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ANALYSIS OF
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IN GUYANA

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1. INTRODUCTION



This report provides a comprehensive analysis of the public policy framework's effect on the agricultural sector in Guyana using the OECD's Producer Support Estimate (PSE) methodology. The PSE approach focuses on two main elements of support: (i) the effect of government policy on prices received by agricultural producers, and (ii) the support provided through budgetary transfers to the sector. The result of the analysis is a set of indicators that allows for the comparison of support levels between years as well as commodities that can serve as a baseline against which the effects of agricultural policy reforms can be measured. In addition, the level of agricultural support in Guyana can be compared with that of other countries in the region. This is the first PSE report that has been prepared for Guyana.

Before presenting the results of this quantitative analysis, a brief overview is given of the policies applied by the Government of Guyana to the agricultural sector as a whole and to specific subsectors. It covers both the country's trade policy framework as well as its domestic policies related to transfers, prices, marketing, and taxation.

THE PSE APPROACH FOCUSES ON TWO MAIN ELEMENTS OF SUPPORT: (I) THE EFFECT OF GOVERNMENT POLICY ON PRICES RECEIVED BY AGRICULTURAL PRODUCERS, AND (II) THE SUPPORT PROVIDED THROUGH BUDGETARY TRANSFERS TO THE SECTOR.

A section specifically addressing the structure of Guyana's most important value chains (rice, sugar and poultry) is also provided. These value chain analyses provide a more in-depth overview of the incentives and disincentives faced by producers of these commodities, and an indication of whether the observed distortions are the result of policies or specific value chain characteristics.

The last section of the report presents an overview of policy recommendations that are based on the analysis presented. These recommendations are meant to serve as inputs for evidence-based dialogues on potential policy changes that could strengthen the competitiveness of the agricultural sector in Guyana and render the policy framework more conducive to agricultural investment.

2. OVERVIEW OF AGRICULTURAL POLICIES



2.1 Role of the agricultural sector

Guyana is a low-income country and the third smallest country in South America after Suriname and Uruguay, with about 800,000 inhabitants and a GDP per capita of US\$4,053 (2014).¹ About 90% of Guyana's total population lives in the coastal plains, while the remaining 10% is comprised largely of indigenous populations living in the country's extensive tropical rainforests.

The agricultural and natural resource sectors play a key role in the country's economy. Together, these sectors represented approximately 28% of GDP in 2015. The main commodities include bauxite, sugar, rice, gold, and timber, which together made up 83% of exports. As shown in Table 1 below, the agricultural sector has accounted for between 18% and 19% of

**THE AGRICULTURAL AND
NATURAL RESOURCE
SECTORS PLAY A KEY ROLE IN
THE COUNTRY'S ECONOMY.**

¹ World Bank, Country Overview Guyana, <http://www.worldbank.org/en/country/guyana/overview>

GDP in recent years, with sugar, rice, and livestock being the most important sub-sectors.

As a result of high export commodity prices, the country saw an extended period of relatively high economic growth averaging 4.7% annually between 2005 and 2013. Following a drop in GDP growth to 3% in 2015, the country's economic growth is expected to return to levels of around 4% in 2016 and 2017.

TABLE 1: KEY ECONOMIC INDICATORS GUYANA

| | 2010 | 2011 | 2012 | 2013 | 2014 |
|---------------------------------------------|---------|---------|---------|---------|---------|
| CURRENT GDP (G\$ MLN) | 460,072 | 525,672 | 582,657 | 614,130 | 666,495 |
| NOMINAL GDP PER CAPITA (USD) | 2,620 | 3,018 | 3,347 | 3,496 | 3,813 |
| REAL GDP GROWTH | 4.4 | 5.4 | 4.8 | 5.2 | 5.6 |
| AGRICULTURE, FORESTRY & FISHING AS % OF GDP | 18.3 | 18.6 | 18.7 | 18.9 | 18.3 |
| SUGAR | 2.3 | 3.4 | 3.8 | 3.2 | 3.4 |
| RICE PADDY | 4.0 | 4.8 | 4.5 | 5.0 | 4.6 |
| LIVESTOCK | 2.6 | 2.6 | 2.9 | 3.2 | 3.0 |
| MANUFACTURING AS % OF GDP | 6.8 | 6.5 | 6.3 | 6.7 | 6.5 |
| SUGAR | 0.6 | 0.9 | 1.0 | 0.9 | 0.9 |
| RICE | 2.1 | 1.8 | 1.7 | 2.2 | 2.0 |

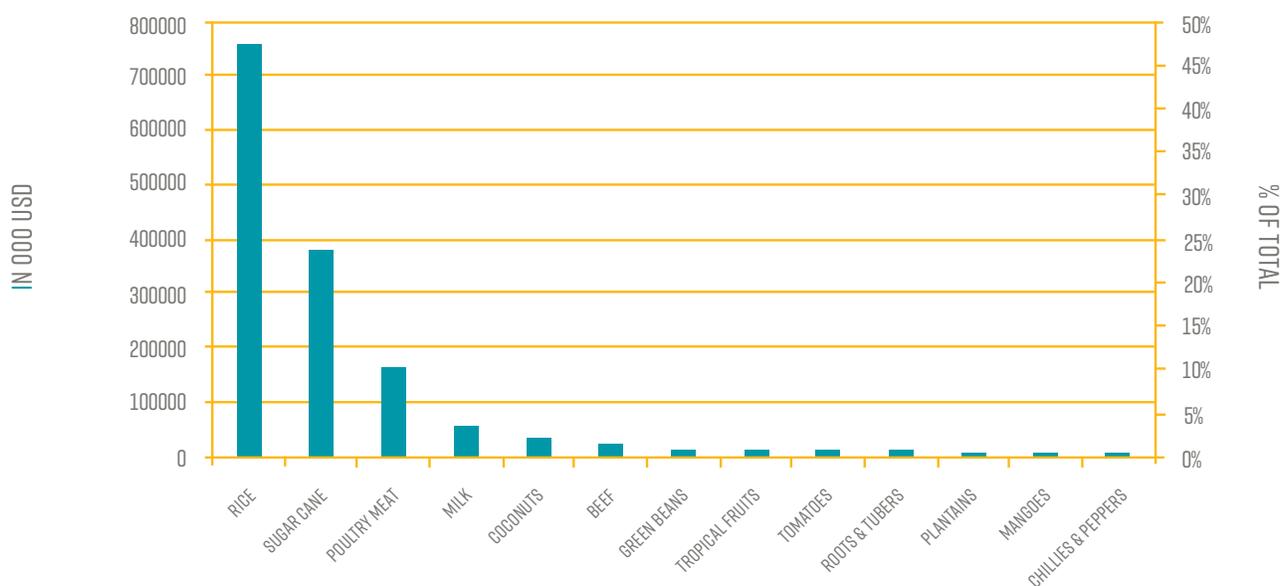
Source: WTO (2015), based on data from the Guyana Bureau of Statistics.

As is shown in Table 2 and Figure 1, sugar, rice, and poultry are the most important agricultural commodities in terms of both volume and value. Sugar and rice alone account for over 70% of the total value of the country's agricultural production. Other important crops include coconuts, green beans, tropical fruits, and plantains. The main livestock products include poultry meat, beef, milk, and eggs. As can be seen from the data, rice production showed a strong 48% increase between 2010 and 2013. More recently, however, Guyana has lost access to the high-priced rice market in Venezuela and producers have been adversely affected by droughts because of the El Niño phenomenon. As a consequence, rice production has stabilized at around 600,000 tons. Production in other sub-sectors mostly remained either stable (e.g. beef) or declined (e.g. sugar).

TABLE 2: AGRICULTURAL PRODUCTION IN GUYANA BY VOLUME, 2010-2013

| PRODUCT | 2010 | 2011 | 2012 | 2013 |
|-----------------|---------|---------|---------|---------|
| SUGAR (TONS) | 220,818 | 236,507 | 218,069 | 186,754 |
| RICE (TONS) | 361,527 | 402,479 | 422,058 | 535,555 |
| POULTRY (TONS) | 24,969 | 25,573 | 30,413 | 29,280 |
| EGGS (MILLIONS) | 14.17 | 23.51 | 21.23 | 17.96 |
| BEEF (TONS) | 2,260 | 2,153 | 1,635 | 2,262 |

Source: WTO (2015) based on data from the Guyana Rice Development Board and Guyana Bureau of Statistics.

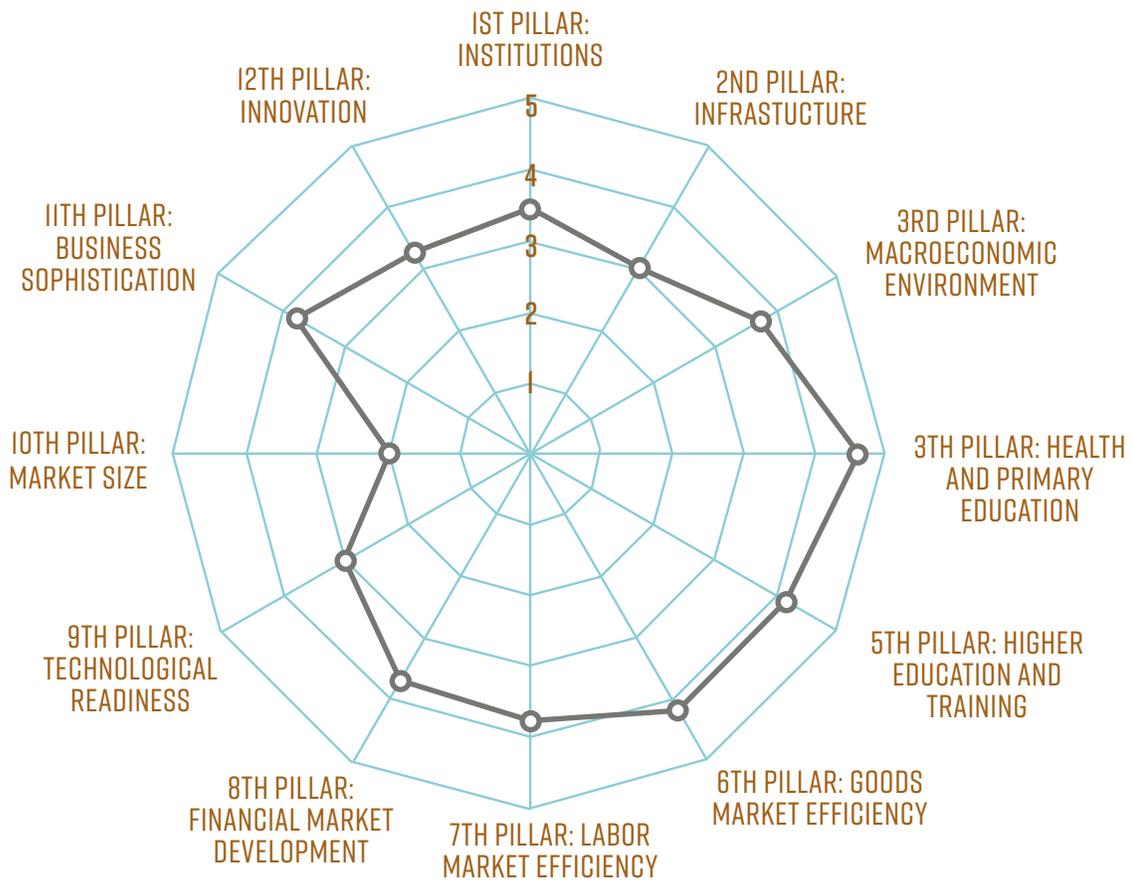
FIGURE 1: AGRICULTURAL PRODUCTION IN GUYANA BY VALUE, 2010 - 2013

Source: FAOSTAT.

Overall competitiveness and constraints in Guyana's business environment remain important obstacles to economic development. The country ranks 121 (out of 140 countries analyzed) in the 2015 Global Competitiveness Report of the World Economic Forum. As can be seen from Figure 2, the country scores relatively low on infrastructure, institutions, innovation, and technological readiness. According to the World Bank's Doing Business Indicators, in 2016 the country ranked 137 out of 189 countries analyzed (down from 132 in 2015), significantly below the average for Latin America and the Caribbean, though

higher than neighboring Suriname, which is ranked 158. When comparing the two countries, Guyana specifically scores better on the procedures required to start a business and to register property, both of which are more complex and slower in Suriname. For Guyana, the World Bank highlights the difficulties in getting access to credit as one of Guyana’s main business constraints.²

FIGURE 2: PERFORMANCE OVERVIEW OF COMPETITIVENESS IN GUYANA



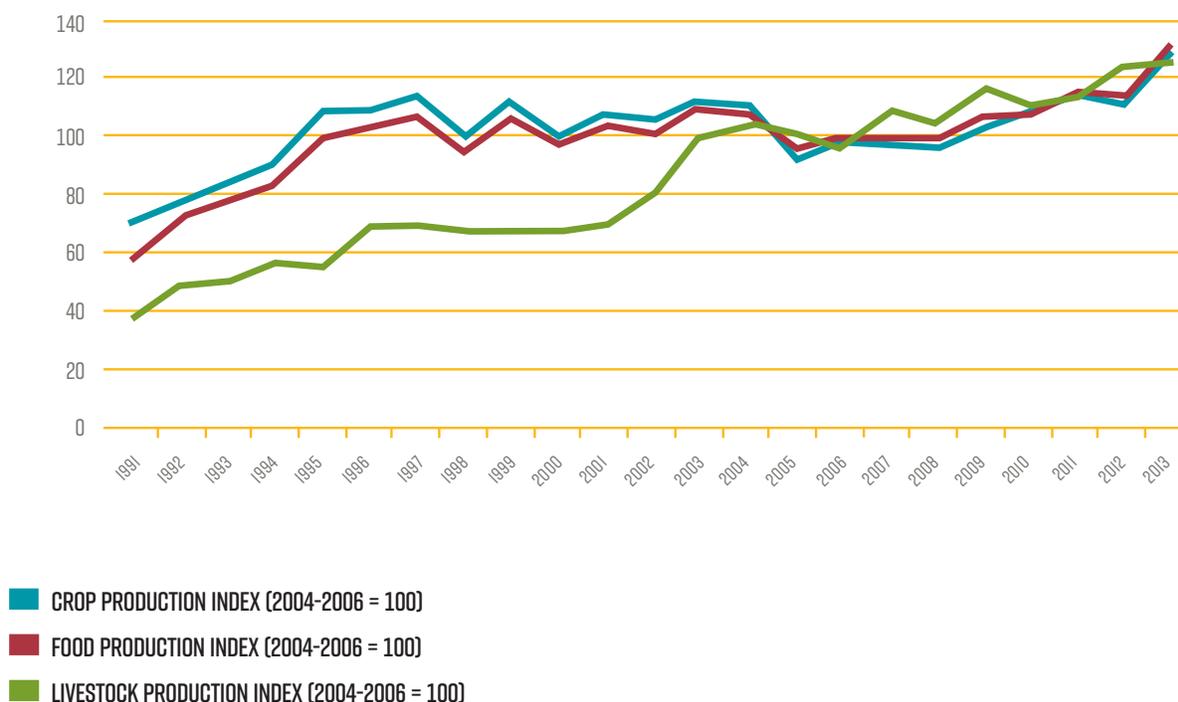
Source: World Economic Forum, 2016.

Overall agricultural production has been stagnating since the second half of the 1990s, as shown in Figure 3. Since 2011, the crop production index has been increasing primarily as a result of the growth of rice production, as seen in the rice production figures shown in Table 2 above. The livestock sector has shown fairly stable growth rates throughout the last two

² World Bank (2016).

decades, primarily driven by poultry production. This is a direct consequence of the 100% import tariff for poultry meat that shields domestic producers from imports.

FIGURE 3: CROP AND LIVESTOCK PRODUCTION INDICES IN GUYANA, 1991 - 2013

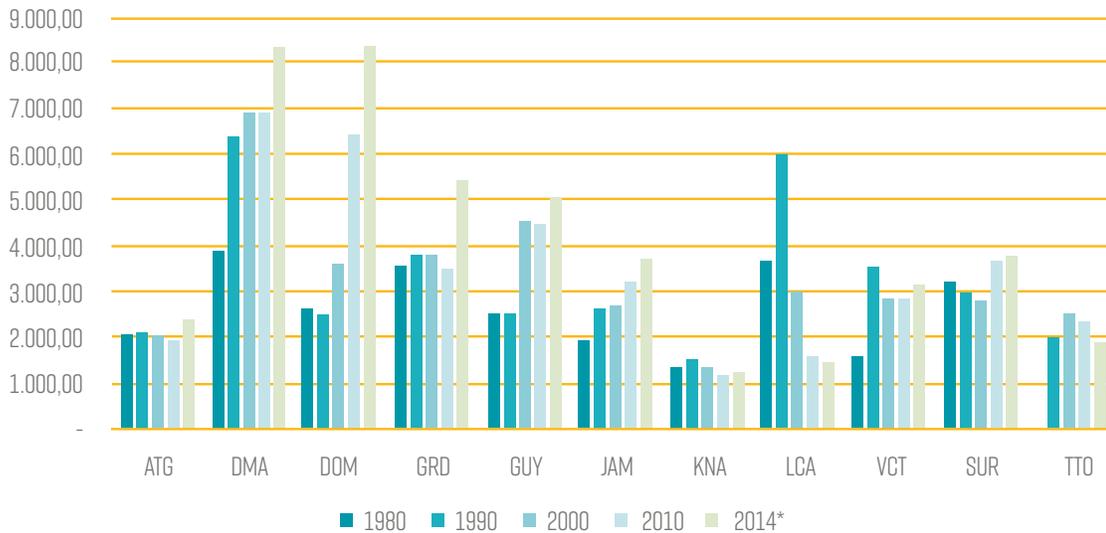


Source: World Development Indicators, 2016.

Overall labor productivity in the agricultural sector as shown in Figure 4 had been growing significantly in Guyana, particularly between 1990 and 2000, but has been more stable in recent years. Production index figures for Guyana after 2013 were not available. Compared to other countries in the Caribbean region, value added per worker in the agricultural sector has been higher than in Suriname, Jamaica, and Trinidad and Tobago, but lower than in the Dominican Republic. However, value added per hectare of arable land in Guyana is among the lowest in the Caribbean, as can be seen from Figure 5. This is primarily the result of the high share of sugar cane in the agricultural land under production, which generates low value per hectare compared to other crops.³

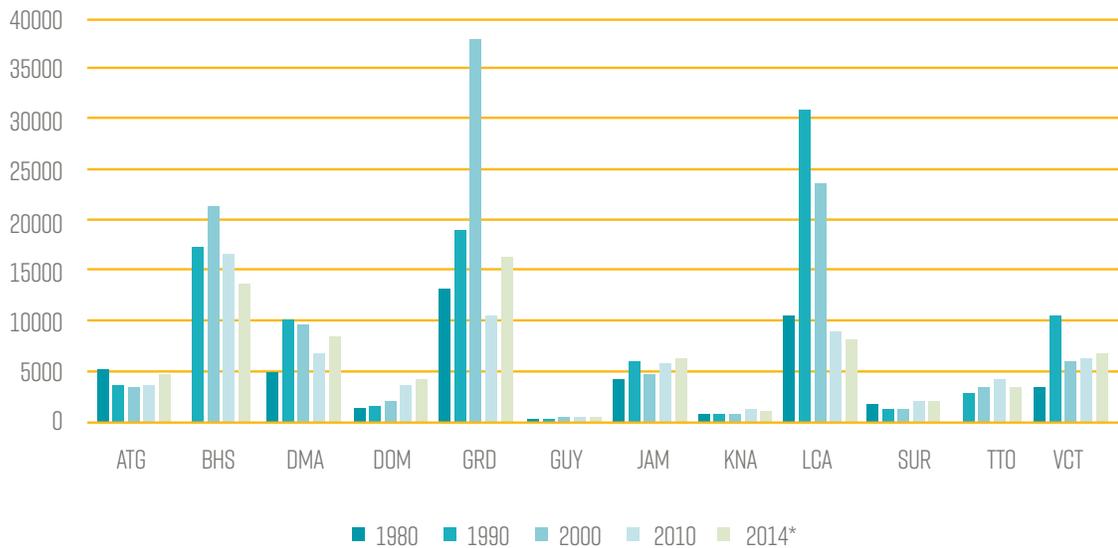
³ Lutz (1994).

FIGURE 4: VALUE ADDED PER AGRICULTURAL WORKER FOR SELECTED COUNTRIES OF THE CARIBBEAN, IN CONSTANT 2005 US\$



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

FIGURE 5: AGRICULTURE VALUE ADDED PER HECTARE OF ARABLE LAND IN SELECTED COUNTRIES IN THE CARIBBEAN, IN CONSTANT 2005 US\$



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

2.2 Introduction to agricultural policy

Guyana's main agricultural policy document is "Vision for Agriculture 2020: A National Strategy for Agriculture in Guyana 2013 – 2020". Even though this policy was prepared under the former government of President Ramotar, the Ministry of Agriculture confirmed that the National Strategy is still the main strategy for setting agricultural policy priorities.

The strategy is primarily based on the notion that agriculture serves not only to provide a subsistence livelihood but also to generate wealth and create an entrepreneurial sector that produces food and non-food commodities to meet local and export demand.⁴ Compared to earlier agriculture strategies, which primarily focused on specific sets of commodities, Vision for Agriculture 2020 takes a more holistic approach and seeks to promote both food and non-food (such as biofuels) agricultural development. To this end, it sets out five core focus areas, the so-called F-5:

1. Food Security – consolidating the end of hunger in Guyana, ensuring everyone has enough food in every community.
2. Fiber and nutritious food accessible by citizens – nutrition security for all.
3. Fuel production – helping to develop alternative fuel sources, reducing dependency on fossil fuel and creating a bio-energy industry in Guyana.
4. Fashion and health Products – An agro-process industry which creates a new industry in Guyana.
5. Furniture and crafts – an industry which we expect to grow in importance in Guyana.

The strategy also sets out the main goals that Guyana has set for its food and agricultural sector. These goals include:

- Reducing imports of foods such as corn, soya, and potatoes.
- Increasing exports of rice and sugar, as both bulk and value-added commodities.
- Increasing exports of non-traditional crop products.
- Meeting local demand for milk and dairy products with local production.

⁴ Ministry of Agriculture (2013).

- Reaching export level production for meats.
- Increasing agro-processing for the local and export markets.
- Achieving an annual agricultural GDP growth rate higher than 5 %.

The strategy aims to achieve these goals through a comprehensive roadmap of actions to be taken in 25 priority areas. Progress is measured through a large set of indicators defined in the strategy.

As for legislation, no overarching law governing agricultural issues exists. The main legal instruments governing the various sub-sectors are presented in Table 3.

TABLE 3: MAIN LEGAL INSTRUMENTS GOVERNING THE AGRICULTURAL SECTOR IN GUYANA

| TITLE OF LEGISLATIVE ACT | DESCRIPTION |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| RICE FACTORIES ACT | DEFINES THE RULES FOR RICE MILLING AND PAYMENTS TO FARMERS. |
| RICE DEVELOPMENT BOARD ACT | REGULATES THE MANUFACTURE AND MARKETING OF RICE THROUGH THE ESTABLISHMENT OF THE GUYANA RICE DEVELOPMENT BOARD. |
| SUGAR INDUSTRY SPECIAL FUNDS ACT | ESTABLISHES A PRICE STABILIZATION FUND, A REHABILITATION FUND AND A LABOR WELFARE FUND FOR THE SUGAR SUB-SECTOR. |
| SEEDS ACT | REGULATES THE PRODUCTION, SALE IMPORT AND EXPORT OF SEEDS. |
| GUYANA LIVESTOCK DEVELOPMENT AUTHORITY ACT | ESTABLISHES THE GUYANA LIVESTOCK DEVELOPMENT AUTHORITY AND MANDATES IT TO ADDRESS ANIMAL HEALTH, PRODUCTION AND TRADE MATTERS. |

Source: Ministry of Agriculture, Authors' elaboration.

The National Strategy's objective of diversifying the country's agricultural sector has recently been highlighted in speeches and comments by Mr. Noel Holder, Minister of Agriculture. In his budget speech in December 2016, the Minister reiterated the government's focus on diversified agricultural development in rural areas as a core element of the development agenda. In terms of concrete measures, the Minister mentioned the expansion of agriculture stations at Ebini and Pirara, primarily focusing on promoting cassava, peanuts, and orchard and cattle products. These plans will be funded through an agricultural investment loan provided by the IDB. Elsewhere, the government is also emphasizing further development of the coconut and cassava subsectors, with the latter expected to benefit from the opening of a cassava chips and flour processing facility in

Parika. Finally, the Minister foresees the construction of a milk processing plant to produce milk, butter, cheese, and other dairy products. However, it is uncertain to what extent funding for a dairy processing facility are available.⁵

Regarding agriculture sector support, Guyana maintains several support policies, which include (i) state ownership (sugar), (ii) budget transfers to state-owned enterprises (sugar), (iii) budget transfers to selected farmers (rice) and (iv) high import duties for selected commodities (primarily poultry). These policies are described further in the chapter on commodity-specific policies below.

Government institutions in the agricultural sector

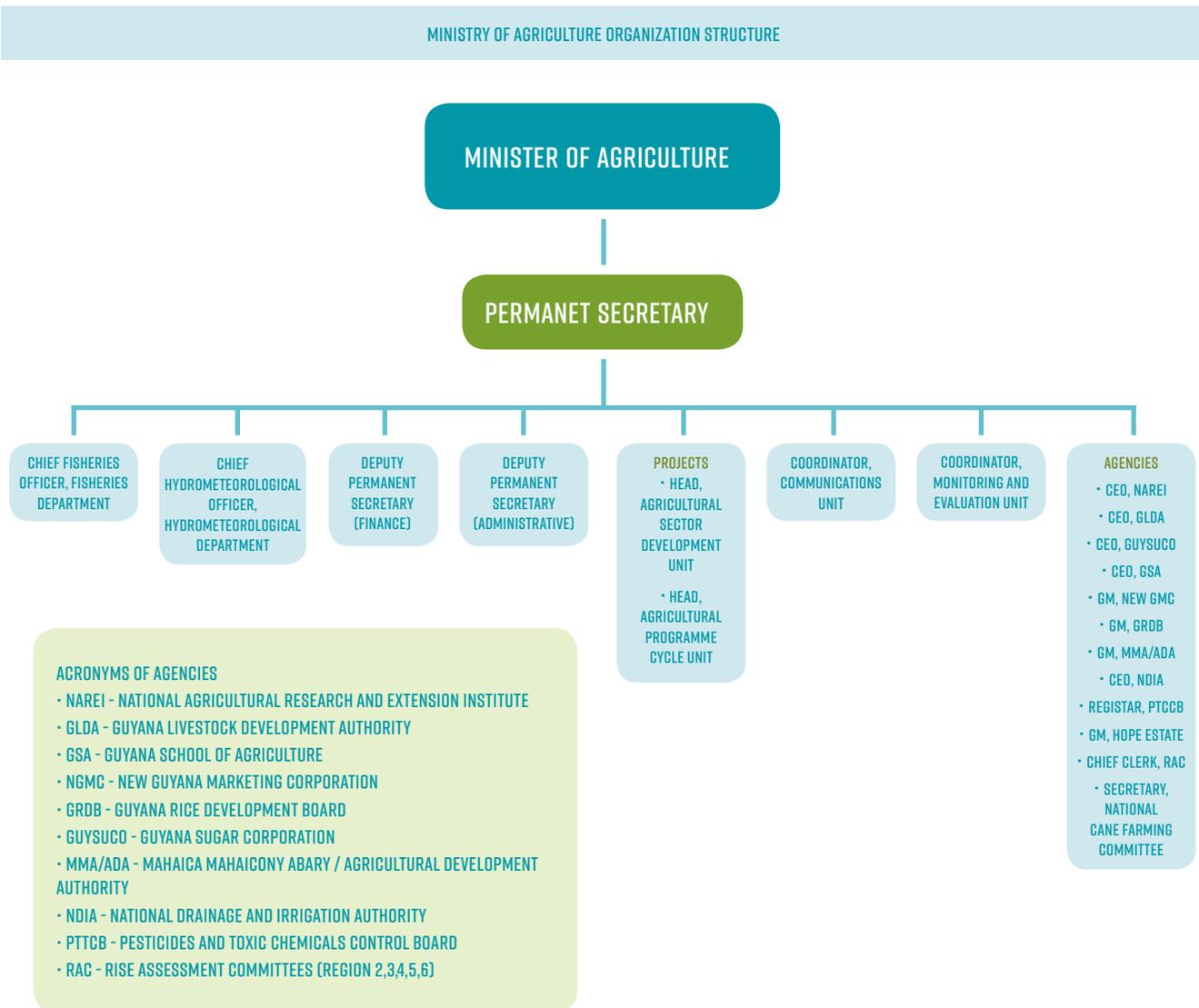
The Ministry of Agriculture of Guyana is the primary institution tasked with ensuring the formulation and implementation of policies and programs that facilitate the development of agriculture and fisheries in Guyana.

The Ministry operates through four key program areas:

1. Ministry administration, which manages and coordinates the human, financial, physical, and material resources necessary for the implementation and administration of the Ministry's programs and operations.
2. Crops and livestock support services, which are responsible for promoting and supporting agricultural development by providing technical and regulatory services to the sector.
3. Fisheries, which manages, regulates and promotes the use of fishery resources.
4. Hydrometeorological services, which provide meteorological, hydrological and oceanographic services.

A general overview of the organization of the Ministry of Agriculture in Guyana is provided in Figure 6. Much of the technical work in support of the agricultural work is carried out by 10 different agencies, for which the Ministry of Agriculture has reporting obligations to Parliament. The directors of the boards of these agencies answer to the Minister of Agriculture. However, the agencies have their own budget and are semi-autonomously managed by Chief Executive Officers (CEOs). Among others, these agencies include the Guyana Rice Development Board, the Guyana Sugar Company and the New Guyana Marketing Corporation. The activities of these semi-autonomous institutions are summarized in Table 3 below.

⁵ See for the full Budget Speech of Minister Holder, <http://agriculture.gov.gy/2016/12/10/budget-speech-2017-by-the-hon-noel-holder-m-p-minister-of-agriculture/>

FIGURE 6: ORGANIZATION CHART OF THE MINISTRY OF AGRICULTURE IN GUYANA

TABLE 4: OVERVIEW OF SEMI-AUTONOMOUS AGENCIES ACTIVE IN THE AGRICULTURAL SECTOR

| AGENCY | DESCRIPTION |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GUYANA RICE DEVELOPMENT BOARD (GRDB) | SEMI-AUTONOMOUS BODY WHOSE OBJECTIVES INCLUDE DEVELOPING THE RICE INDUSTRY AND PROMOTING RICE EXPORTS, AS WELL AS COORDINATING RICE RESEARCH. THE GRDB IS RESPONSIBLE FOR THE GRADING AND CERTIFICATION OF RICE AND PADDY AND ISSUES RICE MILLING AND EXPORT LICENCES. |
| GUYANA LIVESTOCK DEVELOPMENT AUTHORITY (GLDA) | AGENCY WITH 144 STAFF MEMBERS THAT PROVIDES SERVICES IN LIVESTOCK HUSBANDRY, HEALTH, AND RESEARCH. SERVICES INCLUDE VETERINARY CARE, DISEASE SURVEILLANCE, AND THE EXTENSION AND REGULATION OF ANIMAL TRADE. |
| GUYANA SUGAR COMPANY (GUYSUCO) | OPERATES FIVE ESTATES AND EIGHT SUGAR MILLS. GUYSUCO IS A STATE-OWNED SUGAR CORPORATION THAT HAS A MONOPOLY ON SUGAR PROCESSING AND EXPORT IN GUYANA. |

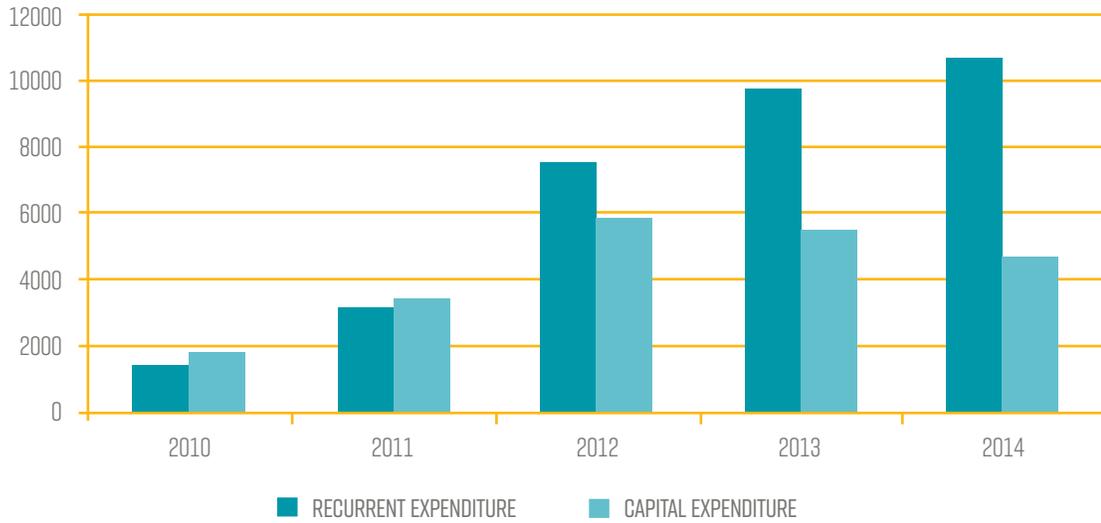
| AGENCY | DESCRIPTION |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NEW GUYANA MARKETING CORPORATION (NEW GMC) | PROVIDES MARKETING SERVICES TO STAKEHOLDERS IN THE NON-TRADITIONAL (=NON-RICE AND SUGAR) AGRICULTURAL SECTOR, SUCH AS FRESH FRUITS, VEGETABLES AND PROCESSED PRODUCTS. IT OPERATES EXPORT PACKAGING FACILITIES, TRUCKING SERVICES, AND MARKET INFORMATION ON WHOLESALE AND RETAIL PRICES. |
| NATIONAL AGRICULTURAL RESEARCH AND EXTENSION INSTITUTE (NAREI) | UNDERTAKES RESEARCH AND DEVELOPMENT IN AGRONOMY AND PLANT PROTECTION. NAREI'S AGRICULTURAL RESEARCH COMMITTEE ADVISES THE MINISTER OF AGRICULTURE ON AGRICULTURAL RESEARCH AND POLICY ISSUES. |
| NATIONAL DRAINAGE AND IRRIGATION AUTHORITY (NDIA) | OPERATES AND MAINTAINS DRAINAGE, IRRIGATION, AND FLOOD CONTROL INFRASTRUCTURE IN THE COASTAL REGIONS OF GUYANA. |
| MAHAICA/MAHAICONY/ABARY-AGRICULTURAL DEVELOPMENT AUTHORITY (MMA/ADA) | HANDLES THE CONSTRUCTION AND MAINTENANCE OF ALL DRAINAGE AND IRRIGATION WORKS FOR AGRICULTURAL DEVELOPMENT IN REGION NO. 5, MAHAICA/BERBICE ON THE NORTH-EASTERN ATLANTIC SEACOAST OF GUYANA. THE AGENCY IS ALSO RESPONSIBLE FOR THE ALLOCATION OF STATE LANDS BETWEEN THE BERBICE AND MAHAICA RIVERS. |

Sources: WTO (2015), GRDB (2014), GLDA (2014).

The total budget of the Ministry of Agriculture has increased significantly during the years under review, from GYD 3.25 billion in 2010 to GYD 15.46 billion in 2014, in a period of low inflation. In 2010, this was 2.2% of the total government budget, while by 2014, expenditures had grown to 7.2% of the government's total budget. For 2015, the Ministry's budget amounts to GYD 20.89 billion, or 10.8% of the government's total budget. As can be seen from Figure 7 and Figure 8, this growth is primarily the result of strong increases in the Ministry's recurrent expenditures, in both nominal terms and as a share of the Ministry's total budget. The increases are the result of growth in the non-wage recurrent expenditures ("other charges") of the institution, and are primarily caused by the subsidies that are provided by the Ministry to cover for increasing losses at the Guyana Sugar Company. In a speech presenting the 2015 budget, the Minister of Finance, notes that "the main driver of expenditure is the support to GUYSUCO".⁶

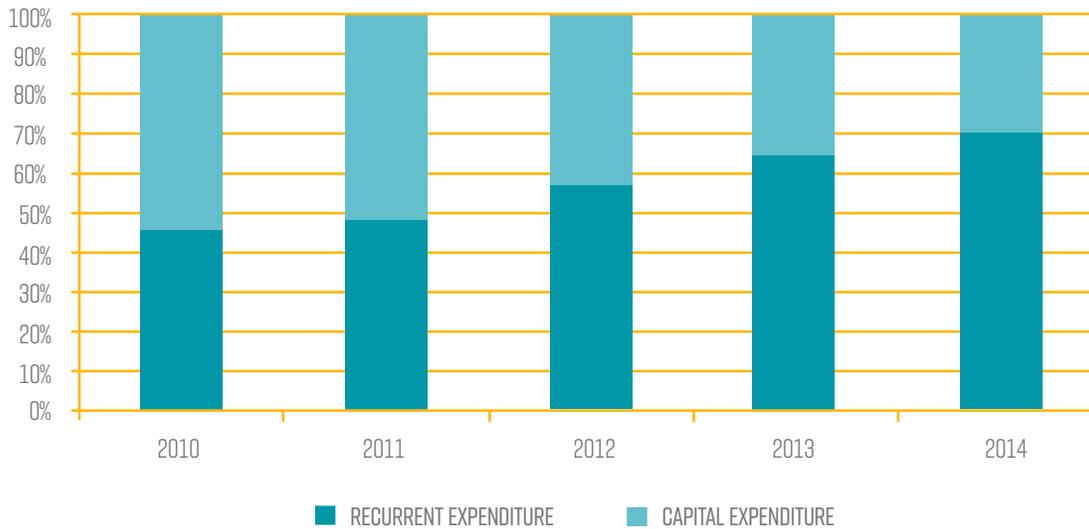
⁶ For the full 2015 budget speech, see <http://parliament.gov.gy/documents/sittings/4063-budget-speech-2015.pdf>

FIGURE 7: MINISTRY OF AGRICULTURE, RECURRENT AND CAPITAL BUDGETS 2010 - 2014, IN MILLIONS OF GYD



Source: Ministry of Finance (2015).

FIGURE 8: MINISTRY OF AGRICULTURE, SHARE OF RECURRENT AND CAPITAL EXPENDITURE IN TOTAL BUDGET, 2010 - 2014



Source: Ministry of Finance (2015).

The institution's capital expenditure include budget allocations to both the Ministry's semi-autonomous agencies and to national and/or donor-funded agricultural development projects. The main investment projects are described in Table 4.

TABLE 5: OVERVIEW OF MAIN CAPITAL PROJECTS OF THE MINISTRY OF AGRICULTURE IN GUYANA

| PROJECT CODE | PROJECT TITLE | FUNDING | DESCRIPTION |
|--------------|--------------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1209700 | AGRICULTURE EXPORT DIVERSIFICATION PROJECT | IDB | <p>THE PROJECT'S OBJECTIVES ARE:</p> <ol style="list-style-type: none"> 1. INCREASED EXPORT GROWTH RATE. 2. INCREASED REVENUE FROM NON-TRADITIONAL AGRICULTURAL EXPORTS. <p>THE PROJECT ENTAILS:</p> <ol style="list-style-type: none"> 1. PROMOTION OF THE THREE CLUSTER GROUPS - FRUITS AND VEGETABLES, LIVESTOCK, AND AQUACULTURE. 2. STRENGTHENING OF NARI 3. PROCUREMENT OF EQUIPMENT AND RESEARCH MATERIALS FOR THE PLANT AND ANIMAL HEALTH LABORATORIES. 4. REHABILITATION OF CONTROL STRUCTURES, ACCESS ROADS, AND PUMP STATIONS IN THE CANALS POLDER AREA. |
| 1301200 | AGRICULTURAL SUPPORT SERVICES PROJECT | IDB | <p>THE PROJECT ENTAILS PROVISION FOR:</p> <ol style="list-style-type: none"> 1. REHABILITATION OF CONTROL STRUCTURES, ACCESS ROADS, AND PUMP STATIONS. 2. COMPLETION OF RICE SEED FACILITY. 3. PURCHASE OF EQUIPMENT FOR NEW GUYANA MARKETING CORPORATION PACKAGING FACILITY. 4. INSTITUTIONAL STRENGTHENING FOR WATER USERS' ASSOCIATION AND NEW GUYANA MARKETING CORPORATION. |
| 1301600 | NATIONAL DRAINAGE AND IRRIGATION AUTHORITY | NATIONAL | INCLUDES COMPLETION OF DRAINAGE STRUCTURES AND PUMPING STATIONS ACROSS THE COASTAL PLAINS OF GUYANA. ALSO INCLUDES THE REHABILITATION OF EXCAVATORS, BULLDOZERS, PONTOONS, AND PUMPS. |
| 1301700 | IRRIGATION AND DRAINAGE | NATIONAL; INDIA; PETROCARIBE FUND | THE PROJECT ENTAILS IRRIGATION AND DRAINAGE INVESTMENTS IN THE COASTAL REGIONS OF GUYANA. |
| 1301800 | IRRIGATION AND DRAINAGE SUPPORT PROJECT | NATIONAL | <p>THE PROJECT OBJECTIVES ARE:</p> <ol style="list-style-type: none"> 1. IMPROVED DRAINAGE AND IRRIGATION SYSTEMS. 2. IMPROVED ENVIRONMENT. <p>THE PROJECT ENTAILS REHABILITATION AND MAINTENANCE OF COMMUNITY DRAINS, CULVERTS AND PARAPETS IN SELECTED AREAS IN REGIONS 1, 2, 3, 4, 5, 6, AND 10.</p> |
| 2100500 | EAST DEMERARA WATER CONSERVANCY | NATIONAL; JAPAN | THE PROJECT ENTAILS IMPROVED IRRIGATION & DRAINAGE SYSTEMS THROUGH REHABILITATION OF INTAKE STRUCTURES AT ANN'S GROVE, HOPE, ANNANDALE, AND NANCY, AND RELIEF SLUICES AT MADUNI AND SARAH JOHANNA. ALSO INCLUDES PROVISION FOR TECHNICAL ASSISTANCE, SUPERVISION, AND MANAGEMENT. |

| PROJECT CODE | PROJECT TITLE | FUNDING | DESCRIPTION |
|--------------|----------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2501300 | PROJECT EVALUATION AND EQUIPMENT | NATIONAL | CAPITAL EXPENDITURE FOR PROJECT EVALUATION AND OFFICE EQUIPMENT, INCLUDING OFFICE FURNITURE, MACHINES AND INSTALLATIONS. THIS EXCLUDES OPERATIONAL COST, SUCH AS THE SALARIES OF EVALUATION STAFF. |
| 2801400 | RURAL ENTERPRISE AND AGRICULTURAL DEVELOPMENT | NATIONAL; IFAD | THE PROJECT'S OBJECTIVES ARE: <ol style="list-style-type: none"> 1. INCREASED RURAL HOUSEHOLD INCOMES. 2. INCREASED NON-TRADITIONAL AGRICULTURAL PRODUCTION. THE PROJECT ENTAILS PROVISION FOR: <ol style="list-style-type: none"> 1. MARKET OPPORTUNITIES FOR SMALL SCALE RURAL FARMERS. 2. TRAINING AND EMPOWERING SMALL PRODUCERS AND TRADERS. 3. FARMER ACCESS TO CREDIT FACILITY. |
| 3300800 | NEW GUYANA MARKETING CORPORATION | NATIONAL | CAPITAL EXPENDITURE FOR THE NEW GMC |
| 4700100 | MAHAICA/MAHAICONY/ABARY-AGRICULTURAL DEVELOPMENT AUTHORITY (MMA/ADA) | NATIONAL | CAPITAL EXPENDITURE FOR THE MMA |
| 1700400 | GUYANA SCHOOL OF AGRICULTURE | NATIONAL | CAPITAL EXPENDITURE FOR THE GUYANA SCHOOL OF AGRICULTURE |
| 1701500 | GUYANA LIVESTOCK DEVELOPMENT AUTHORITY | NATIONAL | CAPITAL EXPENDITURE FOR THE GLDA |
| 1701600 | NATIONAL AGRICULTURE RESEARCH AND EXTENSION INSTITUTE | NATIONAL | CAPITAL EXPENDITURE FOR NAREI |

Source: Ministry of Finance, 2016.

2.3 Trade Regulations

Guyana is a member of the Caribbean Community (CARICOM) and therefore coordinates its external trade policy within CARICOM. During the period under review, Guyana continued implementing its National Trade Strategy (finalized in 2003), which states that its trade policy priority should be to enhance market access for Guyanese exports.

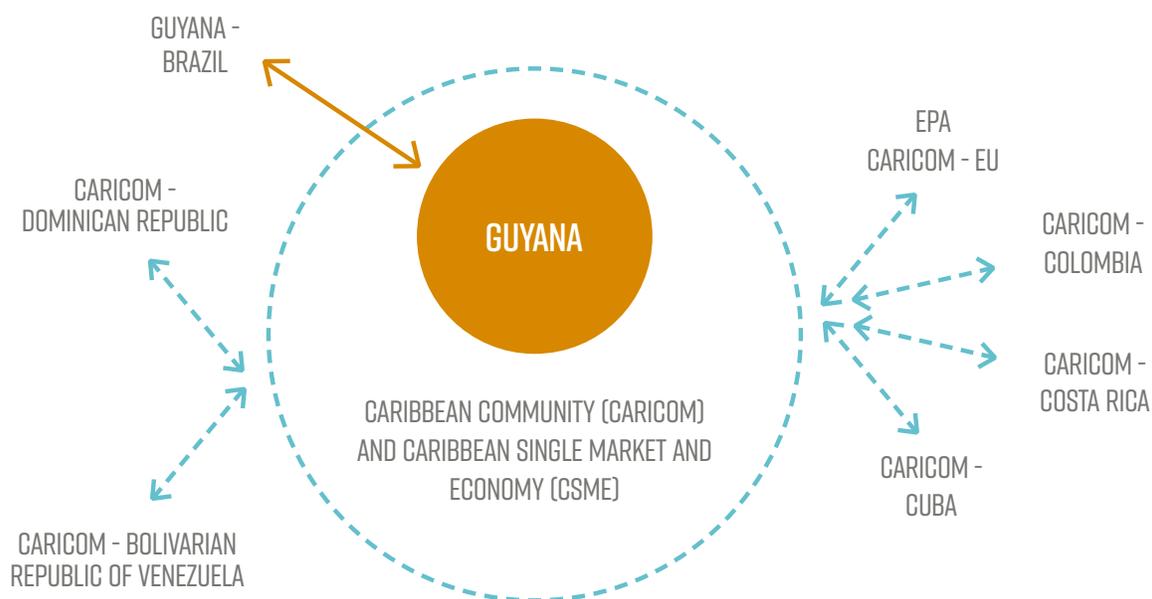
The overall formulation of trade policy falls within the mandate of the Ministry of Foreign Affairs. The other institutions involved in formulating and implementing trade policies are the Ministry of Tourism, Industry, and Commerce, the Guyana Revenue Authority, and the Guyana Livestock Development Authority.

Coordination between institutions on trade policy matters takes place through the National Advisory Committee on External Negotiation (NACEN), chaired by the Minister of Foreign Affairs.

Import duties and trade partnerships

As a CARICOM member, Guyana participates in a number of free trade agreements between CARICOM and other organizations, including the European Union, through the CARICOM – EU Economic Partnership Agreement. In addition, Guyana has ratified a bilateral free trade agreement with Brazil.

FIGURE 9: OVERVIEW OF TRADE AGREEMENTS, 2015



Source: WTO, 2015.

All tariff lines in Guyana are bound. The simple average bound tariff rate is 58.3%, more than four times higher than the simple average applied most favored nation (MFN) rate (12.1% in 2014).

The overall MFN rate for agricultural products is significantly higher than for non-agricultural products. It averages 22.7% against 10% for other products. An overview of the main import tariffs for agricultural product categories is provided in Table 5: Overview of agricultural import tariffs in Guyana, 2014. Imports from CARICOM, as well as from Colombia, Costa Rica, Cuba and the Dominican Republic are duty-free across the tariff lines.

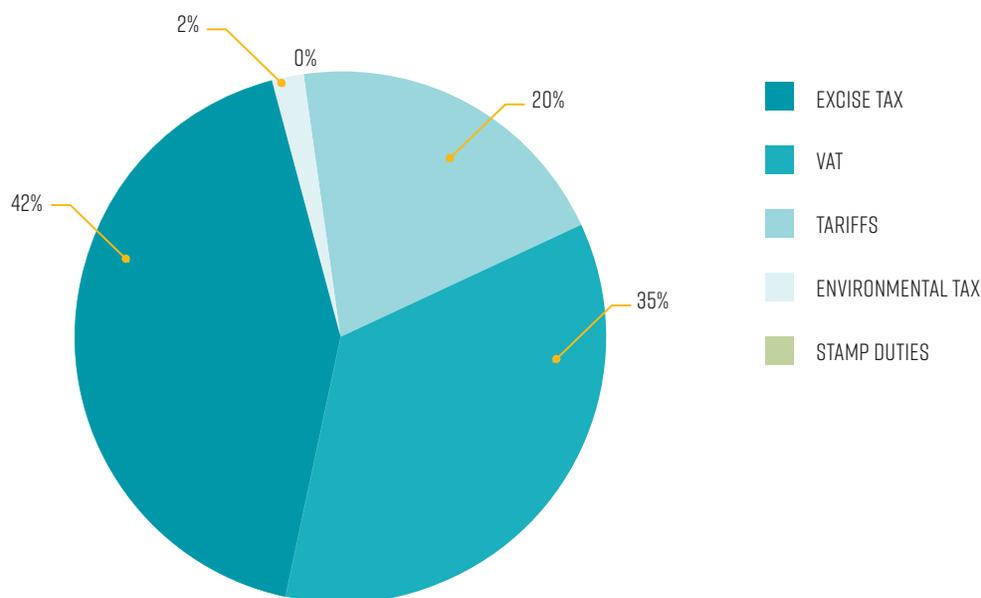
TABLE 6: OVERVIEW OF AGRICULTURAL IMPORT TARIFFS IN GUYANA, 2014

| | MFN APPLIED | | | BOUND AVG |
|---------------------------|--------------|---------|-------|-----------|
| | NO. OF LINES | AVERAGE | RANGE | |
| AGRICULTURAL PRODUCTS | 1051 | 22.7% | 0-100 | 99.8% |
| ANIMALS & ANIMAL PRODUCTS | 150 | 28.6% | 0-100 | 100% |
| DAIRY PRODUCTS | 25 | 12.6% | 0-40 | 100% |
| FRUITS, VEGETABLES | 307 | 23.3% | 0-40 | 100% |
| COFFEE & TEA | 29 | 17.4% | 5-40 | 100% |
| CEREALS | 134 | 17.4% | 0-100 | 100% |
| OIL SEEDS, FATS & OILS | 106 | 19.9% | 0-40 | 99.5% |
| SUGARS | 23 | 25.4% | 5-40 | 100% |
| BEVERAGES, SPIRITS | 118 | 43.3% | 5-100 | 100% |
| COTTON | 6 | 5% | 5-5 | 100% |

Source: WTO, 2015.

Import taxes

Taxation of imports is key for Guyana's overall government revenue generation. Various import taxes are collected on imports. These include value-added tax (VAT), excise tax, environmental tax and stamp duties. In total, the tax revenue on imports generated 43% of all tax revenue collected in Guyana in 2013. As shown in Figure 10, excise tax and VAT account for the large shares of taxes collected at the border, while tariffs only represented 20% of the total.

FIGURE 10: COMPOSITION OF TAXES COLLECTED AT THE BORDER IN GUYANA, 2009 - 2013

Source: Authors' estimations based on data of the WTO.

- VAT is applied equally to domestically-produced goods and services and imports, at a general rate of 16%. For certain products, domestic production is exempted while imports are not. This applies, among other products, to:

- Fresh, chilled, or frozen pork.
- Beef.
- Shrimp.
- Fish and salted fish.
- Peanuts and cashew nuts.

- The excise tax is applied to alcoholic beverages, tobacco products, petroleum products, and motor vehicles. The tax rates vary from 3% (on gas oil) to 100% (on tobacco products).

- Stamp duty is GYD 1 per GYD 1,000 of declared import (c.i.f.) value.

Guyana employs a system of automatic and non-automatic licensing of imports for selected groups of agricultural products, as shown in Table 6. Where this applies, importers must obtain the license from the relevant government institution, such as the Ministry of Agriculture or the Guyana Livestock Development Authority (GLDA).

TABLE 7: OVERVIEW OF IMPORT LICENSING REQUIREMENTS FOR AGRICULTURAL PRODUCTS IN GUYANA

| PRODUCT | TYPE OF LICENSE | RESPONSIBLE INSTITUTION |
|------------------------------------------------|-----------------|------------------------------------------------|
| MEAT PRODUCTS | AUTOMATIC | MINISTRY OF AGRICULTURE & GLDA |
| LIVE PLANTS AND FLOWERS; FRESH AND DRIED FRUIT | AUTOMATIC | MINISTRY OF AGRICULTURE |
| WHEAT | AUTOMATIC | MINISTRY OF AGRICULTURE AND MINISTRY OF HEALTH |
| RICE | NON-AUTOMATIC | GRDB |
| CANE OR BEET SUGAR | NON-AUTOMATIC | GUYSUCCO |

Source: WTO, 2015 and Ministry of Agriculture.

Export taxes

Export duties are applied to all exports of “non-manufactured goods” at a general rate of 1.5%. In 2012, duties on exports to the EU and to the Dominican Republic were eliminated due to implementation of the EU-CARICOM Economic Partnership Agreement.

An export duty of GYD 1.00/ton is applied to raw cane sugar. For molasses, the export duty amounts to GYD 1.00/100 liters.

All other agricultural products and byproducts are exempted from the duty.

Tax concessions

Guyana extends a number of tax concessions to the agricultural sector.

Under the VAT Act, zero-rates apply to various food items, including baby formula, flour, milk and milk powder, fresh fruits and vegetables, sugar, eggs, and chicken. In addition, various agricultural inputs are also zero-rated. These include fertilizer, pesticides, fungicide, herbicide and weedicide, seeds, machinery, and equipment. In addition, prepared animal feeds, hatching eggs, and veterinary medication also fall within this group.

Under the Customs Act, the following exemptions of duties are applied in support of the agricultural sector:

- Waivers of duty on a wide range of machinery and equipment for land preparation and cultivation, including agricultural hand tools and spare parts for agricultural machines.
- Wxemption of duty for vehicles for use on the farm or to transport agricultural products.
- Duty waivers on a wide range of agro-processing equipment.
- Duty-free importation of fertilizer and agro-chemicals, such as insecticides and herbicides.⁷

Due to a lack of data, however, foregone revenue has not been included in the calculations of the support indicators. Additional analysis would be required to accurately estimate the level of revenue foregone as a result of the Customs Act.

2.4 Commodity-specific measures

Rice

Rice is one of the Guyana agricultural sector's traditional crops, and rice production dates back more than a century. It is mainly grown in the coastal plains, in the irrigated fields of the Pomeroon, Demerara and Berbice regions (administrative regions 2, 4, 5, and 6). Overall, Guyana's rice sector has been growing steadily, despite regular complaints from sector stakeholders and challenges such as unstable weather patterns and relatively high production costs. Of the 16,000 rice farming households, approximately 93% are small scale farmers with farms of 30 hectares or less.⁸ All production and processing is privately owned and operated.

Overall paddy production has grown from under 200,000 tons in 1990 to a record of nearly 1 million tons in 2014, as shown in Figure 11. Over the same period, yields also steadily increased, from 3 mt/ha in 1990 to 5.3 mt/ha in 2014. This is significantly higher than in rainfed rice production systems, such as in Thailand, where yields per hectare average between 2.5 and 3 tons. It is also higher than in neighboring Suriname, which has more

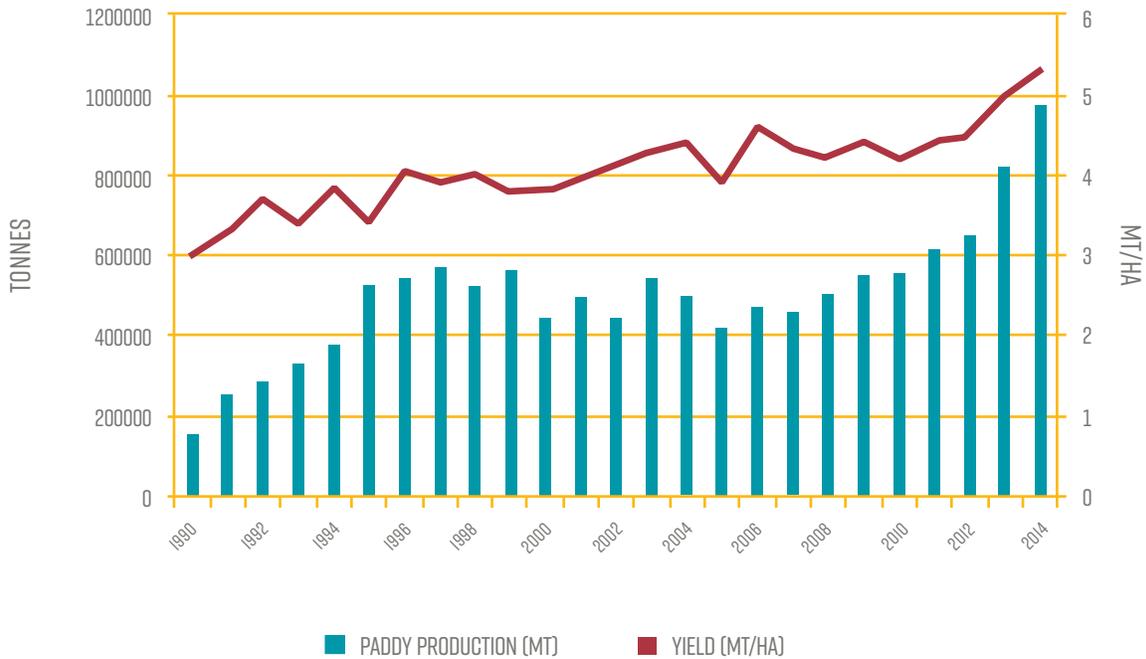
RICE IS ONE OF THE GUYANA AGRICULTURAL SECTOR'S TRADITIONAL CROPS, AND RICE PRODUCTION DATES BACK MORE THAN A CENTURY.

⁷ GO-Invest (2015).

⁸ GRDB, 2014.

extensive production systems and larger plots, with yields averaging 4.4 tons/ha in 2014. Overall annual rice production totals 17 million bags, with a yield of 87 bags per hectare.

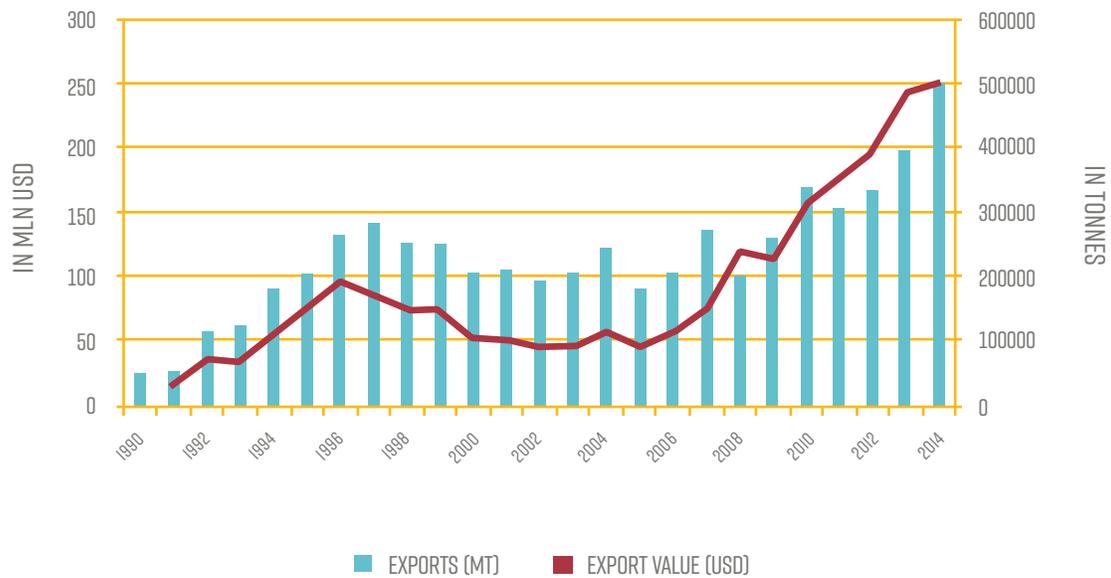
FIGURE 11: RICE PADDY PRODUCTION (IN TONS) AND YIELDS (IN MT/HA) IN GUYANA, 1990 - 2014



Source: GRDB.

Likewise, export levels also increased significantly and multiplied ten-fold between 1991 and 2014. In 1991, total exports amounted to just over 50,000 tons of rice, while in 2014 it exported a record 500,000 tons. As shown in Figure 12, export value totaled US\$250 million.

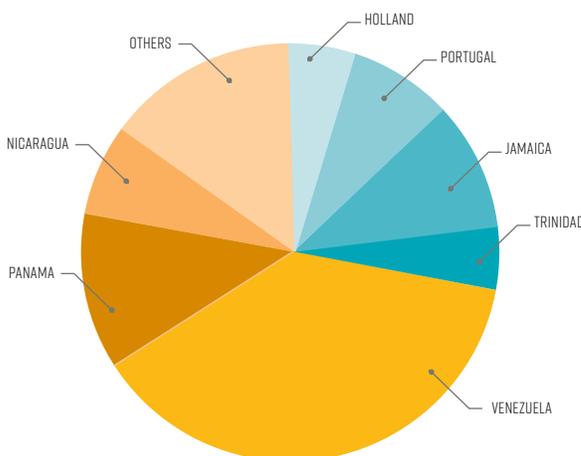
FIGURE 12: RICE EXPORTS (IN TONS) AND EXPORT VALUE (IN MILLION USD) IN GUYANA, 1990 - 2014



Source: GRDB.

Figure 13 provides an overview of the main export destinations of rice from Guyana in 2014. Venezuela was the largest recipient of rice, absorbing 37.5% of the total exported volume. Other key markets include Panama (11.83%), Jamaica (10.3%) and Portugal (8.28%).

FIGURE 13: MAIN EXPORT DESTINATIONS OF RICE FROM GUYANA, 2014



Source: GRDB.

Venezuela's high share of total rice exports was primarily related to the so-called PetroCaribe Agreement between Venezuela and Guyana. Under this agreement, signed in 2009, the countries agreed to trade rice for oil. Specifically, the Government of Venezuela agreed to set a maximum quantity of paddy and white rice that it would receive each year, supplied at a premium price (above the world market price). This amount was then subtracted from the amount due for the oil supplied to Guyana by Venezuela.⁹ This agreement was a key driver in the growth of paddy production in Guyana over the last five years.

Under six different sales contracts, Guyana shipped out approximately 267,000 tons of rice and 445,000 tons of paddy to Venezuela. These volumes represented a total value of between US\$214 and US\$224 million.¹⁰ However, amid an escalating dispute between Venezuela and Guyana over the sea border between the countries in the Esequiba region following the discovery of oil reserves, Venezuela cancelled the rice-for-oil deal under the Petrocaribe agreement in November 2015. As a result, rice exports to Venezuela halted and an important export market disappeared. In 2016, the rice trade with Venezuela was restarting gradually. By November 2016, an annual total of 6,700 tons had been exported to Venezuela.¹¹

Guyana also benefited from preferential access for its rice exports: Data provided by the authorities indicate that in 2013, about 19.7% of rice was exported to CARICOM countries and about 20% to the EU under the Economic Partnership Agreement between CARICOM and the European Union.

The rice sector is supported through several government policies, including tax concessions, drainage and infrastructure investment, research and development, and extension. In addition, the GRDB also certifies exported rice.

The key rice sector support institution is the Guyana Rice Development Board (GRDB), a government agency that reports to the Ministry of Agriculture. The GRDB was established in 1994, and its mandate is to enhance the industry's development in terms of research, technology transfer, marketing, and product quality control. The GRDB's Burma Rice Research Station releases Guyana's own high-yield and disease-resistant varieties.¹² The

THE RICE SECTOR IS SUPPORTED THROUGH SEVERAL GOVERNMENT POLICIES, INCLUDING TAX CONCESSIONS, DRAINAGE AND INFRASTRUCTURE INVESTMENT, RESEARCH AND DEVELOPMENT, AND EXTENSION. IN ADDITION, THE GRDB ALSO CERTIFIES EXPORTED RICE.

⁹ Wenner (2016).

¹⁰ Wenner (2016).

¹¹ See, <http://www.kaieteurnews.com/2016/12/10/rice-sales-to-venezuela-bring-in-over-us3m/>

¹² WGRDB, 2014.

GRDB also provides extension services to farmers on seed rates and treatment, fertilizer management, weed management, water management, and pest and disease management.

The GRDB is funded through a direct levy on rice sales for both export and the domestic market. The fee amounts to US\$8 per ton of rice and US\$4 per ton of paddy. All activities and services of the GRDB are funded from the levy. Beyond research, these also include extension services and farmer field schools. Inspection services, fumigation on ships, and the administrative handling of exports are also provided.

The GRDB operates as an independent agency and has so far made no payments into the government treasury. The GRDB holds a strong financial position. In 2013, it made a profit (revenue minus costs) of GYD 158.5 million, which increased to GYD 189.3 million in 2014. Its total assets in 2014 amounted to nearly GYD 2.2 billion, of which GYD 1.38 billion were in cash and deposits.

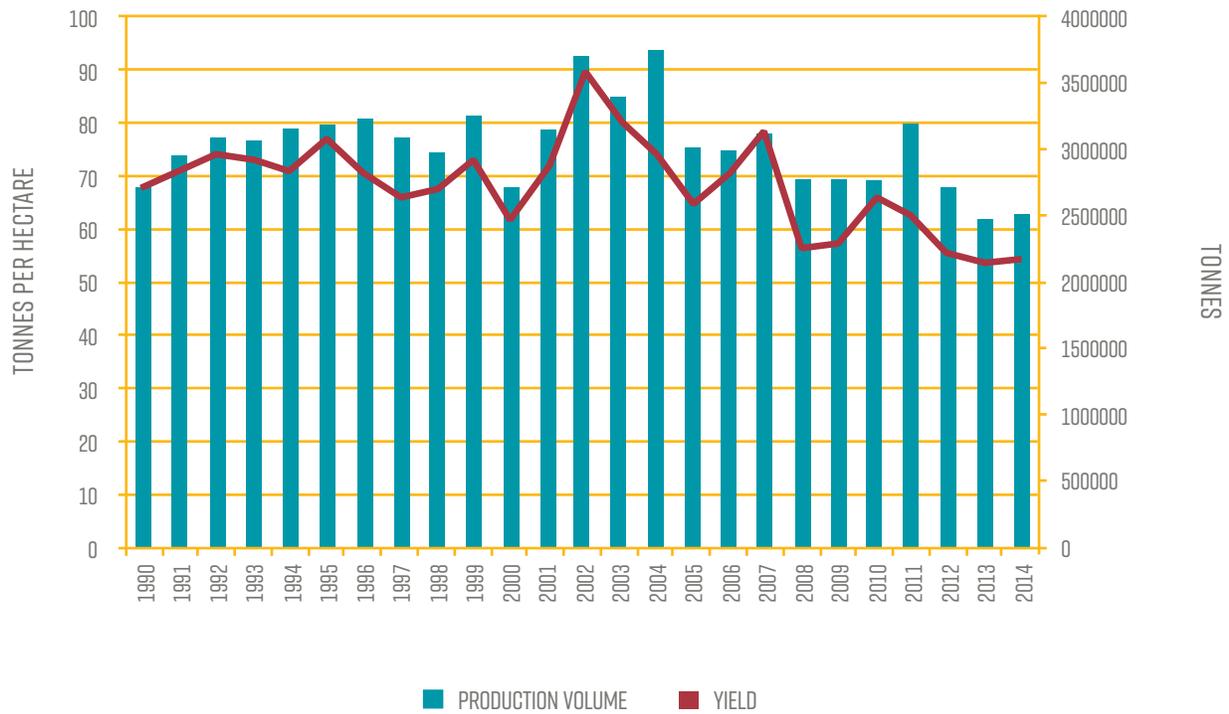
Sugar

The sugar sub-sector in Guyana is dominated by the state-owned Guyana Sugar Company (GuySuCo), which produces most of the sugar cane in the country and which holds an exclusive license to import and export non-refined sugar. GuySuCo operates eight sugar plantations and seven sugar cane mills. With a staff of 17,000, GuySuCo is the largest employer in the country. Including indirect workers and families, about 160,000 people depend on GuySuCo. Dependency is highest in Regions 5 and 6 in the eastern plains of the Guyanese coast. Although GuySuCo is the only sugar processor in Guyana, smaller private producers of sugar cane do exist. According to GuySuCo, in 2016 approximately 10-12% of total processed cane comes from non-GuySuCo cultivations.

As shown in Figure 14, sugar cane production in Guyana is in decline. Especially since 2010, production has been decreasing and yields have dropped to between 50 and 60 tons per hectare, significantly below the global average sugar cane yield of 70.77 tons per hectare. Total production has also dropped from highs of 360,000 tons in the early 2000s to just over 250,000 tons in 2014.

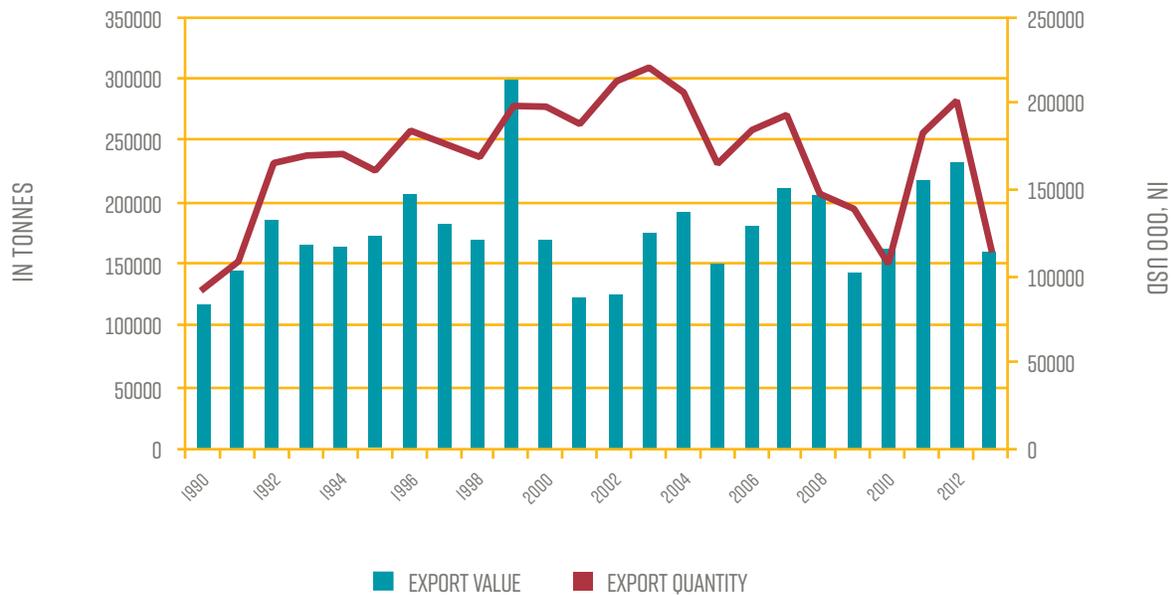
THE SUGAR SUB-SECTOR IN GUYANA IS DOMINATED BY THE STATE-OWNED GUYANA SUGAR COMPANY (GUYSUCO), WHICH PRODUCES MOST OF THE SUGAR CANE IN THE COUNTRY AND WHICH HOLDS AN EXCLUSIVE LICENSE TO IMPORT AND EXPORT NON-REFINED SUGAR.

FIGURE 14: SUGAR CANE PRODUCTION VOLUME (IN TONS) AND YIELD (IN TONS/HA) IN GUYANA, 1990 - 2014



Sugar exports are also declining and, as can be seen in Figure 15, have been on a particularly steep decline since 2011.

The sugar sub-sector suffers from various interlinked constraints. First, the cane yields in Guyana are significantly lower than in most other cane producing countries. At 57 mt/hectare, yields are half those of Guatemala, where yields reach 112 mt/hectare. Second, its production costs are very high, and total revenue from sugar sales is lower than the total employment cost, which makes up more than 60% of total cost.

FIGURE 15: SUGAR EXPORTS FROM GUYANA, IN QUANTITY AND VALUE, 1990 - 2013


Source: FAOSTAT.

Policy support to the sugar sub-sector

Because of the sub-sector's broad socio-economic importance, the government provides support through a wide variety of policy measures. These are summarized in Table 7.

TABLE 8: POLICY SUPPORT MEASURES IN THE SUGAR SUB-SECTOR IN GUYANA

| POLICY | DESCRIPTION |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RICE FACTORIES ACT | GUYSUICO IS A 100% STATE-OWNED CORPORATION UNDER THE RESPONSIBILITY OF THE MINISTRY OF AGRICULTURE OF GUYANA. |
| EXCLUSIVE TRADE LICENSE | RAW SUGAR IMPORTS AND EXPORTS ARE EXCLUSIVELY LICENSED TO GUYSUICO. |
| EXPORT DUTIES | EXPORT DUTIES ARE LEVIED UNDER THE CUSTOMS ACT AND UNDER THE SUGAR SPECIAL FUNDS ACT. |
| DIRECT BUDGETARY TRANSFERS | THE GOVERNMENT OF GUYANA HAS PROVIDED DIRECT BUDGETARY TRANSFERS TO GUYSUICO TO COMPENSATE FOR NET LOSSES. |
| AD-HOC EXEMPTION OF CORPORATE & PROPERTY TAXES | DUE TO THE OPERATING LOSSES AND LIABILITIES, THE CORPORATION HAS NOT PAID ANY CORPORATION OR PROPERTY TAXES IN RECENT YEARS. |
| VAT TAX EXEMPTION | SUGAR IS A ZERO-RATED PRODUCT AND DOES NOT ATTRACT VAT. VAT PAID BY GUYSUICO IS REFUNDED TO THE COMPANY BY THE GUYANA REVENUE AUTHORITY (GYD 474 MILLION IN 2015). |
| WAIVING OF LOAN REPAYMENT OBLIGATIONS | SINCE 2009, THE GOVERNMENT OF GUYANA HAS WAIVED US\$8 MILLION FROM THE REPAYMENT OF THE LOAN FOR THE 2009 SKELDON SUGAR PROCESSING PLANT MODERNIZATION. |

Source: prepared by author based on information provided by GuySuCo.

Export duties

Under the Customs Act, an export duty of GYD 1.00 per ton for raw sugar and GYD 1.00 per 100 liters for molasses is levied. Under the Sugar Special Funds Act, exporters pay customs GYD 514.50 for every ton of sugar manufactured in Guyana and exported outside of CARICOM. The proceeds of this levy are used as follows:

- 97.2% is used to fund the Sugar Industry Labor Welfare Fund.
- 2.3% is used to fund the Sugar Industry Rehabilitation Fund.
- 0.5% is allocated to the Sugar Industry Price Stabilisation Fund.

Budgetary transfers

In order to compensate for GuySuCo's net losses, the Government of Guyana has provided subsidies to GuySuCo on an annual basis. From 2011 to 2014, a total of GYD 16 billion was provided. In recent years, transfers have increased further, to GYD 12 billion in 2015 and GYD 9 billion in 2016.

TABLE 9: GOVERNMENT TRANSFERS TO GUYSUCO, 2011 - 2015, IN MILLIONS OF GYD

| SUBSIDY - GOG | |
|---------------|--------|
| YEAR | G\$M |
| 2011 | 659 |
| 2012 | 4,000 |
| 2013 | 5,360 |
| 2014 | 6,000 |
| 2015 | 12,000 |
| 2016 | 9,000 |
| | 37,019 |

Source: GuySuCo.

Commission of Inquiry

In order to address the problems of GuySuCo and the growing burden the sugar sector poses for the government budget, the Ministry of Agriculture appointed a Commission of Inquiry to assess the viability of GuySuCo and propose recommendations for sugar sector reform.

The Commission of Inquiry presented its report in October 2015. However, it was not officially released until July 2016. The report paints a highly negative picture of the sugar sector and concludes that GuySuCo finds itself in a “present state of insolvency”. The report lists 10 main reasons for the company’s current problems:

1. Mismanagement of human, financial and material resources.
2. Absence of motivational and effective leadership and lack of business acumen.
3. Unavailability of financial resources to fund, on a timely basis, essential capita land routine works.
4. Dearth of relevant experience and knowledge relating to the uniqueness of the sugar industry, notwithstanding some notable exceptions.

5. Insensitivity of the Guyana Agricultural and General Workers' Union (GAWU) to the realities of the sugar industry, especially its deteriorating financial position. This is reflected in the unrelenting union demands leading to escalating labor costs with negative repercussions on the morale of the management team.
6. Marketing constraints, including loss of EU preferential prices.
7. Political influence on the organization.
8. Not adhering to basic established agricultural practices.
9. Failure to recognize that GuySuCo is, in the final analysis, a business that must be run profitably to survive.
10. Failure to demonstrate appreciation of the national role of GuySuCo in terms of its potential contribution to the socio-economic well-being of Guyana.

The report places special emphasis on the company's very high labor costs: 65% of the total cost of sugar production in Guyana. In addition, it questions how, between 2010 and 2014, labor costs could increase by GYD 6.3 billion, or 43%, while the company was running at a loss.

To address the problems faced by GuySuCo, the Commission provided a set of high-impact recommendations. They included the privatization of GuySuCo, to be completed within a three-year period, and the divestment of all assets, activities and operations by the State. During that period, the Commission recommended that the government maintain its financial support to keep the company in operation. Management should focus fully on lowering the operational cost to reduce the losses GuySuCo incurs.¹³

To keep GuySuCo in operation, the Ministry of Agriculture expects additional bailouts will be needed in 2017 and 2018, amounting to GYD 18.6bn and GYD 21.4bn respectively. This situation is highly unsustainable because it keeps resources away from other sectors and goes against the government's stated objective of investing in diversifying the agricultural sector.

¹³ Report of the Commission of Inquiry (2015), http://www.parliament.gov.gy/documents/documents-laid/5550-report_of_the_commission_of_inquiry_into_guyana_sugar_corporation_vol_1.pdf

The report of the Commission of Inquiry was delivered to the Cabinet, which in December 2016 appointed a sub-committee consisting of several Ministers (Agriculture, Finance and Natural Resources) to study the options and make proposals for sugar sector reform. The outcome of these decisions was not known to the authors at the time of preparation of this report.

Nontraditional crops

According to the National Agriculture Development Strategy, Guyana has a strong focus on the export of various fruits and vegetables of the non-traditional (non-rice and sugar) sub-sector. The strategy highlights the importance of promoting coconut, pineapple, beans, and tomatoes, among others.

The country has signed protocols for exporting fruits and vegetables to Caribbean countries, particularly to Barbados. The IDB-funded Agriculture Export Diversification Program, which was implemented between 2007 and 2014, was established to increase production and processing of non-traditional products by building packaging facilities and strengthening the New Guyana Marketing Corporation, the government agency in charge of marketing and promoting non-traditional crops.

Livestock

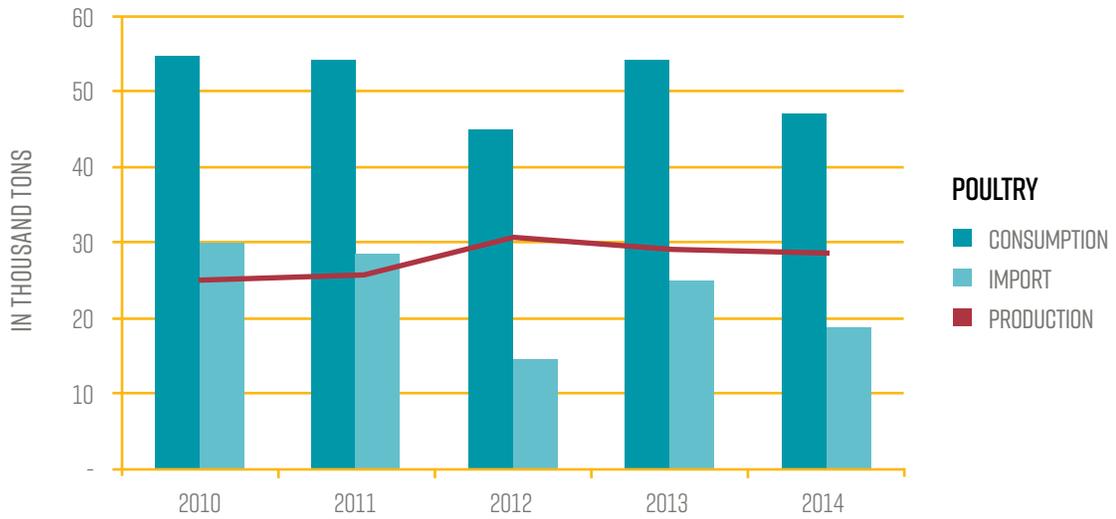
Figure 16 and figure 17 provide an overview of the production, import, and consumption of poultry and beef, the main livestock commodities analyzed. Poultry is the most important livestock commodity in Guyana, with total annual poultry production hovering around 30,000 tons.

Domestic poultry producers are protected through a 100% tariff on poultry imports. Increasingly, reports state that Guyana should benefit from CARICOM's USD 350 million per year poultry market, in particular through exports to Trinidad & Tobago and Barbados. However, sanitary and phytosanitary requirements hold back Guyana's potential to export poultry to CARICOM countries. The new Veterinary Diagnostics Laboratory of the Ministry of Agriculture should address this constraint.

Imports of animals, animal products, and animal parts are subject to import licensing requirements by the Ministry of Tourism, Industry and Commerce. A permit from the GLDA must be obtained before applying for import licenses. When applying for an import permit, importers must produce a sanitary certificate from the relevant authorities of the exporting country. Permits from the GLDA are consignment specific and valid for up to six months.

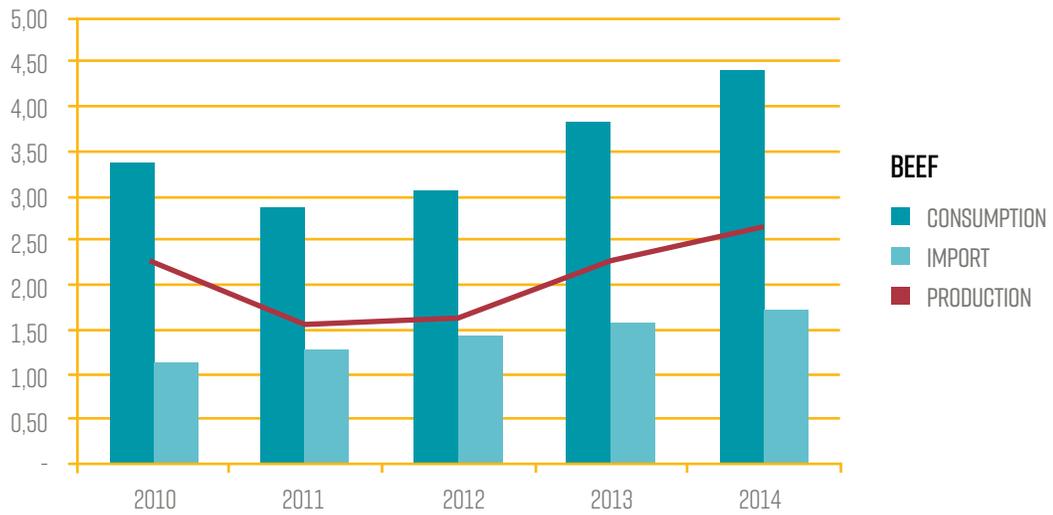
ACCORDING TO THE NATIONAL AGRICULTURE DEVELOPMENT STRATEGY, GUYANA HAS A STRONG FOCUS ON THE EXPORT OF VARIOUS FRUITS AND VEGETABLES OF THE NON-TRADITIONAL (NON-RICE AND SUGAR) SUB-SECTOR. THE STRATEGY HIGHLIGHTS THE IMPORTANCE OF PROMOTING COCONUT, PINEAPPLE, BEANS, AND TOMATOES, AMONG OTHERS.

FIGURE 16: PRODUCTION, IMPORT, AND CONSUMPTION OF POULTRY IN GUYANA, 2010 - 2014



Source: FAOSTAT.

FIGURE 17: PRODUCTION, IMPORT, AND CONSUMPTION OF BEEF IN GUYANA, 2010 - 2014



Source: FAOSTAT.

3. ESTIMATES OF SUPPORT TO AGRICULTURE



3.1 Methodology

The OECD's application of the Producer Support Estimate (PSE) methodology (OECD, 2016) provides a standardized, quantitative method of measurement of support to the agricultural sector. The OECD has officially calculated it for several countries since 1987, and since 2003, the IDB Agrimonitor initiative has applied the methodology to 18 of its member countries in Latin America and the Caribbean.

Quantitative policy analysis compares observed market conditions with the benchmark situation (free market). The aggregated effect of the policy in the supply-demand model is measured by the price ratios in the "with policy" and "without policy" situations. Thus, output producers' prices (farm gate prices) are compared to the prices that would be expected without policy interventions, e.g. market equilibrium or reference prices. The effect of public policy is measured by the

QUANTITATIVE POLICY ANALYSIS COMPARES OBSERVED MARKET CONDITIONS WITH THE BENCHMARK SITUATION (FREE MARKET).

difference between market and reference prices. If the difference between market and reference output prices is positive, public policy provides benefits to producers. If negative, public policy entails implicit taxation of farmers.

The methodology measures support to producers (PSE and related indicators), to consumers (CSE, CSCT), and to the farm sector as a whole (GSSE). In addition, the measures include the total policy transfers to the agricultural and food sector (TSE). For three commodities, the Effective Rate of Protection (ERP) indicators were also calculated to take into account the support policy along with the value chain. See Annex 1 for the glossary of the indicators used in this section.

Selection of commodities

This study is the first attempt to analyze the PSE for Guyana. Since some of the PSE indicators are commodity-specific, the commodities were selected to ensure Guyana's most important products are covered by the analysis and to maximize the policy relevance of the analysis. The commodity selection attempted to include both pre-defined, standard MPS commodities, and the country's most potentially competitive commodities.

The OECD methodology requires inclusion of all commodities with a more than 1% share in total value of agricultural production in the support estimates. The goal of the commodity selection process is for the sum of the production value of the commodities included to cover at least 70% of the total value of agricultural production for the previous three years. An attempt was made to include the commodities that are important for Guyana's agricultural strategy and the commodities that are the focus of agricultural policy, such as rice.

The commodities selected (for which the market price support, MPS, is calculated) to estimate the PSE in Guyana in 2010 - 2014 are listed in Table 10. These commodities on average accounted for 91% of the total value of Guyana's agricultural production for 2010 - 2014. As is shown in Figure 14, rice, sugar cane, and poultry are by far the most important commodities of the Guyanese agricultural sector. Rice and sugar alone account for over 70% of the total value of Guyana's agricultural production.

THE COMMODITY SELECTION ATTEMPTED TO INCLUDE BOTH PRE-DEFINED, STANDARD MPS COMMODITIES, AND THE COUNTRY'S MOST POTENTIALLY COMPETITIVE COMMODITIES.

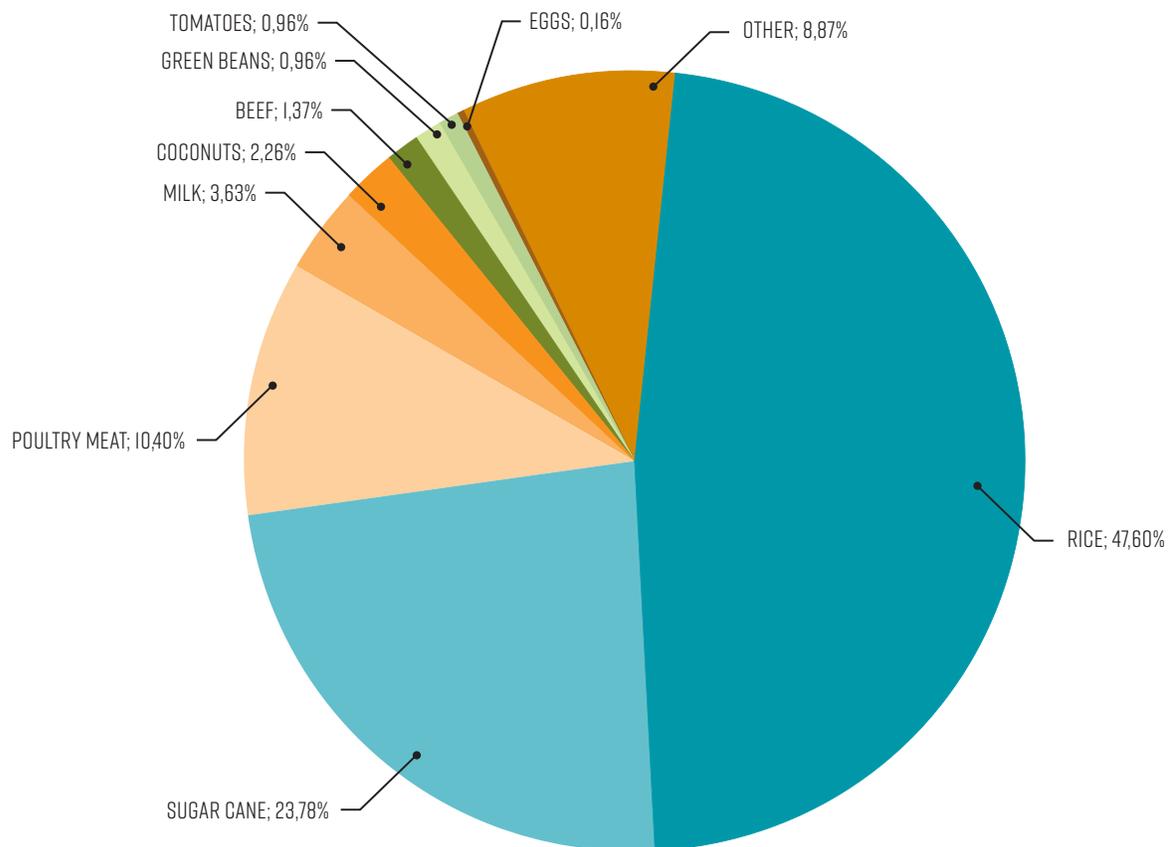
TABLE 10: OVERVIEW OF SELECTED COMMODITIES ACCORDING TO TRADE STATUS

| SELECTED EXPORT COMMODITIES | SELECTED IMPORT COMMODITIES |
|-----------------------------|-----------------------------|
| RICE | POULTRY |
| SUGAR | BEEF |
| COCONUT | |
| GREEN BEANS | |
| TOMATOES | |

The Government of Guyana considers milk an important commodity and a product with significant potential for diversification within the sector. The government has also repeatedly expressed interest in investing in a milk processing plant to increase milk production and promote domestic processing of dairy products. However, because the sector is currently very informally structured and no reliable price or production time series data exist, the authors have not been able to include milk in this first set of calculations and have excluded it from the analysis.

Though eggs were initially considered, this commodity is left out of the PSE calculations because egg production represents less than 1% of the total value of agricultural production in Guyana.

Finally, the diversification strategy of the Government of Guyana also includes focus crops such as cassava, peanuts, and horticultural crops. Through increased investment in agricultural statistics, the government may be able to obtain reliable producer prices and production data more systematically in the future. These commodities, along with milk, may therefore be included in a later round of PSE calculations for Guyana.

FIGURE 18: COMMODITIES COVERED - SHARE IN TOTAL PRODUCTION VALUE


Source: Authors' estimates based on FAOSTAT and Ministry of Agriculture data.

3.2 Description of data used

Availability of agricultural statistics in Guyana is relatively poor. The Ministry of Agriculture lacks a unit dedicated to consolidating the agricultural statistics collected by other agencies. The main source for data on trade is the Guyana Bureau of Statistics. For data on production and crop prices, a key source is the New Guyana Marketing Corporation (New GMC). For livestock, the main source is the Guyana Livestock Development Agency (GLDA). International databases—particularly FAOSTAT and UN COMTRADE—provide additional data sources.

Domestic prices

Domestic prices for all commodities are farm-gate prices obtained from FAOSTAT, the New Guyana Marketing Corporation, the Guyana Rice Development Board, and GuySuCo. Unfortunately, the GLDA stopped collecting farm-gate price data for livestock commodities after 2011. Prices for the years 2012 – 2014 were therefore estimated using the Consumer Price Index for these commodities.

Reference prices

Reference prices are calculated in different ways depending on the trade status of the product. For exported commodities (rice, sugar, coconut, green beans, tomatoes) the reference prices are average export unit values. The average unit values at the border were adjusted for marketing margins (processing, transportation and handling costs) in order to ensure comparability with the observed farm-gate prices.

Exchange rate

The nominal exchange rate was used for exchange rate calculations.

Budget data

For the budget data, the Volumes 1, 2, and 3 of the Estimates of the Public Sector as presented to the National Assembly have been used for the years 2010 – 2015. Aggregates of recurrent and capital expenditure are available, and fiches with details on the various programs are included in the budget books. Nonetheless, reporting of actual expenditure is sometimes inconsistent and differs from program to program. While for some programs, actual expenditures from past years are included consistently, only the budgeted amounts are available for other programs. This means that it was not always possible to distinguish among the financial allocations for the different components of each program. Where no other indications or insights are available for support programs that include components of both PSE and GSSE, 50% of costs are attributed to GSSE and 50% to the PSE. If a major part of the spending can be identified as a budget transfer, all program findings have been treated as such (PSE), while if the majority of funding is general services support, it is treated as GSSE. Forestry and fishery support programs are not included in PSE/CSE/GSSE calculations.

The assumption is that the budget is spent evenly over the course of the year, and spending was thus redistributed to obtain calendar year data.

**FOR EXPORTED COMMODITIES
(RICE, SUGAR, COCONUT,
GREEN BEANS, TOMATOES)
THE REFERENCE PRICES
ARE AVERAGE EXPORT UNIT
VALUES.**

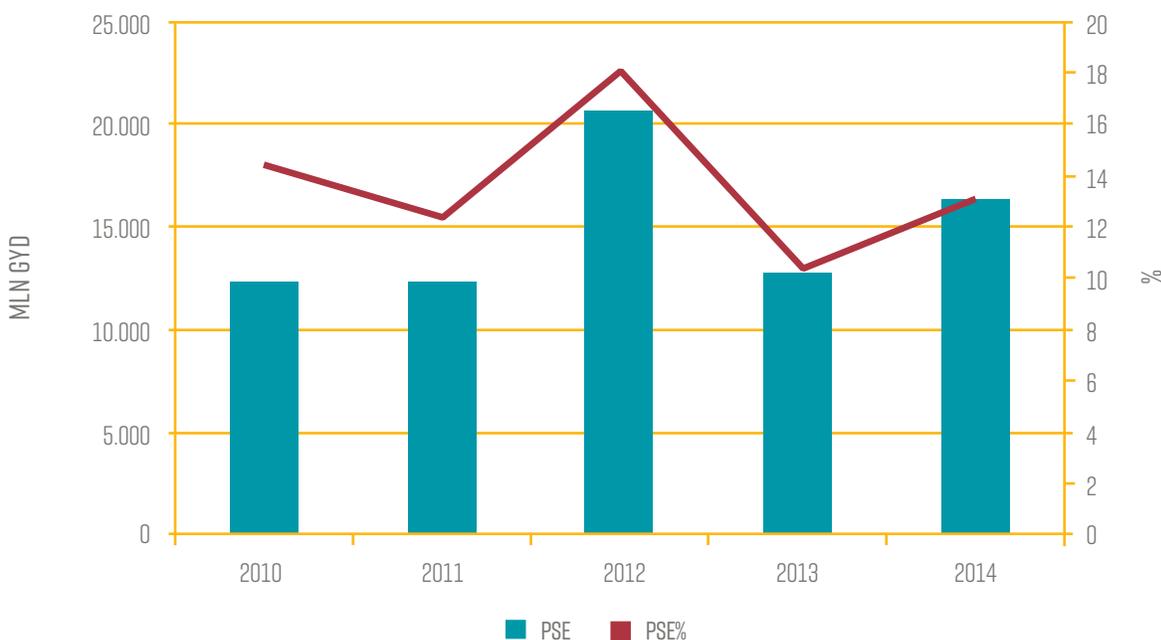
TABLE 11: COMPONENTS OF PSE INCLUDED FOR THE DIFFERENT YEARS

| YEAR | MARKET PRICE SUPPORT | BUDGETARY TRANSFERS |
|------|----------------------------------------|---------------------|
| 2010 | X | X |
| 2011 | X | X |
| 2012 | X | X |
| 2013 | X | X |
| 2014 | X (EXCLUDING GREEN BEANS AND TOMATOES) | X |

3.3 Producer support estimates

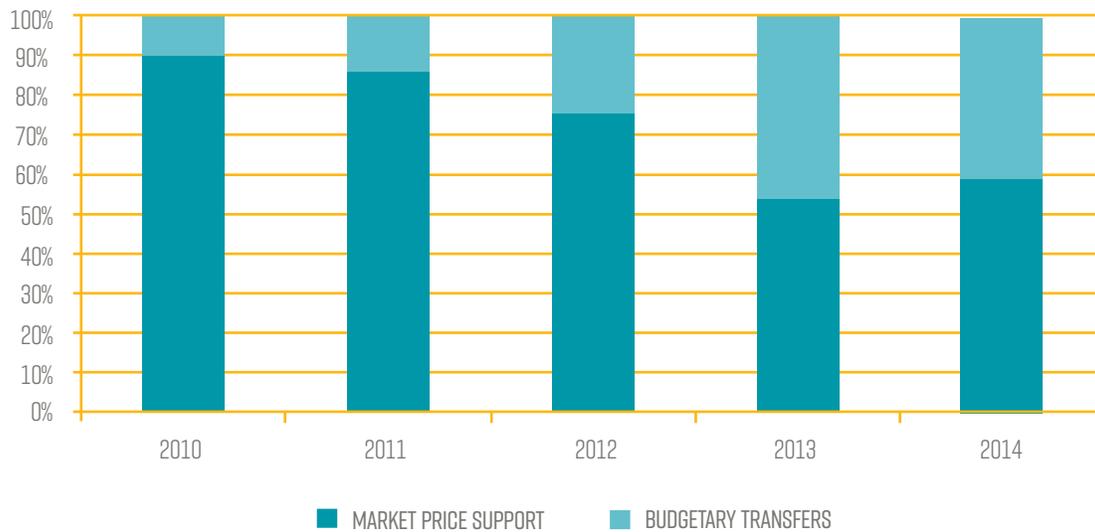
The PSE is the major indicator used by OECD and other international organizations to estimate the effect of policy interventions on the income and expenditures of agricultural producers and consumers, and it gives an indication of the level of public sector support to food and agriculture in a given country.

In Guyana, producers are positively supported, though levels of support have fluctuated between years in the period under review. The overall PSE over the 2010 – 2014 period has been GYD 12.3bn in 2010 and 2011, GYD 20.6bn in 2012, GYD 12.8bn in 2013 and GYD 16.3bn in 2014. The PSE as a percentage of total farm receipts (PSE%) slightly decreased from 14.45% in 2010 to 13.19% in 2014.

FIGURE 19: NATIONAL PSE FOR GUYANA, 2010 – 2014, IN MILLIONS OF GYD AND AS % OF GROSS FARM RECEIPTS


Source: Authors' estimations.

As in most developing countries, the main component of support to the agricultural sector consists of Market Price Support (MPS). MPS, which measures the effect of policies on producer prices, has a relatively strong influence on production decisions by farmers and therefore distorts agricultural markets. The main driver of MPS in Guyana is the import tariff in place to protect domestic producers of poultry meat. This measure allows them to obtain higher prices for their chicken. As can be seen in Figure 20, on average, from 2010 to 2014, MPS represented 72.6% of total national PSE. However, the shares of budget transfers in total support to agricultural producers have increased significantly in more recent years. In 2014, budgetary transfers amounted to 41.1% of total PSE. This increase in budgetary transfers as a share of producer support clearly reflects the increased transfers by the Government of Guyana to GuySuCo in support of the sugar sub-sector.

FIGURE 20: SHARES OF MPS AND BUDGETARY TRANSFERS IN TOTAL PSE, 2010 - 2014, IN %


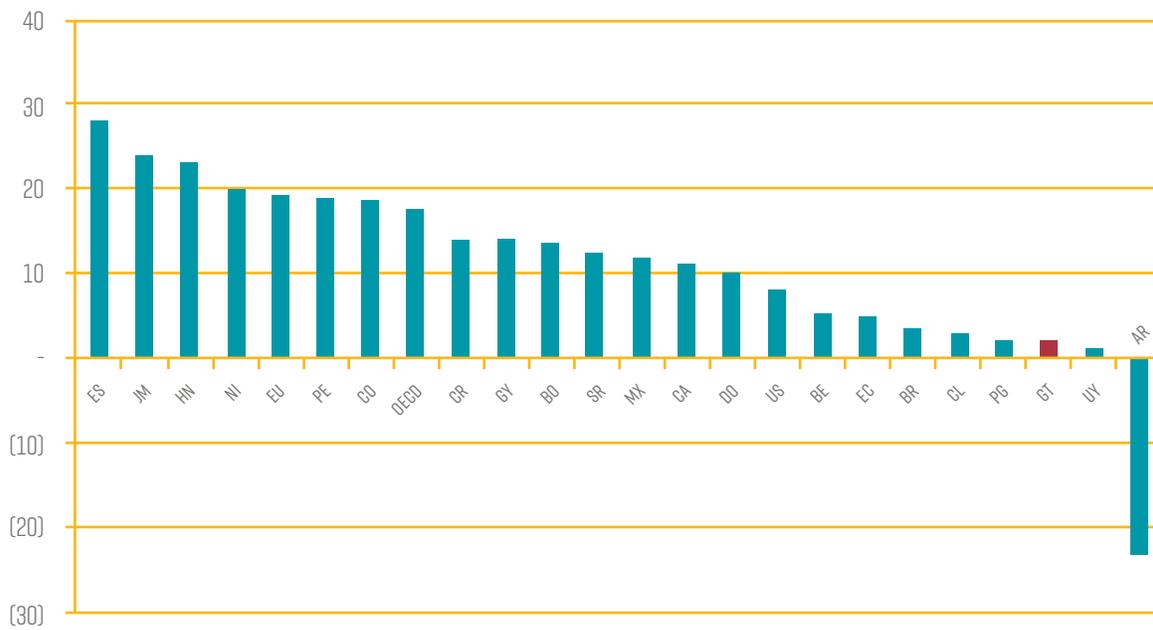
Source: Authors' calculations.

The PSE%, which indicates support as a percentage of total farm receipts, fluctuated throughout the period under review between 10.49% (2013) and 18.04% (2012).

International comparison of producer support

With an average PSE% of 13.91% over the last three years analyzed, Guyana's support levels are comparable to those of other countries in the region and to overall support in the OECD and the European Union. As Figure 21 shows, levels of producer support are lower than in Central America and the OECD, and very close to the levels of Costa Rica, Bolivia, and Suriname. They are also considerably lower than in Jamaica, a close reference for Guyana. The high PSE indicators for Jamaica are influenced by the country's very high tariffs (400%) to shield its poultry sector from cheaper imports, resulting in levels of producer support that are the second highest in the region.

FIGURE 21: PSE% IN SELECTED COUNTRIES AND REGIONS, 2012 - 2014



* Dominican Republic, Suriname, Uruguay 2011-2013, Argentina, Costa Rica, Ecuador, Honduras 2010-2012, El Salvador 2011-2012, Guatemala 2009-2011, Nicaragua 2009-2010, Bolivia 2008-2009
 Source: Authors' estimations.

TABLE 12: OVERVIEW OF AGRICULTURAL SECTOR SUPPORT IN GUYANA, 2010 - 2014

| | UNITS | 2010 | 2011 | 2012 | 2013 | 2014 |
|------------------------------------------------------|--------|------------------|------------------|-------------------|-------------------|-------------------|
| I. TOTAL VALUE OF PRODUCTION (AT FARM GATE) | GYD MN | 84,193.18 | 97,774.81 | 108,956.67 | 115,761.18 | 116,995.74 |
| I.I. OF WHICH, SHARE OF MPS COMMODITIES (%) | | 79.81 | 79.54 | 73.46 | 74.35 | 77.81 |
| II. TOTAL VALUE OF CONSUMPTION (AT FARM GATE) | GYD MN | 63,405.58 | 74,946.06 | 88,539.26 | 97,909.18 | 94,762.94 |
| II.I. OF WHICH, MPS COMMODITIES | GYD MN | 50,606.33 | 59,613.86 | 65,037.41 | 72,792.07 | 73,738.04 |
| III.1 PRODUCER SUPPORT ESTIMATE (PSE) | GYD MN | 12,348.96 | 12,307.50 | 20,577.59 | 12,775.07 | 16,310.20 |
| A. SUPPORT BASED ON COMMODITY OUTPUTS | GYD MN | 11,085.39 | 10,558.98 | 15,489.15 | 6,794.99 | 9,604.51 |
| AI. MARKET PRICE SUPPORT | GYD MN | 11,085.39 | 10,558.98 | 15,489.15 | 6,794.99 | 9,604.51 |
| SUGAR MPS | GYD MN | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RICE MPS | GYD MN | 3,002.55 | 3,702.11 | 2,941.94 | -2,936.61 | -603.82 |
| COCONUT MPS | GYD MN | 1,388.65 | -151.29 | 278.77 | 391.90 | 1,356.19 |
| BEANS MPS | GYD MN | 1,023.63 | 829.56 | 772.53 | 564.84 | 0.00 |
| TOMATOES MPS | GYD MN | -128.43 | 63.71 | 31.66 | 217.30 | 0.00 |
| BEEF MPS | GYD MN | -2,065.71 | -1,197.76 | -656.45 | -1,504.74 | -899.22 |
| POULTRY MPS | GYD MN | 5,626.97 | 5,152.53 | 8,009.26 | 8,319.15 | 7,620.43 |
| OTHER MPS | GYD MN | 2,237.73 | 2,160.12 | 4,111.44 | 1,743.15 | 2,130.94 |
| A2. PAYMENTS BASED ON OUTPUT | GYD MN | 0 | 0 | 0 | 0 | 0 |
| B. PAYMENTS BASED ON INPUT USE | GYD MN | 1,263.57 | 1,748.52 | 5,088.44 | 5,980.07 | 6,705.69 |
| BI. VARIABLE INPUT USE | GYD MN | 436.39 | 354.11 | 359.93 | 383.34 | 408.13 |
| B2. FIXED CAPITAL FORMATION | GYD MN | 450.50 | 1,038.13 | 4,353.00 | 5,360.00 | 6,000.00 |
| B3. ON-FARM SERVICES | GYD MN | 376.67 | 356.28 | 375.51 | 236.74 | 297.56 |
| G. MISCELLANEOUS PAYMENTS | GYD MN | | | 345.65 | 259.20 | 30.40 |
| III.2 PERCENTAGE PSE | | 14.45 | 12.37 | 18.04 | 10.49 | 13.19 |

| | UNITS | 2010 | 2011 | 2012 | 2013 | 2014 |
|----------------------------------------------------------|--------|-----------|-----------|------------|-----------|-----------|
| IV. GENERAL SERVICES SUPPORT ESTIMATE (GSSE) | GYD MN | 2,899.57 | 5,420.93 | 5,104.24 | 5,748.96 | 5,254.17 |
| H. AGRICULTURAL KNOWLEDGE AND INNOVATION SYSTEM | GYD MN | 418.05 | 642.10 | 654.64 | 1,007.54 | 988.50 |
| HI. AGRICULTURAL KNOWLEDGE GENERATION | GYD MN | 392.05 | 533.33 | 516.45 | 852.65 | 802.12 |
| H2. AGRICULTURAL KNOWLEDGE TRANSFER | GYD MN | 26.00 | 108.77 | 138.19 | 154.89 | 186.38 |
| I. INSPECTION AND CONTROL | GYD MN | 193.19 | 430.32 | 445.12 | 558.51 | 535.63 |
| II. AGRICULTURAL PRODUCT SAFETY AND INSPECTION | GYD MN | 140.50 | 180.54 | 126.50 | 231.68 | 118.20 |
| I2. PEST AND DISEASE INSPECTION AND CONTROL | GYD MN | 52.69 | 249.78 | 318.62 | 326.83 | 417.43 |
| I3. INPUT CONTROL | GYD MN | 0 | 0 | 0 | 0 | 0 |
| J. DEVELOPMENT AND MAINTENANCE OF INFRASTRUCTURE | GYD MN | 1,879.70 | 3,906.15 | 3,674.59 | 3,626.48 | 3,376.38 |
| J1. HYDROLOGICAL INFRASTRUCTURE | GYD MN | 1,357.07 | 3,413.28 | 3,129.18 | 3,128.41 | 3,000.89 |
| J2. STORAGE, MARKETING AND OTHER PHYSICAL INFRASTRUCTURE | GYD MN | 175.70 | 170.38 | 226.55 | 350.05 | 227.07 |
| J3. INSTITUTIONAL INFRASTRUCTURE | GYD MN | 221.50 | 189.57 | 176.50 | 0.00 | 0.00 |
| J4. FARM RESTRUCTURING | GYD MN | 125.43 | 132.93 | 142.36 | 148.02 | 148.41 |
| K. MARKETING AND PROMOTION | GYD MN | 408.63 | 442.37 | 329.89 | 556.44 | 353.66 |
| K1. COLLECTIVE SCHEMES FOR PROCESSING AND MARKETING | GYD MN | 72.63 | 67.43 | 60.12 | 64.61 | 76.40 |
| K2. PROMOTION OF AGRICULTURAL PRODUCTS | GYD MN | 336.00 | 374.94 | 269.77 | 491.83 | 277.26 |
| V.I CONSUMER SUPPORT ESTIMATE (CSE) | GYD MN | -8,527.72 | -8,284.33 | -13,611.47 | -8,123.76 | -7,851.73 |
| O. TRANSFERS TO PRODUCERS FROM CONSUMERS (-) | GYD MN | -8,801.79 | -8,273.72 | -13,115.71 | -8,127.45 | -8,259.60 |
| O.I. OF WHICH, MPS COMMODITIES | GYD MN | 7,025.04 | 6,581.11 | 9,634.28 | 6,042.48 | 6,427.06 |
| P. OTHER TRANSFERS FROM CONSUMERS (-) | GYD MN | -5.45 | -290.14 | -775.28 | -621.67 | -217.50 |
| P.I. OF WHICH, MPS COMMODITIES | GYD MN | 4.35 | 230.78 | 569.49 | 462.19 | 169.24 |
| Q. TRANSFERS TO CONSUMERS FROM TAXPAYERS | GYD MN | 279.53 | 279.53 | 279.53 | 625.36 | 625.36 |
| Q.I.COMM. SPECIFIC TRANSFERS TO CONSUMERS | GYD MN | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Q.2.NON-COMM. SPECIFIC TRANSF. TO CONSUMERS | GYD MN | 279.53 | 279.53 | 279.53 | 625.36 | 625.36 |

| | UNITS | 2010 | 2011 | 2012 | 2013 | 2014 |
|-----------------------------------------|--------|-----------|-----------|-----------|-----------|-----------|
| R. EXCESS FEED COST | GYD MN | 0.00 | 0.00 | 0.00 | 0.00 | 625.36 |
| V.2 PERCENTAGE CSE | | -13.51 | -11.10 | -15.42 | -8.35 | -8.34 |
| VI. TOTAL SUPPORT ESTIMATE (TSE) | GYD MN | 15,528.06 | 18,007.96 | 25,961.36 | 19,149.39 | 22,189.74 |
| S. TRANSFERS FROM CONSUMERS | GYD MN | 8,807.25 | 8,563.86 | 13,890.99 | 8,749.12 | 8,477.10 |
| T. TRANSFERS FROM TAXPAYERS | GYD MN | 6,726.26 | 9,734.23 | 12,845.65 | 11,021.93 | 13,930.14 |
| U. BUDGET REVENUES (-) | GYD MN | -5.45 | -290.14 | -775.28 | -621.67 | -217.50 |

Source: authors' calculations.

Market Price Support

As mentioned above, the PSE indicator is composed of two elements: MPS and direct support from the budget.

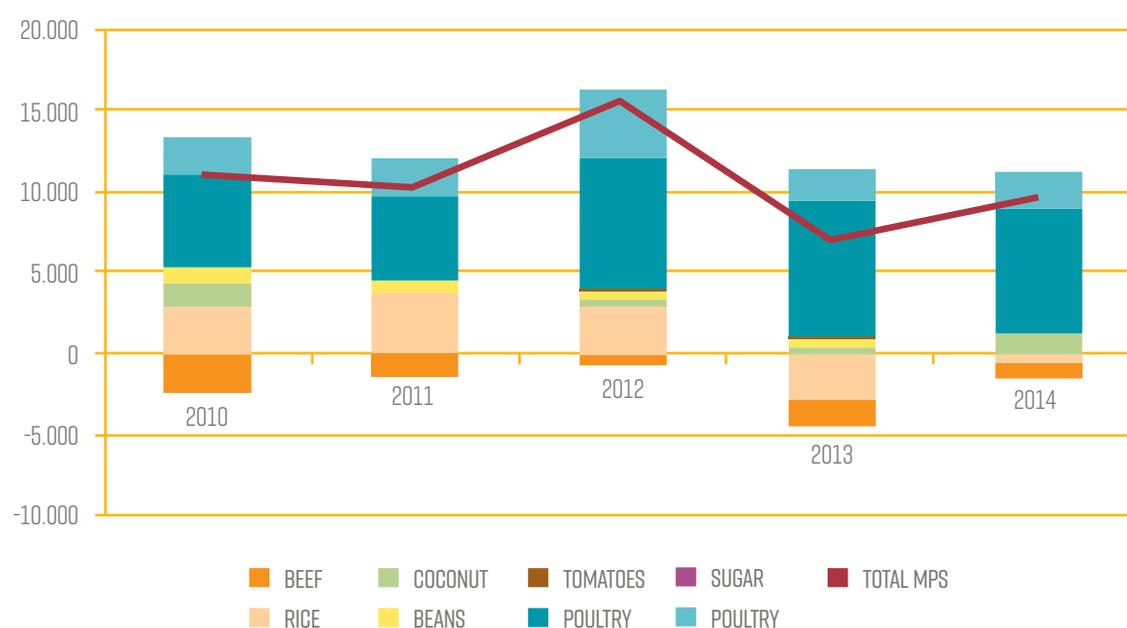
MPS is the component of support that is based on the differences between domestic and international prices and, therefore, affects production decisions and terms of trade. Gaps between domestic farm gate prices and reference prices can emerge as a result of trade policies, including tariff and non-tariff trade barriers, or as a consequence of excessive costs and inefficiencies along the value chain. Policy interventions that affect MPS are considered to be among the most trade distorting measures of support (OECD, 2011). They are also a less effective means of support to producers compared to direct income payments, per-hectare payments, and similar support measures, which are not related to the production levels.¹⁴

Negative Market Price Support means that, as a result of policy or structure of the value chain, prices received by producers are lower than they should be on the basis of the international market price of the commodity. This results in a disincentive for producers. Keeping prices low could be an implicit policy to maintain the competitiveness of Guyanese rice internationally, for example, and to increase market shares. For an export commodity such as rice, the reasons for the disincentives could be explicit or implicit policies (such as export taxes or inspection fees) or value chain inefficiencies (such as monopsonies or excessive profit margins during processing, transport, or handling).

¹⁴ Anriquez et al (2016).

All commodities receive positive or neutral transfers resulting from government's agricultural policy, as shown by positive MPS levels, with the exception of beef. The positive support levels mean that in the absence of policy interventions and perfect transmission of the world market price, producers would receive lower prices for their output than they currently get. Beef producers, however, receive lower prices than those prevailing in the international market.

FIGURE 22: POSITIVE AND NEGATIVE MPS IN GUYANA, 2010 - 2014, IN MILLIONS OF GYD

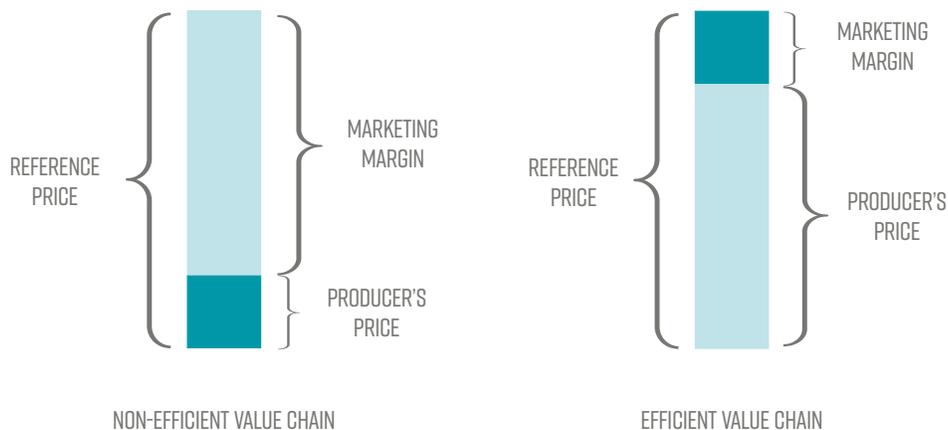


Source: Authors' calculations.

Poultry was the most supported commodity during the entire study period in absolute terms. However, producers of rice and beans also received relatively high levels of positive MPS as a share of their respective production values in most years. This means that producers of these commodities received higher prices than they would get in the absence of policy and in an efficient value chain environment. It is not uncommon to observe high positive transfers for imports, as it is consistent with the policy objective of import substitution. However, rice MPS turned slightly negative in 2013 and 2014 when the producer prices decreased as international market prices increased. The MPS of sugar is set at zero. Given that GuySuCo is the only sugar exporter in Guyana and that the price it receives depends entirely on the international market price, there is no MPS.

When markets are perfectly competitive and integrated, MPS is exclusively the result of direct and indirect policy interventions. In developing countries, however, this is not the case, as MPS also captures the effect of market infrastructure deficiencies, information asymmetry, lack of storage, and excessive market power in the value chain (Barreiro-Hurlé and Witwer, 2013).

FIGURE 23: CONTRIBUTION OF VALUE CHAIN INEFFICIENCIES TO MPS LEVELS



Source: Prepared by author.

As is shown in Figure 22, at the same price levels, benefits are distributed differently between domestic producers and the marketing margin, which includes inefficiencies in processing, processor market power, transportation losses due to poor road infrastructure, and the cost of overcoming bureaucratic obstacles. These costs increase the marketing margin and the PSE, and result in an overestimation of producer support. If Guyana wishes to increase the competitiveness of its agricultural sector, it must address structural factors that increase marketing margins.

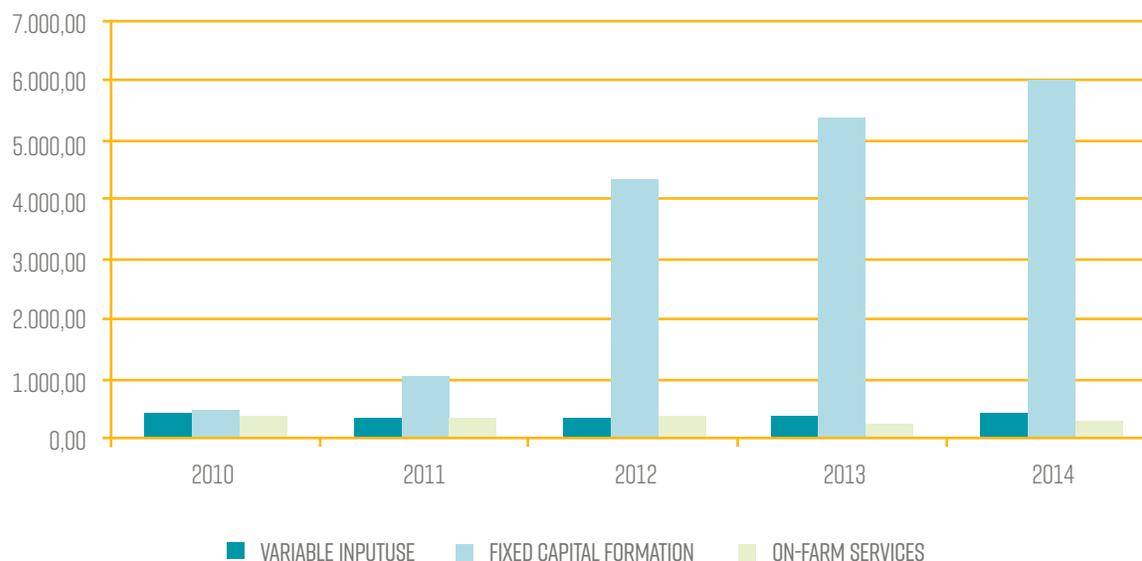
Budget Transfers

The second component of producer support consists of transfers by the public sector to agricultural producers. Unlike market price support, which is financed by consumers who pay higher prices to producers, these so-called budget transfers are financed by taxpayers through the government budget or through contributions from international donors. The budget transfer level often depends on a country's general fiscal policy

and capacity. Budget transfers to agricultural producers include subsidized loans to farmers and transfers resulting from tax concessions that create revenue foregone in support of the agricultural sector at the expense of taxpayers.

Budget transfers to the agricultural sector in Guyana that create transfers to individual producers are included in PSE. As shown in Figure 24 below, these budget transfers consist of payments for variable input use, fixed capital formation, and on-farm services. The on-farm services expenditures include part of the extension service expenditure and on-farm livestock development services delivered by the GLDA. The fixed capital formation expenditure includes investments in a new rice seed facility and in the new packaging facility of the New Guyana Marketing Corporation. It also includes the grants to GuySuCo, which is why the fixed-capital formation expenditure has increased so much since 2012.

FIGURE 24: BUDGET TRANSFERS IN PRODUCER SUPPORT ESTIMATES IN GUYANA, 2010 - 2014, IN MILLIONS OF GYD



Source: Authors' calculations.

3.4 Indicators of support to individual commodities

The level of support to individual commodities is measured through MPS and producer single commodity transfer (SCT), which indicate the support provided through both price support policies and budget transfers benefiting specific commodities. The SCT% indicator provides insight into the total support to each commodity as a percentage of the product's gross farm receipts. The producer SCT% figures for Guyana are listed in Table 13.

TABLE 13: SINGLE COMMODITY TRANSFERS BY COMMODITY FOR GUYANA, IN PERCENTAGE OF GROSS RECEIPTS FOR EACH COMMODITY

| | 2010 | 2011 | 2012 | 2013 | 2014 |
|----------|------|------|------|------|------|
| SUGAR | 2 | 4 | 19 | 25 | 24 |
| RICE | 11 | 10 | 7 | -6 | -1 |
| COCONUT | 28 | -16 | 27 | 32 | 30 |
| BEANS | 57 | 56 | 67 | 45 | N/A |
| TOMATOES | -50 | 7 | 10 | 51 | N/A |
| POULTRY | 50 | 44 | 51 | 53 | 52 |
| BEEF | -138 | -107 | -55 | -90 | -45 |

Source: Authors' calculations.

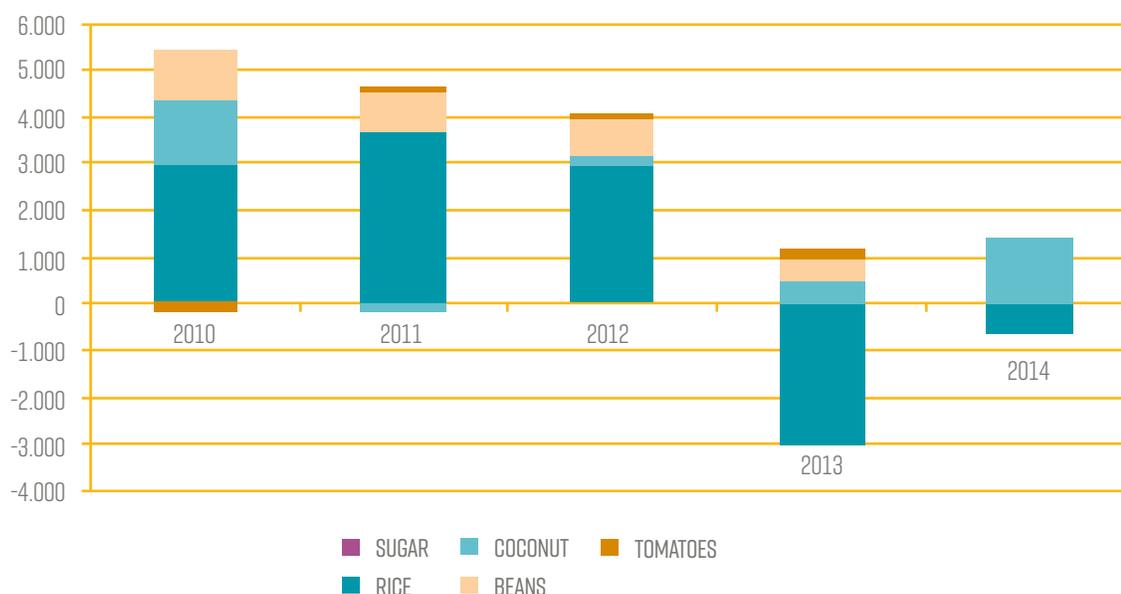
3.4.1 Crops

As demonstrated in Figure 25 below, MPS to crops has generally been positive, though negative support was recorded for rice in 2013 and 2014. In addition, slightly negative support was also recorded for tomatoes and coconut in 2010 and 2011 respectively. Support to the rice sector is driving the overall MPS for crops, not only in relative terms but also because of its large share of total agricultural value of production.

Though the negative support for the rice sector seems large in absolute terms, in relative terms it represents only 6% of the total value of rice production. The authors have not been able to identify an explicit policy that explains the gap between support

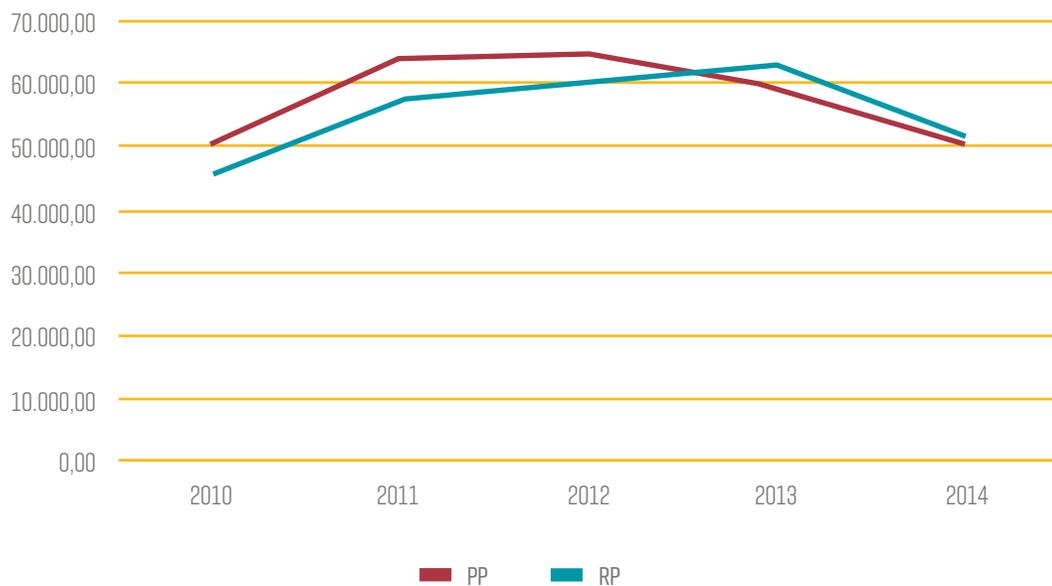
for rice in 2012 (positive) and 2013 (negative). However, a record harvest was recorded in 2013, and between 2012 and 2013 rice production increased by 27% from 649,000 tons to 824,000 tons. This seems to have increased the bargaining power of millers and exporters in 2013, who could offer a lower price to producers while benefiting from a price in the international market that was slightly higher than in 2012. As a result, the gap between the producer price and the international price increased, resulting in negative MPS for Guyanese rice farmers.

FIGURE 25: MPS FOR CROPS, IN MILLIONS OF GYD, 2010 - 2014



Source: Authors' estimates.

The producer price and reference price of rice paddy in Guyana follow the same pattern. This means that the international market price is transmitted to farmers during most of the period under review. From 2010 to 2012, the producer price of rice paddy was higher than the reference prices, which means that farmers were supported by policy. However, as shown in Figure 26, the gap between reference prices (RP) and producer prices (PP) is gradually closing. In 2014, the producer price was equal to the reference price. This suggests that price transmission is increasing and prices are increasingly connected to the international price. The sub-sector benefits from strong support in marketing, extension, and research delivered by the GRDB. However, it should be noted that these services are funded by the sector itself through a GRDB levy of US\$8/ton on white rice.

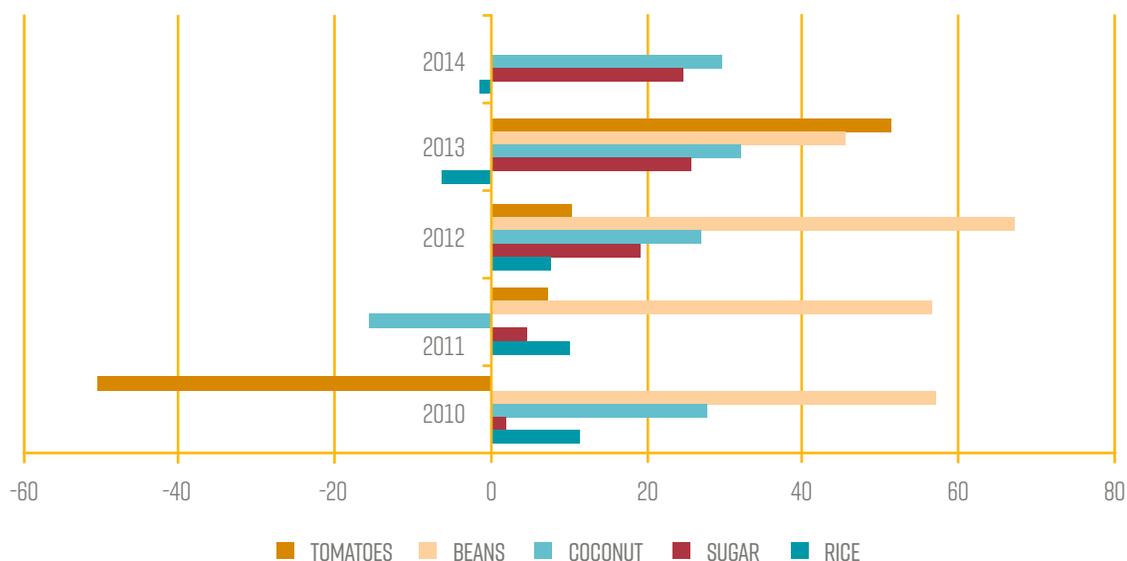
FIGURE 26: PRODUCER PRICE (PP) AND REFERENCE PRICE (RP) OF RICE IN GUYANA, 2010 - 2014, IN GYD PER TON OF PADDY


Source: Authors' calculations.

GuySuCo operates an integrated value chain in which there are no observed farm gate prices. Of the total volume of sugar cane processed by GuySuCo, nearly 90% is produced by its own estates, while only 10% (2011) is procured from private farmers under varying outgrower contracts. As a result, there is no average producer price for sugar cane reported and the MPS for sugar is set to zero. A more in-depth analysis of whether private sugar farmers receive positive or negative price support could be conducted in a follow-up PSE study. Although no MPS for sugar has been recorded in this study, support to the sugar sector is provided in the form of significant and increasing levels of direct budget support.

When budget support allocated to specific commodities is taken into account, the SCTs can be calculated (see Figure 27). As a percentage of farm receipts, beans receive the strongest support. SCT% for sugar is increasing due to the higher contributions to the sugar sub-sector from the government budget since 2012. Due to the lack of availability of production data for tomatoes and beans for the year 2014, no MPS and SCT indicators have been calculated for these crops in that year.

FIGURE 27: SCTS FOR CROPS, IN PERCENTAGE OF FARM RECEIPTS, 2010 - 2014



Source: Authors' estimates.

3.4.2 Livestock

Support to the two main commodities of Guyana's livestock sector is mixed. While beef producers have negative MPS overall, support for poultry is strong in all years covered by the review.

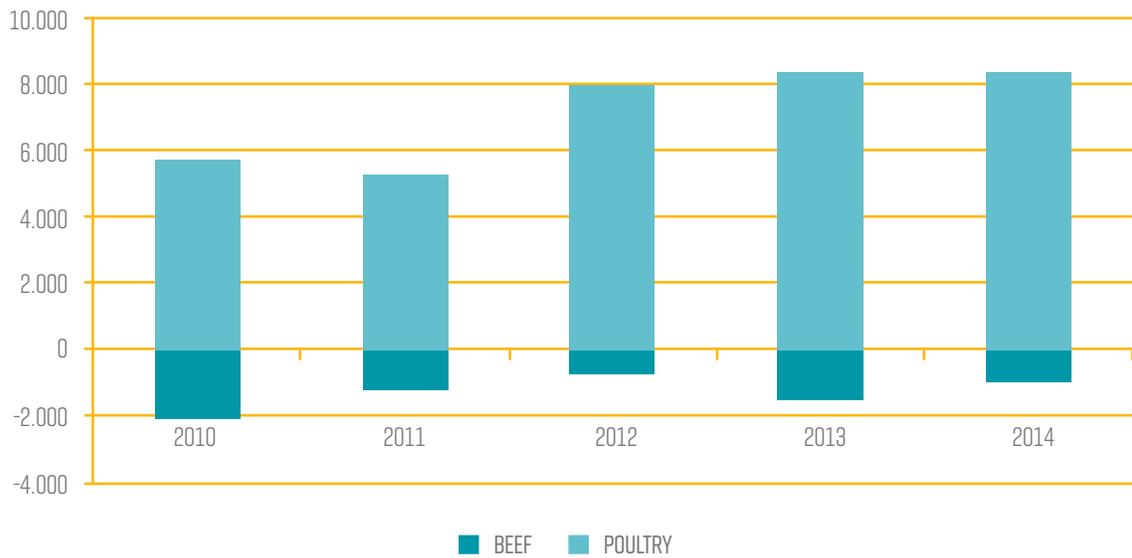
The high MPS levels for poultry are directly related to support in the form of the 100% import tariff in place to protect domestic producers from cheaper poultry meat imports. The growth in poultry consumption is largely from increased domestic production, which grew from 24,988 tons in 2010 to 29,066 tons in 2014. Before 2012, there were virtually no imports, and domestic demand was met entirely by producers in Guyana. As a result of poultry meat shortages, the government granted a 50% waiver of import duties in 2012 to allow importers to supply the local market with chicken imports. Some importing has taken place since then, but it accounts for less than 8% of total demand.

For beef, MPS is negative. No explicit policy or price intervention was identified that explains this. As a result, the relatively low producer prices for beef compared to international reference prices seem to be caused primarily by underdevelopment of the value chain, which causes inefficiencies and limited transmission of international prices to the domestic market. In interviews,

SUPPORT TO THE TWO MAIN COMMODITIES OF GUYANA'S LIVESTOCK SECTOR IS MIXED. WHILE BEEF PRODUCERS HAVE NEGATIVE MPS OVERALL, SUPPORT FOR POULTRY IS STRONG IN ALL YEARS COVERED BY THE REVIEW.

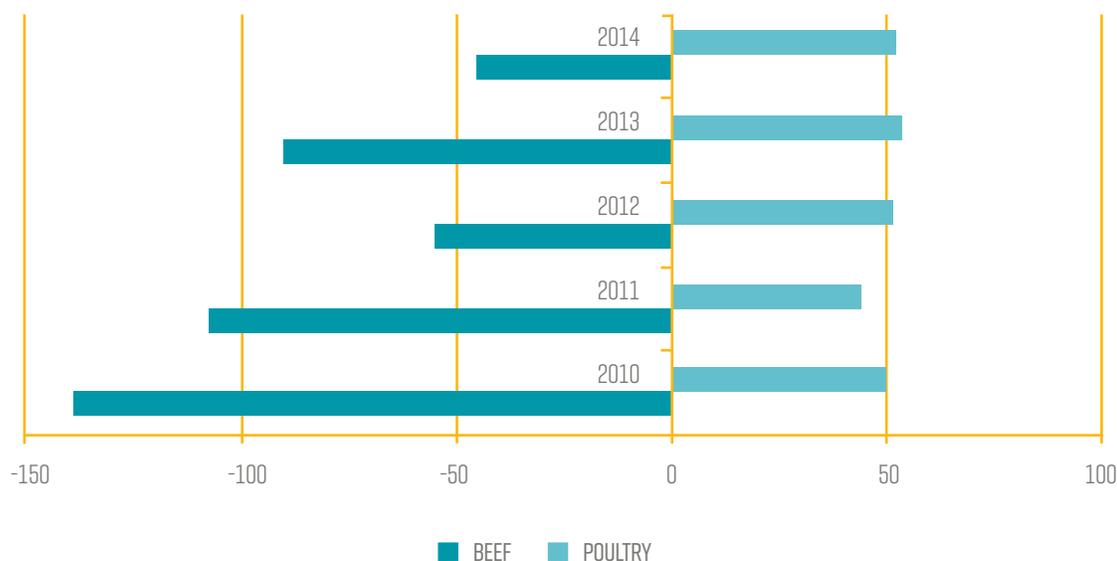
representatives of the beef sector pointed primarily at the weak infrastructure connecting rural areas with the main consumption market in Georgetown and the coastal areas, and the absence of a modern and efficient abattoir to drive up prices and limit the ability of cattle farmers to export beef to neighboring countries.¹⁵

FIGURE 28: MPS TO LIVESTOCK, IN MILLIONS OF GYD, 2010 - 2014



Source: Authors' calculations.

¹⁵ See also, <http://www.kaieteurnewsonline.com/2014/08/07/absence-of-a-modern-abattoir-hindering-beef-export/>

FIGURE 29: SINGLE COMMODITY TRANSFERS FOR LIVESTOCK, IN % OF FARM RECEIPTS, 2010 - 2014


Source: Authors' calculations.

Analysis of support to the milk sector has not been attempted due to the unavailability of farm gate prices for milk for any of the years under review.

In general, the MPS indicates the effect of policy actions on agricultural producers and consumers. However, it also captures some implicit non-policy effects, such as value chain underdevelopment and inefficiencies, especially in developing countries. Examples of these non-policy factors driving MPS could include:

- Underdevelopment of physical infrastructure: poor condition of rural roads and insufficient storage facilities, which drive up costs for producers and traders.
- Lack of soft infrastructure: insufficient or costly access to finance, instability of regulatory systems, low enforcement of contracts, and underdeveloped market information systems also indirectly affect MPS levels.
- Low production concentration: farmers receive lower prices and middlemen receive a higher share of market margins due to asymmetries in market information and power.
- Obsolete technology in the processing industry, resulting in lower outturns and limited value addition.

- Institutional barriers to trade: high export costs, monopolistic export agents, bribes or excessively long administrative procedures.
- Exchange rate instability.

These conditions can distort the connection between local farmers and the international market and create differences in prices that are sometimes referred to as the “Market Development Gap.”¹⁶ While the lack of market infrastructure is sometimes considered a non-policy effect on producers, infrastructure development is in fact the result of the public policy decisions and of the priorities set in public spending, especially in emerging economies. Public investment decisions that enhance market infrastructure development, such as building collection centers and storage facilities and supporting small businesses for on-farm processing, determine the welfare effects on market players. Not only are these measures captured directly, as budget payments to infrastructure development (GSSE), but they are also reflected in MPS levels through better price transmission. This can explain the negative support for beef producers in Guyana.

3.4.3 Effective rate of protection

The Effective Rate of Protection (ERP) provides additional information regarding the level of policy support to specific agricultural commodities by incorporating the effects of farm input support. A positive ERP means that the returns on inputs are potentially higher than if no trade policies, subsidies, or other support measures were in place. If the ERP is negative, that means the policy effects are negative, as the potential returns on input would be higher in the absence of policy. The ERP methodology is limited because it does not consider possible input substitution, but it is useful as an indication of the effect of policy on input markets and agricultural producers.

Trade policies affect the domestic prices of goods and services. Import duties raise domestic prices, while export taxes lower them. Moreover, non-tariff policies that regulate the quantities of imports or exports have an indirect effect on domestic prices. By limiting the volume of a good that can be imported, an import quota creates an artificial scarcity in the local market and therefore raises its domestic price. The effect of trade policies can be expressed by the ERP which examines the effect on domestic producers, as explained below.

THE EFFECTIVE RATE OF PROTECTION (ERP) PROVIDES ADDITIONAL INFORMATION REGARDING THE LEVEL OF POLICY SUPPORT TO SPECIFIC AGRICULTURAL COMMODITIES BY INCORPORATING THE EFFECTS OF FARM INPUT SUPPORT.

¹⁶ Barreiro-Hurlé and Witwer (2013).

For Guyana, the ERP has been estimated for the commodities for which detailed value chain studies were conducted: rice, sugar, and poultry. The set of inputs included in the analysis was determined by the available information on the farm gate cost structure. The following purchased inputs were included in the analysis:

- For rice: urea and NPK fertilizers, fungicide, insecticide, and herbicide.
- For sugar: fertilizers and pesticides.
- For poultry: corn for chicken feed and concentrate as feed ingredient.

According to the duty system of Guyana, all products imported from CARICOM are at a zero percent import tax.

Key assumptions. The following key assumptions underpin the ERP calculations and interpretations in Guyana:

- The FOB price per commodity is assumed to be equal to the world price and is calculated by dividing the total export value by the export volume.
- The world price is assumed equal to the price in the absence of trade policies.
- The trade data from the Guyana Ministry of Foreign Affairs is used for import and export value and volumes.
- Preferential tariffs are applied to imports from other CARICOM countries and other of Guyana's trading partners with which CARICOM has a free trade arrangement.
- The Most Favored Nation (MFN) average tariffs¹⁷ are used for the analysis, assuming Guyana is importing from non-CARICOM or trading partners.
- The VAT is applied equally to domestically-produced goods and services and imports, at a general rate of 16% and therefore not included in the analysis.
- NRP and ERP are estimated for the commodities analyzed in the value chain section.
- Data is based on secondary sources and field interviews for the years 2012, 2013, and 2014.
- For poultry, CIF Brazil is used as world reference price.
- Where applicable, the historic, GYD- USD exchange rate is applied.

¹⁷ Source: WTO Guyana Trade Policy Review 2015.

Preferential tariffs are applied to imports from other CARICOM countries and Guyana’s trading partners with whom the CARICOM has a free trade arrangement. This includes Brazil as well as Colombia, Costa Rica, Cuba, and the Dominican Republic. Imports from these countries are duty free across the tariff schedule. However, as agricultural inputs are assumed to be imported from non-CARICOM countries, the MFN rates are applied.

For rice, inputs are estimated at 20% of the total cost based on the detailed information provided by the Guyana Rice Producer’s Association (GRPA). For sugar, the use of fertilizers and pesticides is estimated at 7% of the production cost based on GuySuCo’s cost calculation. However, GuySuCo is exempt from duties on imports. For chicken, feed represents over 70% of the cost of producing chicken meat. In Guyana, 40% of the feed mix consists of imported corn.

The remaining ERP estimates for rice, sugar, and poultry are provided below.

FIGURE 30: ERP FOR SELECTED COMMODITIES IN GUYANA, 2012 - 2014



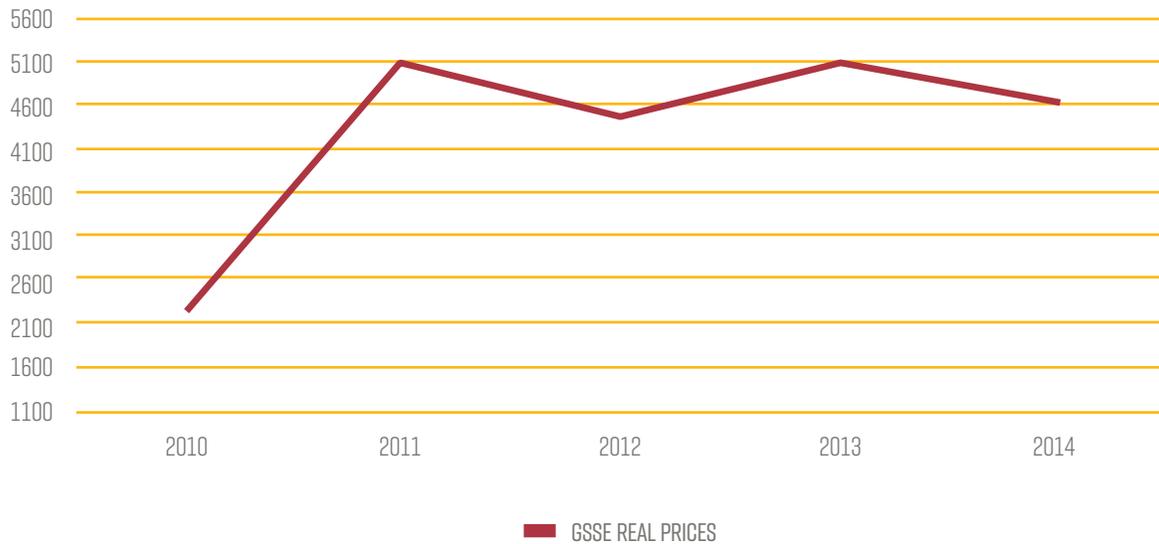
Source: Authors’ calculations.

The ERP is positive only for poultry. This is consistent with the high tariff that protects poultry producers from imports, and as a result, increases their farm gate price. However, trade policy negatively affects the cost of their inputs, which constitutes 70% of the total production cost. When these effects are both considered, the net effect is still a protected environment for poultry farmers. For rice, the net effect is slightly negative. However, value addition by rice farmers is only slightly lower as a result of trade policy than it would be in a free trade environment. The ERP varies between 1% and 2%. For sugar, GuySuCo is the only producer and it has been exempted from paying import duties on its imports. As a result, the sugar ERP in Guyana is zero.

3.5 Budget Support Evaluation

As shown above, budgetary transfers to producers were relatively limited in 2010 and 2011 but grew significantly since 2012 because of the payments of the Government of Guyana to cover GuySuCo's operational losses. Besides the payments to producers, most budget support to the agricultural sector is provided in the form of general services support.

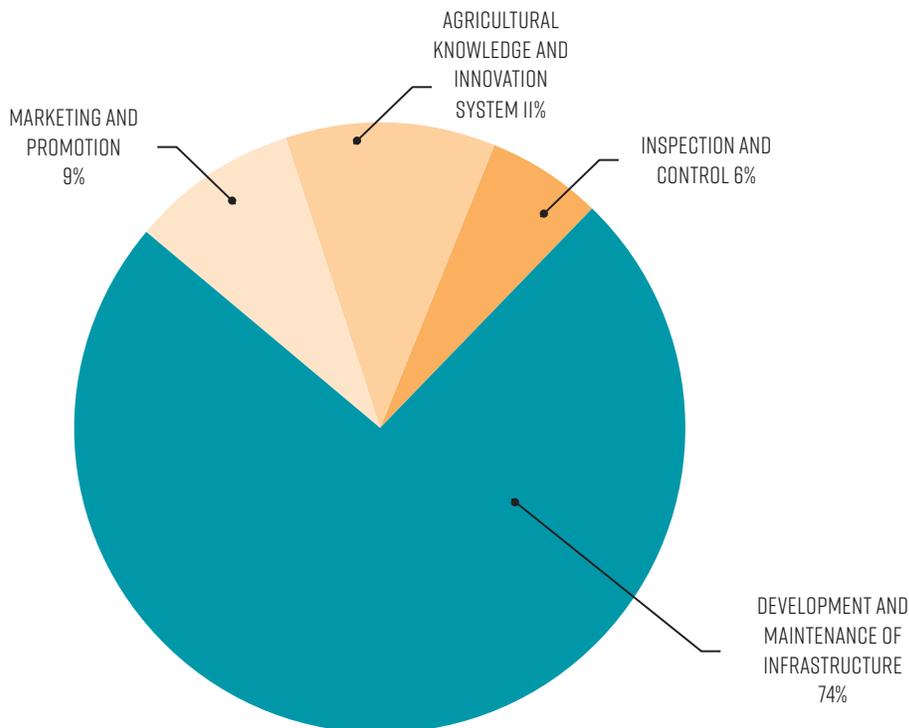
The general services support estimate (GSSE) records transfers from the government budget to services that benefit the agricultural sector collectively. Figure 32 shows the level of GSSE in real prices. As can be seen from the graph, budgetary transfers to the sector as a whole increased between 2010 and 2011 and hovered between GYD 4.5 billion and GYD 5 billion on an annual basis.

FIGURE 31: TOTAL GSSE IN GUYANA, 2010 - 2014, IN MILLION GYD (REAL PRICES)


Source: Authors' calculations.

The composition of this support to general services is shown in Figure 32 below. As can be seen, 74% of GSSE consists of support for the development and maintenance of irrigation and drainage infrastructure. Given that Guyana's most important agricultural lands are located in low-lying coastal plains just at or below sea level, irrigation and drainage infrastructure investments are essential to maintain agricultural productivity under changing climate conditions. Approximately 11% of GSSE is dedicated to the agricultural knowledge and information system, primarily to agricultural research.

However, the National Budget Estimates as provided by the Ministry of Finance do not report expenditures in detail but only at the program level. Consequently, the authors have not been able to assess the extent to which certain expenditures are focused on benefiting the agricultural sector or society at large. This is particularly true for expenditures related to irrigation and drainage infrastructure maintenance and rehabilitation financed by the Ministry of Public Infrastructure, as it is difficult to assess which drainage and irrigation expenditures specifically benefit the agriculture sector.

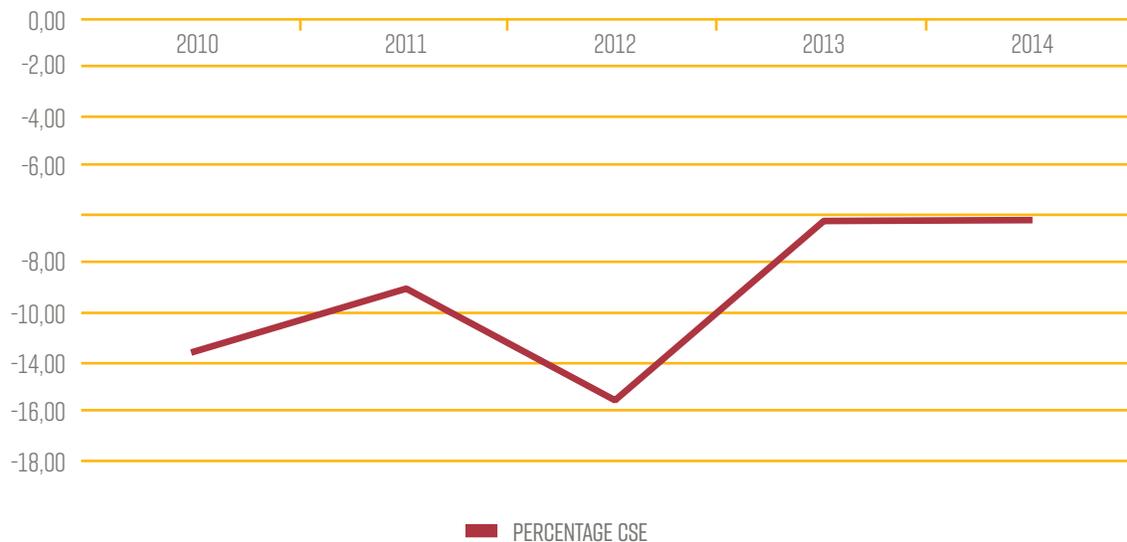
FIGURE 32: COMPOSITION OF GENERAL SERVICES SUPPORT IN GUYANA, 2010 - 2014

Source: Authors' estimates.

3.5.1 Consumer support

The CSE is the support indicator that shows how the agricultural support policy affects consumers of agricultural commodities. Negative national CSE indicate transfers from consumers to producers of agricultural commodities.

In Guyana, CSEs as a percentage of domestic consumption expenditure are negative throughout the entire period under review. As shown in Figure 33, the CSE% varied between -8% and -16% of consumption expenditure. This means that consumers in Guyana paid significantly higher prices for their food than in the absence of government policy. The main driver of this negative consumer support is the protection provided to poultry farmers. Though farmers benefit from the tariff that shields them from cheap imports, consumers are penalized as they pay significantly higher prices than they would in a tariff-free environment, negatively affecting food security.

FIGURE 33: CSE IN GUYANA AS A % OF TOTAL DOMESTICALLY PRODUCED CONSUMPTION, 2010-2014


Source: Authors' calculations.

The negative consumer support is consistent with trends observed in lower middle-income countries. In low-income countries, governments often tax their agricultural sectors by suppressing food prices, as concerns for the welfare and food security of (urban) consumers is considered more important than farm incomes. When incomes grow, however, middle-income countries tend to provide more support to agricultural producers at the expense of consumers. In addition, middle-income countries have more financial resources to support their agricultural sector. All emerging economies monitored by the OECD provide positive support to farmers.¹⁸

In most OECD countries, the consumers are taxed as well, but budget transfers through food assistance programs usually partially compensate for this. In the United States, for example, food assistance programs outweigh the transfers from consumers to producers and the consumer support becomes positive. In Guyana, the government's national school meals program creates transfers to consumers from taxpayers. However, these expenditures do not outweigh negative transfers from consumers to producers due to the higher domestic prices, mainly for poultry.

¹⁸ OECD (2012b).

FIGURE 34: CSE IN GUYANA AND SELECTED COUNTRIES, 2012 - 2014, %



* Argentina, Costa Rica, Ecuador, El Salvador, Honduras, Paraguay 2010-2012, Nicaragua 2008-2010, Guatemala 2009-2011, Peru, Uruguay 2011-2013
 Source: Consultant's estimates, IDB database, OECD PSE database.

As can be seen from Figure 34, consumer support in Guyana is average for the region. It is less negative than the levels observed in Jamaica or Central American countries, which have policy frameworks that provide stronger support for farmers at the expense of consumers. The CSE% of -10.7% is close to the levels of the Dominican Republic, but lower than levels in Bolivia and Peru.

3.6 Total support estimate

PSE, GSSE and transfers to consumers from taxpayers are jointly called the total support estimate (TSE), which indicates the aggregate of transfers in the economy as a result of agricultural policy. The TSE is commonly expressed as a share of national GDP.

As shown in Figure 35, between 2010 and 2014, total support to the agricultural sector was the equivalent of between 3 and 4.5% of GDP. In absolute terms, the total support to the sector in Guyana decreased slightly from GYD 8.8 billion in 2010 to GYD 8.5 billion in 2014.

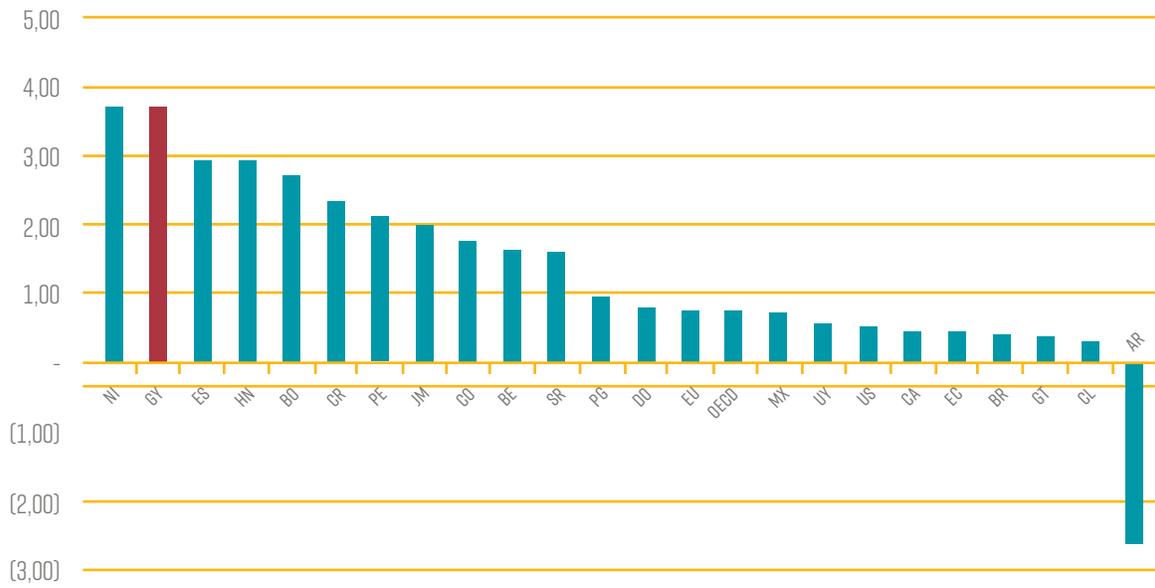
FIGURE 35: TSE% AND BREAKDOWN OF TOTAL SUPPORT ESTIMATE IN GUYANA



Source: Authors' estimates.

Between 2012 and 2014, average support as a share of total GDP was 3.68%. From an international perspective (see Figure 36), this results is the second highest level of sector support in the region, just below the support level of Nicaragua (3.69%) but above the levels observed in El Salvador (2.92%) and Honduras (2.90%).

FIGURE 36: TOTAL SUPPORT ESTIMATES IN SELECTED COUNTRIES AND REGIONS, IN PERCENTAGE OF GDP, 2012 - 2014



Source: consultant's calculations, IDB database, OECD PSE database.

4. CONCLUSIONS



Overall, the Government of Guyana employs a variety of policy instruments in support of the agricultural sector. These measures include trade policies and fiscal measures, as well as public investment in infrastructure, research, extension services and marketing. These policies result in a framework that generates overall positive transfers to the agricultural sector and increases farmers' gross receipts.

Most of the support comes in the form of Market Price Support. Though producers are supported overall, the PSE indicators confirm that the agricultural sector in Guyana remains sharply divided between the traditional and non-traditional sub-sectors.

Overall, the poultry sector received the most price support due to a high import tariff that protects domestic farmers, while the sugar sub-sector was the major recipient of budget transfers to individual commodities.

OVERALL, THE POULTRY SECTOR RECEIVED THE MOST PRICE SUPPORT DUE TO A HIGH IMPORT TARIFF THAT PROTECTS DOMESTIC FARMERS, WHILE THE SUGAR SUB-SECTOR WAS THE MAJOR RECIPIENT OF BUDGET TRANSFERS TO INDIVIDUAL COMMODITIES.

The rice market is relatively undistorted. In 2014, producer prices converged almost completely with the international reference price and MPS approached zero. The rice sector benefits from strong support in the areas of marketing, extension, and research (including through the development of seed varieties), but these activities are primarily funded by the sector itself through a levy of US\$8 per ton of rice that funds the executive agency in charge of rice development, the GRDB. However, this study may underestimate total support for the rice sector. Drainage and irrigation infrastructure are the main component of budget support to the agricultural sector as a whole (GSSE). Given that it could not be established to what extent these expenditures benefit specific commodities, they were not labelled as commodity-specific support. Nonetheless, it may be assumed that the rice and sugar sector are among the main beneficiaries of irrigation and drainage expenditures. When this is taken into account, support to these commodities could turn out to be higher.

The support to producers comes at a price. The Consumer Support Estimate is negative, meaning that consumers pay higher prices for their food as a result of government policy. The main driver of this is the significant protection afforded to poultry, the population's main source of animal protein. This is particularly sensitive in a country where 11% of the population suffers from chronic undernourishment.

The TSE, or overall agricultural policy transfers, averaged 3.68% of GDP over the last three years analyzed. This makes the Guyanese agricultural sector the second most supported agricultural sector in Latin America and the Caribbean. An average of GYD 20.1 billion of total support is provided by consumers and taxpayers to the sector every year. Given that the sugar sector continues to struggle and that GuySuCo is still incurring significant losses that will be covered from the public budget, the level of support will remain high in the short term and may even increase further.

THE SUPPORT TO PRODUCERS COMES AT A PRICE. THE CONSUMER SUPPORT ESTIMATE IS NEGATIVE, MEANING THAT CONSUMERS PAY HIGHER PRICES FOR THEIR FOOD AS A RESULT OF GOVERNMENT POLICY.

5. RECOMMENDATIONS



Guyana's agricultural policy is characterized by two different worlds: on the one hand, the country wishes to pursue an ambitious diversification strategy that reduces its dependence on traditional exports, creates more added value, and reduces the sector's vulnerability to price or climate shocks. It seeks to promote agro-processing and boost the livestock sector through investments in beef and dairy value chains. On the other hand, the government has chosen to spend most of its agricultural budget on the sugar sector to prevent the collapse of GuySuCo.

As other reports have indicated, this situation is unsustainable. Draining the agricultural budget to support the sugar sector is jeopardizing the goal of a more diversified agricultural sector. It also increases the Government of Guyana's dependence on funding from international donors to finance capital investments in agriculture because its agricultural budget is primarily used to cover recurrent costs and sugar sector contributions.

Therefore, this report joins other voices in urging the government to accelerate the development of a robust transition plan for the sugar sector. Reduced support for the sugar sector would enable the government to invest in diversifying agricultural exports, adding value, and expanding general services. This should also result in new employment opportunities for sugar workers in new agricultural sub-sectors, primarily in fruits and vegetables, with higher productivity.

Furthermore, this report makes the following recommendations to enhance Guyana's agricultural policy framework:

- The Government should aim to reduce policy measures that generate market price support—such as trade policy measures—to allow farmers to better respond to price signals in the international market and sell more of the product at the international market price.
- Although poultry farmers are strongly protected through trade policy, these measures increase the price of chicken meat—the primary source of animal protein for the Guyanese population—for consumers. Therefore, we recommend the government develop a strategy to increase the efficiency of the poultry sector and reduce the import tariff. This will enable Guyanese poultry producers to compete with imports while lowering prices for consumers.
- Reductions in MPS levels may also be achieved through public investment that could reduce market development and value chain inefficiencies, such as investments in physical and soft infrastructure, including access to credit or better processing facilities to reduce post-harvest losses.
- Further investments in general services such as research and infrastructure can bring down the overall cost of production and have long-term impacts on competitiveness.
- At the institutional level, we recommend the government invest in better collection and processing of agricultural statistics. The decentralized structure of the Ministry of Agriculture has resulted in limited, inconsistent, and highly dispersed production, price, and cost data. Specifically, the Ministry of Agriculture should once again take up the role of coordinating the consolidation of agricultural statistics from the semi-autonomous agencies and increase their online availability.

GUYANA'S AGRICULTURAL POLICY IS CHARACTERIZED BY TWO DIFFERENT WORLDS: ON THE ONE HAND, THE COUNTRY WISHES TO PURSUE AN AMBITIOUS DIVERSIFICATION STRATEGY THAT REDUCES ITS DEPENDENCE ON TRADITIONAL EXPORTS, CREATES MORE ADDED VALUE, AND REDUCES THE SECTOR'S VULNERABILITY TO PRICE OR CLIMATE SHOCKS.

Finally, policy monitoring and analysis are important instruments for assess the impact of policy on the agricultural sector and tracking the effects of policy change. The regular updating and analysis of the PSE indicators could help assess whether policy reforms and public investments are creating a more enabling policy environment for agricultural trade and investment. As a result, such monitoring could provide important input for more evidence-based policymaking that would contribute to a diversified and competitive agricultural sector in Guyana.

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ANNEX I: OVERVIEW OF PSE DEFINITIONS AND METHODOLOGY

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 impact 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, and infrastructure, regardless of their objectives and impact on farm production and income, or consumption of farm products. The GSSE does not include 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 impact 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 impact 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, 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.¹⁹

Nominal Rate of Protection – NRP: the ratio of domestic prices to reference prices, expressed as a percentage.

Effective Rate of Protection – ERP: the ratio of value-added in domestic prices to value-added in reference prices, expressed as a percentage.²⁰

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

Reference prices and producer prices for MPS calculations must be measured at the same processing point and the same market conditions. 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 costs of processing, handling, and transportation to the market where domestically produced commodities meet the commodities arriving from foreign markets.

¹⁹ OECD, 2010, OECD, 2015.

²⁰ The methodology was described in Josling & Valdes, 2004; Valdes, Schaeffer, Roldos, & Chiara, 1995; Valdes, 2013.

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) - cost 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 of farm product into exported product (S) = price of exports adjusted to the farm gate level.

The Nominal Protection Rate is the simplest indicator of support. It was not among the outputs of this report, but was calculated as an intermediate step for estimating ERP 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 a non-policy situation. Only if VA_r is positive will negative ERP indicate 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.

Budget transfers for calculating coefficients of support estimation 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 11).

TABLE 14: 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 |

Budget transfers for financing general services have been separated from PSE and have instead been calculated as a separate indicator—the General Services Support Estimate (GSSE)—since 1998 (Table 12). In 2014, the OECD changed its methodology for GSSE estimation.

TABLE 15: CLASSIFICATION OF BUDGET TRANSFERS IN GSSE ACCORDING TO OECD METHODOLOGY

| GENERAL SERVICES SUPPORT ESTIMATE (GSSE) |
|----------------------------------------------------------|
| H. AGRICULTURAL KNOWLEDGE AND INNOVATION SYSTEM |
| H1. 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.

ANNEX II: OVERVIEW OF THE RICE VALUE CHAIN IN GUYANA

Background. Rice was first introduced into Guyana around 1750, brought from South Carolina during the Dutch occupation. Today, rice production is at all-time highs, with an annual cultivation of over 350,000 acres. Paddy production amounts to over 10 million bags per year at an average yield of 26 bags per acre. Paddy rice is the most important agricultural crop in Guyana and is responsible for approximately 4.6% of Guyana's Gross Domestic Product (GDP).²¹

Paddy production takes place along the coastal plains in Guyana. This is a fertile, flat strip of land 5 to 7 km wide that runs along the sea shore. The coastal plain lies about 1.4 m below sea level at high tide. In order to avoid flooding from sea waters, it is protected by a sea wall.

Paddy farmers. Over the years, rice farming has seen a decline in the number of farmers but an increase in the average farm size. Currently, 40% of the farmers cultivate over 10 acres each and account for 86% of the total paddy acreage, while the other 60% of farmers cultivate under 10 acres each and account for 14% of total paddy acreage.²²

Paddy is cultivated in Guyana during two crop seasons, namely spring and autumn. The spring crop is generally planted during November and December and harvested from March to April. The autumn crop is usually planted during June and July and harvested during September and October. Rice cultivation in Guyana is largely mechanized, and large-wheeled tractors are used for land preparation, which includes plowing, harrowing, and puddling. The crop is directly seeded using pre-germinated seeds sown into flooded fields. The seeds, however, are usually sown manually. Harvesting is done by combine-harvesters and the paddy is transported to the mills in bags or in bulk.

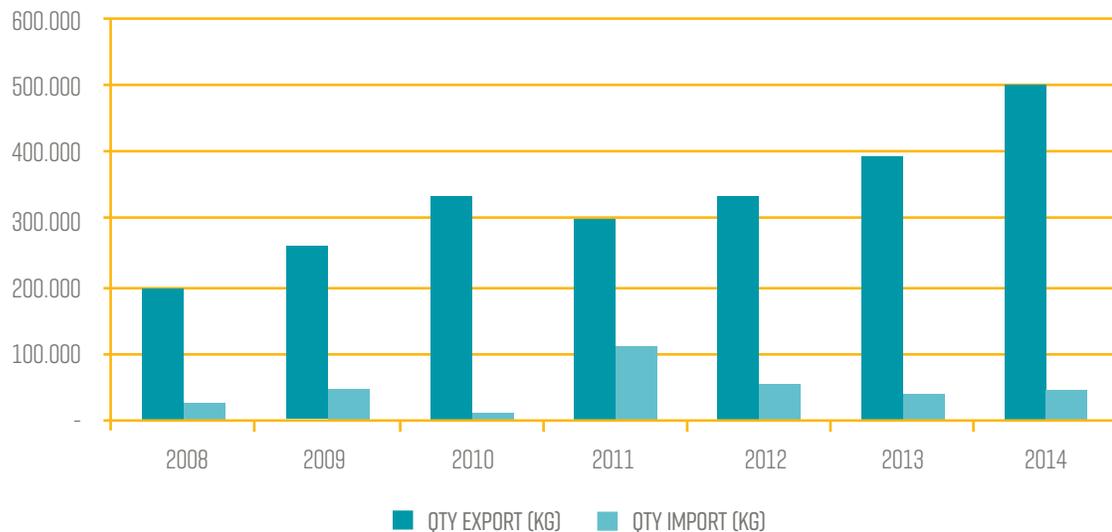
²¹ Source: National Accounts Department.

²² Source: Guyana Rice Development Board.

Sector support services. The Guyana Rice Development Board (GRDB) was established in 1995, pursuant to the Guyana Rice Development Board Act No. 15 of 1994. The three entities (the Guyana Rice Export Board (GREB), Guyana Rice Milling & Marketing Authority (GRMMA) and the National Padi & Rice Grading Centre (NPRGC)) that were controlling the state's interests in the industry prior to the formation of GRDB were dissolved. The GRDB provides a series of services to farmers, services such as farm extension, capacity building, hybrid seed development etc. It closely monitors rice quality throughout the supply chain. It has agents at each buying station to ensure that quality requirements are maintained, and it operates its own rice lab for monitoring the quality of all export orders. It also provides a mandatory fumigation service for all exported rice. GRDB appears to have been successful at ensuring that Guyanese rice maintains its strong reputation for quality with international buyers, with almost no occurrences of rejected orders based on quality issues.

Export. Rice exports have grown steadily to 500,000 kgs in 2014 (see Table 1). All Guyanese rice is exported via the port of Georgetown, which is a relatively shallow port that limits boat sizes to 6,000 tons. There are three main shipping companies in Guyana, one of which is owned by a large rice exporter. Fertilizers are imported into Guyana primarily from Trinidad but also from Eastern Europe. Fertilizers are imported by two commercial enterprises and sold to stores and outlets that subsequently retail them to farmers. Fertilizer is also distributed via millers (on credit) and via the Rice Producer Association (for cash). Chemicals for pest and disease control are readily available, and two companies compete to supply those chemicals to the rice sector.

TABLE 1: RICE EXPORT - IMPORT



Source: Bureau of Statistics, Trade Statistics System.

The rice value chain (figure 2) is marked by direct interaction between farmers, millers, and exporters. The supply is primarily geared towards export markets, and approximately 70% of total rice production is exported. The primary industry participants are farmers, millers (processors), and exporters, with support services provided by banks, microfinance institutions, input suppliers (seeds, fertilizers, and chemicals), and shipping companies. In addition, GRDB provides a series of critical services to the industry, including seed production and distribution, quality assurance, monitoring and auditing, extension services, and fumigation of exports. The Rice Producers Association (RPA) also plays a role in providing extension services to farmers.

Vertical integration is common in the Guyana rice supply chain, with the larger millers now beginning to export directly and the exporters entering the milling business. The last remaining rice exporter that deals exclusively in rice is Sea Rice (earlier known as Nidera), which now also owns part of a Guyanese rice mill and has long-term relationships with existing third-party mills. In 2006, the rice export sector was very concentrated, with just two exporters (Mahaicony and Sea Rice) accounting for more than 70% of the total export market share (table 2). Today, rice exports are less concentrated than in 2006, with eight active exporters handling 90% of rice exports from Guyana.

The change in export market share concentration reflects new dynamism in the industry and is partially attributable to the younger generation taking over the operations of many mills. Some millers have also begun to package their rice in branded retail-sized packages, which they are exporting to Caribbean markets through recently established distribution channels. Their aim has been to add more value and better compete with other rice-producing countries. Apart from the 17-19 large- and medium-sized millers that cater to the export market and sell milled rice domestically, there are 50–55 smaller mills that procure a sizeable amount of rice from the farmers. The bulk of the production of medium - and small-sized millers is exported by Sea Rice.

These smaller millers also sell in the domestic market and some of them provide a fee-based service to farmers for processing their rice.

FIGURE 2: GUYANA RICE VALUE CHAIN



Source: World Bank report: Guyana rice supply chain, risk assessment, 2011.

Key value chain challenges

Infrastructure. The fact that the vast majority of agricultural activities takes place in the coastal plain that lies below sea level means that, at high tide, agricultural production has to rely heavily on drainage systems. A comprehensive drainage and irrigation system, currently managed by the National Drainage and Irrigation Authority (NDIA), was constructed more than 150 years ago. Currently, drainage throughout most of Guyana is poor and river flow sluggish because the average gradient of the main rivers is only 1 m in every 5 km. Due to persistent flood problems, many of the rice farmers are unable to sow paddy, and significant acreage is rendered unfit for paddy cultivation. Furthermore, vast acreage of standing crops is frequently lost and farmers also regularly suffer yield losses. Flood risk emanates from three different sources: (i) Excessive rainfall, (ii) Inadequate drainage infrastructure, and (iii) water management.

Financing and credit. Delayed payment and, in many cases, non-payment to the farmers by the millers are critical issues in Guyana's rice value chain. Cash payment on delivery are limited, and payment terms of three to eight weeks after delivery are the norm in the industry. The situation has worsened in recent years, creating significant cash-flow problems for the farmers. According to GRDB, millers owe rice farmers a total of GYD 600 million for the last (2015) crop and GYD 140 million for the 2014 crop.

ANNEX III: OVERVIEW OF THE SUGAR VALUE CHAIN IN GUYANA

Background. After rice, sugar is the second most important agricultural crop. The sector is 100% dominated by government-owned Guyana Sugar Corporation, best known by its acronym GuySuCo. It is the country's largest cultivator and producer of sugar, a commodity responsible for approximately 3.4% of Guyana's GDP.²³ GuySuCo was formed in 1976 when the government of Guyana nationalized and merged the sugar estates operated by Booker Sugar Estates Limited and Tate and Lyle and Jessels Holdings to form the Guyana Sugar Corporation. One of its products is brown sugar produced in the Demerara River basin, which is exported internationally to the European Union, the United States of America, and the Caribbean Community (CARICOM).

GuySuCo as a company is in poor condition. Particularly over the past five years, it has experienced great financial turmoil. GuySuCo's debts amounted to approximately GYD 80 billion in 2015, but the company has nevertheless been receiving billions in bailouts from the government. The GuySuCo Skeldon sugar processing factory, commissioned in 2009, accounts for much of that debt. The main creditors are the Guyana Revenue Authority (GRA), the National Insurance Scheme (NIS), regional and international banks, and funding agencies.

The future of the GuySuCo. To analyze and formulate recommendations on the situation and future prospects of the Guyana sugar industry and GuySuCo, a Commission of Inquiry (COI) was established in 2015 and the report was presented to Parliament in early 2016. The COI²⁴ tried to answer the following key questions: (i) whether Guyana can become competitive in sugar; (ii) whether, how much, and for how long taxpayers should be asked to sustain GuySuCo subsidies; (iii) whether, and to what extent, GuySuCo and Guyana should remain in the sugar sector; and (iv) if so, whether GuySuCo

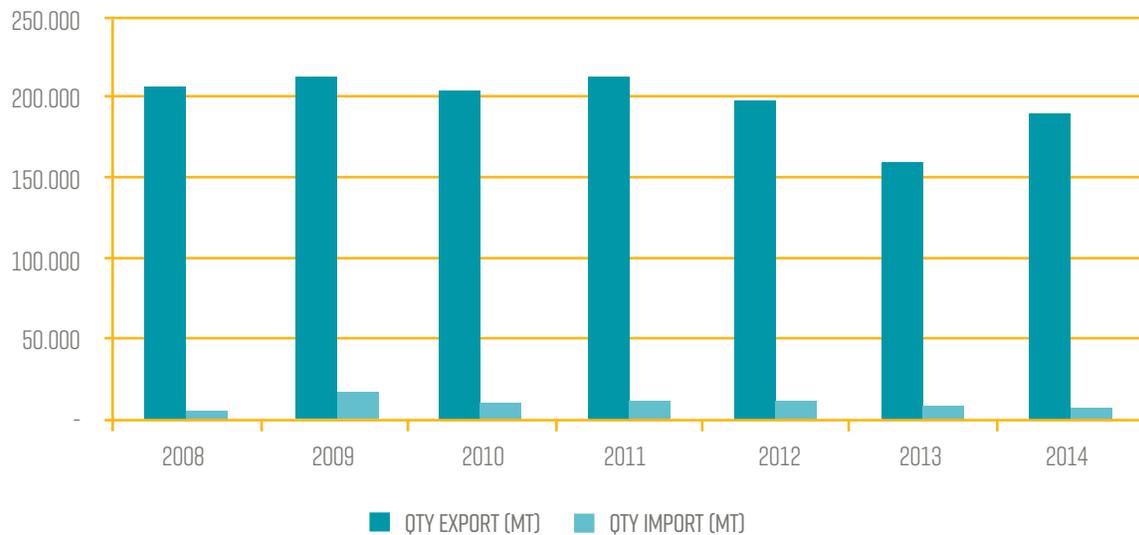
²³ Bureau of Statistics online information at: <http://www.statisticsguyana.gov.gy>

²⁴ See more at: <http://www.chrisram.net/?tag=guyana-sugar-corporation>.

should remain state owned, or be open to private investors. The COI recommended that GuySuCo be privatized and that this process start as soon as possible and be completed within a three-year period. It also recommended that the State of Guyana divest itself of all assets, activities and operations currently associated with GuySuCo.

Sugar export-import. Sugar export is under enormous pressure, with stiff competition and volatile prices. The Guyana sugar exports have been declining since 2011, as shown in Table 1. GuySuCo has also been unsuccessful in generating higher profit margins by selling retail-sized sugar bags directly to wholesalers and/or supermarkets in target markets. The company still exports nearly all its sugar in bulk. With preferential sugar exports to the European Union ending in 2017, various reports indicate that the company should focus more on the production of brown sugar for the Caribbean market.²⁵

TABLE 1: SUGAR IMPORT AND EXPORT, 2008 - 2014



Source: Bureau of Statistics, Trade Statistics System.

²⁵ For example, see <http://demerarawaves.com/2015/12/31/break-up-of-guysuco-proposed/>

The sugar value chain (figure 1). For the description of the sugar value chain, the biggest sugar producer and processor—GuySuCo—was consulted during the field visit and is considered to be representative of the Guyana sugar value chain. The production is geared primarily toward export markets, and approximately 80% of total sugar production is exported. Vertical integration is common in Guyana’s sugar supply chain, as GuySuCo cultivates, produces, processes, and markets both sugar cane produced at its own estates and cane that is procured from outgrowers who sell their cane to GuySuCo for further processing.

FIGURE 1: OVERVIEW OF THE SUGAR VALUE CHAIN



Source: Author.

Key challenges

Export markets. Under the EU sugar regime for the last 30 years, cane producers from the African, Caribbean and Pacific group of states (ACP) and from the Least Developed Countries (LDCs) were able to sell cane to the EU market via quotas with guaranteed high payments, equal to those paid to EU beet producers. However, this is all set to change in 2017, when changes to the EU Common Agricultural Policy²⁶ will mean the end of this preferential treatment, potentially closing the EU cane sugar market to ACP countries. In the light of these policy changes and the likelihood that cheaper beet sugar from European sugar beet producers in Germany, France, Poland, and the United Kingdom will flood the European market, cane farmers from ACP countries face an uncertain future. Guyana, with GuySuCo, is therefore trying to diversify its export markets by penetrating the North America markets with the aforementioned value added sugars.

Competitive position. GuySuCo's sugar and sugar products have high production costs. The current cost of production is estimated at approximately US\$0.40 per pound, while the average for the rest of the world is approximately \$0.14 per pound. A large cost gap would have to be closed to make Guyanese sugar competitive.

²⁶ EU Common Agricultural Policy 2015.

ANNEX IV: OVERVIEW OF THE POULTRY VALUE CHAIN IN GUYANA

Background. Poultry is the only livestock sector for which domestic demand exceeds production. In 2011, there was a shortfall in local production due to delays in imports of hatching eggs. To stabilize consumer prices of chicken meat, the Ministry of Commerce has waived the import duty on chicken meat for a number of traders for a limited period of time.

TABLE 1. POULTRY PRODUCTION

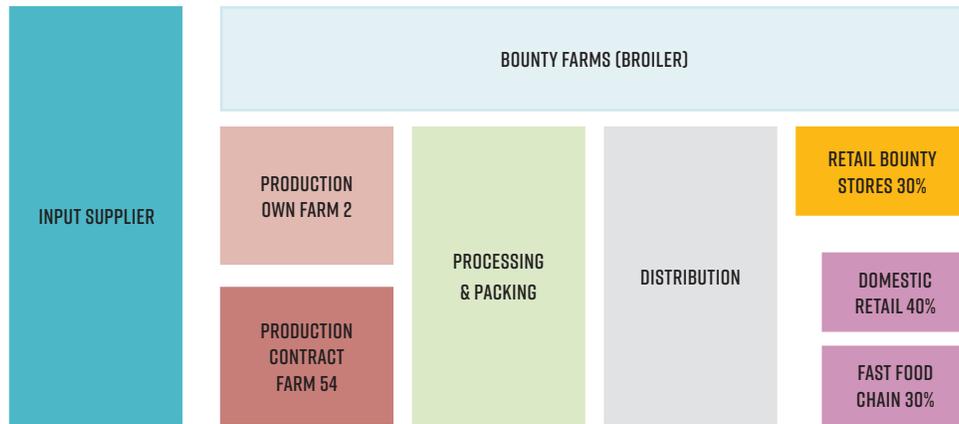
| ITEM | UNIT | 2010 | 2011 | 2012 | 2013 |
|---------|--------|------------|------------|------------|------------|
| POULTRY | KG | 24,969,212 | 25,573,466 | 30,412,761 | 29,280,260 |
| EGGS | NUMBER | 14,169,197 | 23,508,323 | 21,234,317 | 17,964,574 |

Source: Ministry of Agriculture.

Export. The poultry market in the 15 member countries of the Caribbean Community (CARICOM) is valued at an estimated \$350 million. The size of this market signals prospects for the growth of Guyana's poultry sector. At the same time, Guyana's poultry farmers cannot begin exporting poultry until they meet strict sanitary and health standards and regulations imposed by other member states.

The poultry value chain and its key challenges. In describing the poultry value chain (figure 3), the field visit information from Bounty Farms (broiler production) is used as a primary source. The poultry (broiler) value chain in Guyana is almost fully vertically integrated. Bounty Farms' activities include: egg hatching, broiler production, processing, transportation and distribution to their own Bounty stores and to other retail facilities. Bounty Farms does not produce eggs, an activity that is therefore not included in the poultry value chain.

FIGURE 3: POULTRY VALUE CHAIN OF THE BOUNTY FARMS POULTRY COMPANY



Source: own elaboration.

Key challenges

The sector is heavily dependent on the import of inputs. Any delay in key inputs like hatching eggs will result in an immediate fall in production. To cushion the impact of these shortfalls on consumer prices, the Ministry of Commerce has waived the import duty on chicken meat to six poultry traders and producers for a limited period. Fewer import restrictions will help the sector become more efficient and competitive in the region.

Disease control. Better disease control should lead to higher production and a lower production costs. These are the first steps the sector must take should it wish to develop an export market.

