.....	101

ANNEX 1:

PSE METHODOLOGY DEFINITIONS

PSE INDICATORS

PRODUCER SUPPORT ESTIMATE (PSE)

The annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm-gate level, arising from policy measures that support agriculture, regardless of their nature, objectives, or impacts on farm production or income.

PERCENTAGE PSE (PSE%)

PSE as a share of gross farm receipts.

GENERAL SERVICES SUPPORT ESTIMATE (GSSE)

The annual monetary value of gross transfers to general services provided to agricultural producers collectively (such as research, development, training, inspection, marketing, and promotion) arising from policy measures that create enabling conditions for the primary agricultural sector through development of private or public services, institutions, infrastructure, regardless of their objectives and impacts on farm production and income, or consumption of farm products. The GSSE does not include any transfers to individual producers.

CONSUMER SUPPORT ESTIMATE (CSE)

The annual monetary value of gross transfers from (to) consumers of agricultural commodities, measured at the farm gate level, arising from policy measures that support agriculture, regardless of their nature, objectives, or impacts on consumption of farm products.

PERCENTAGE CSE (CSE%)

CSE as a share of consumption expenditure (measured at farm gate) net of taxpayer transfers to consumers.

TOTAL SUPPORT ESTIMATE (TSE)

The annual monetary value of all gross transfers from taxpayers and consumers arising from policy measures that support agriculture, net of associated budgetary receipts, regardless of their objectives and impacts on farm production and income, or consumption of farm products.

PERCENTAGE TSE (TSE%)

TSE as a share of the GDP.

SINGLE COMMODITY TRANSFERS (SCT)

The annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm gate level, arising from policies linked to the production of a single commodity such that the producer must produce the designated commodity in order to receive the transfer.

PERCENTAGE SINGLE COMMODITY TRANSFERS (SCT%)

The commodity SCT as a share of gross farm receipts for the specific commodity.⁶³

MPS CALCULATION

Reference price is the price that domestic producers could have received for their production in the absence of any domestic or trade policy affecting this commodity's market. Border prices of imports or exports are often used as reference prices. Another option is to use specific border prices in close neighbor countries or in the countries playing a major role in international trade of the commodity, or stock exchange prices.

Reference price and producer's price for MPS calculations must be measured at the same level of processing and in the same market. Therefore, reference (border) prices must be adjusted for marketing margins to make them comparable with farm-gate producer prices. The adjustment is made for the cost of processing, handling, and transportation to the market where the domestically produced commodity meets the commodity from the foreign market.

⁶³ OECD 2010.

PRICE ADJUSTMENT FOR IMPORTED COMMODITY

CIF price

- + costs of transporting the product from the border to the internal wholesale market (T1)
- = price of imports at domestic market level
- cost of transporting the product from the wholesale market to the farm gate (T2)
- costs of processing farm product into imported product (S)
- = price of imports in farm gate equivalent

PRICE ADJUSTMENT FOR EXPORTED PRODUCT

FOB price

- handling and transportation costs between border and domestic wholesale market (T1)
- handling and transportation costs between wholesale market and the farm gate (T2)
- costs of processing farm product into exported product (S)
- = price of exports adjusted to the farm gate level

NRP AND ERP

Nominal Rate of Protection (NRP) is the simplest indicator of support, which was not among the outputs of this report, but was calculated as an intermediate step for ERP estimate for agricultural commodities and inputs. The following formula was used for Effective Rate of Protection (ERP) calculation:

$$ERP = \frac{VA_d - VA_r}{VA_r} * 100$$

Where VA_d – value added in domestic prices, and VA_r – value added in reference prices. Value added is estimated as the difference between the value of output and costs of tradable inputs. If both VA_r and VA_d are positive, the interpretation of ERP is similar to that of NRP. If VA_r or VA_d is negative, ERP may also become negative (depending on the relative values of the VA_d and VA_r). Negative value added in domestic prices means that the agricultural production brings negative returns on inputs. If the value added in reference prices is negative, the purchased inputs without policy intervention cost more than the value of output of the domestically produced agricultural commodity in non-policy situation. If the VA_r is positive, the negative ERP will indicate the implicit taxation of the agri-food sector resulting from the policy along the value chain. It should be noted that if both VA_r and VA_d are negative, the ERP may still be positive. This methodology assumes perfect substitution of inputs and unchanged production function between the observed and reference situation.

CLASSIFICATION OF BUDGET TRANSFERS

Budget Transfers (BTs) for calculating coefficients of support estimate can exist in the form of transfers to producers, financing of general services, or transfers to consumers. Thus, all budget transfers need to be distinguished between PSE, CSE and GSSE.

PSE categories indicate the way the policy program is implemented by indicating the base on which the transfer or subsidy is calculated, such as value of production, number of animals, input use, services provided, income, or non-commodity criteria (Table 9).

TABLE 13: CLASSIFICATION OF BUDGET TRANSFERS IN PSE ACCORDING TO OECD METHODOLOGY

CATEGORIES

A. SUPPORT BASED ON COMMODITY OUTPUT

A.1. MARKET PRICE SUPPORT

A.2. PAYMENTS BASED ON OUTPUT

B. PAYMENTS BASED ON INPUT USE

B.1. VARIABLE INPUT USE

B.2. FIXED CAPITAL FORMATION

B.3. ON-FARM SERVICES

C. PAYMENTS BASED ON CURRENT A (AREA) /AN (ANIMAL NUMBER) / R (RECEIPTS) /I (INCOME), PRODUCTION REQUIRED

C.1 BASED ON CURRENT RECEIPTS/INCOME

C.2 BASED ON CURRENT AREA/ANIMAL NUMBER

D. PAYMENTS BASED ON NON-CURRENT (HISTORICAL OR FIXED) A (AREA) /AN (ANIMAL NUMBER) /R (RECEIPTS) /I (INCOME), PRODUCTION REQUIRED

E. PAYMENTS BASED ON NON-CURRENT A (AREA) /AN (ANIMAL NUMBER) / R (RECEIPTS) /I (INCOME), PRODUCTION NOT REQUIRED

E.1. VARIABLE RATES (VARY WITH RESPECT TO LEVELS OF CURRENT OUTPUT OR INPUT PRICES, OR PRODUCTION/YIELDS AND/OR AREA)

E.2. FIXED RATES

F. PAYMENTS BASED ON NON-COMMODITY CRITERIA

F.1. LONG-TERM RESOURCE RETIREMENT

F.2. SPECIFIC NON-COMMODITY OUTPUT

F.3 OTHER NON-COMMODITY CRITERIA

G. MISCELLANEOUS PAYMENTS

Source: OECD, 2010.

Budget Transfers on financing general services have been separated from PSE and have instead been calculated as a separate indicator - General Services Support Estimate (GSSE) - since 1998 (Table 10). In 2014, OECD changed the methodology of GSSE estimate.

TABLE 14: CLASSIFICATION OF BUDGET TRANSFERS IN GSSE ACCORDING TO OECD METHODOLOGY

GENERAL SERVICES SUPPORT ESTIMATE (GSSE)

H. AGRICULTURAL KNOWLEDGE AND INNOVATION SYSTEM

HI. AGRICULTURAL KNOWLEDGE GENERATION

H2. AGRICULTURAL KNOWLEDGE TRANSFER

I. INSPECTION AND CONTROL

II. AGRICULTURAL PRODUCT SAFETY AND INSPECTION

I2. PEST AND DISEASE INSPECTION AND CONTROL

I3. INPUT CONTROL

J. DEVELOPMENT AND MAINTENANCE OF INFRASTRUCTURE

J1. HYDROLOGICAL INFRASTRUCTURE

J2. STORAGE, MARKETING AND OTHER PHYSICAL INFRASTRUCTURE

J3. INSTITUTIONAL INFRASTRUCTURE

J4. FARM RESTRUCTURING

K. MARKETING AND PROMOTION

K1. COLLECTIVE SCHEMES FOR PROCESSING AND MARKETING

K2. PROMOTION OF AGRICULTURAL PRODUCTS

L. COST OF PUBLIC STOCKHOLDING

M. MISCELLANEOUS

Source: OECD, 2015.



WWW.IADB.ORG