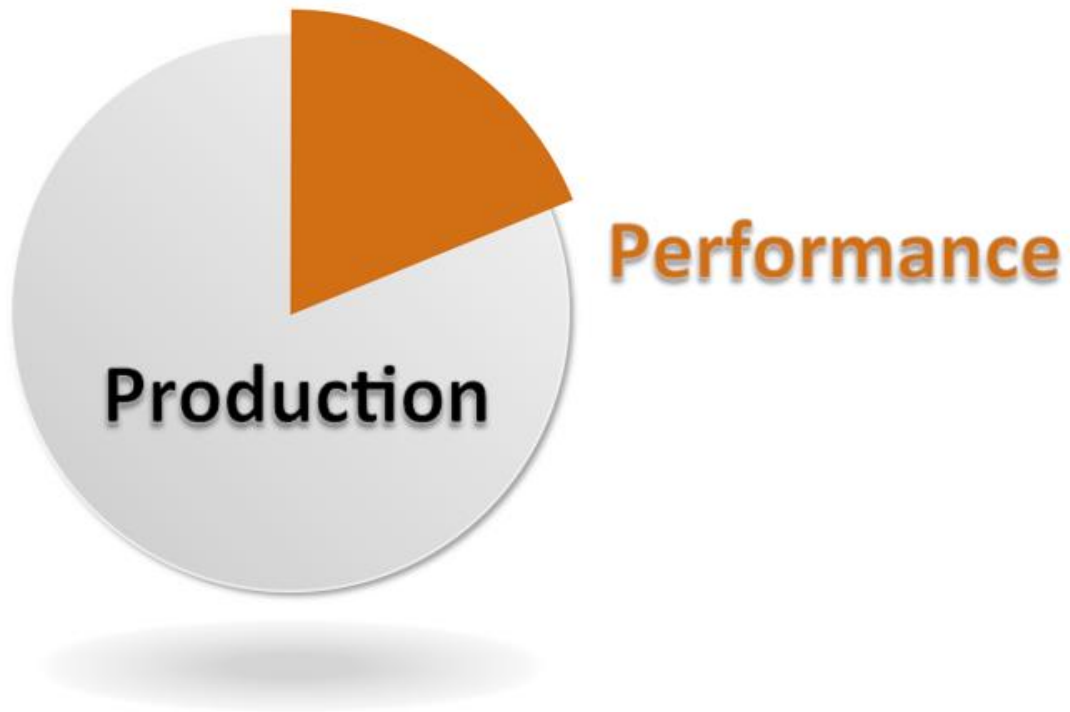


Agriculture Sector Report

2017



Policy and Public Private Sector Interface

Ministry of Agriculture

18 April 2018

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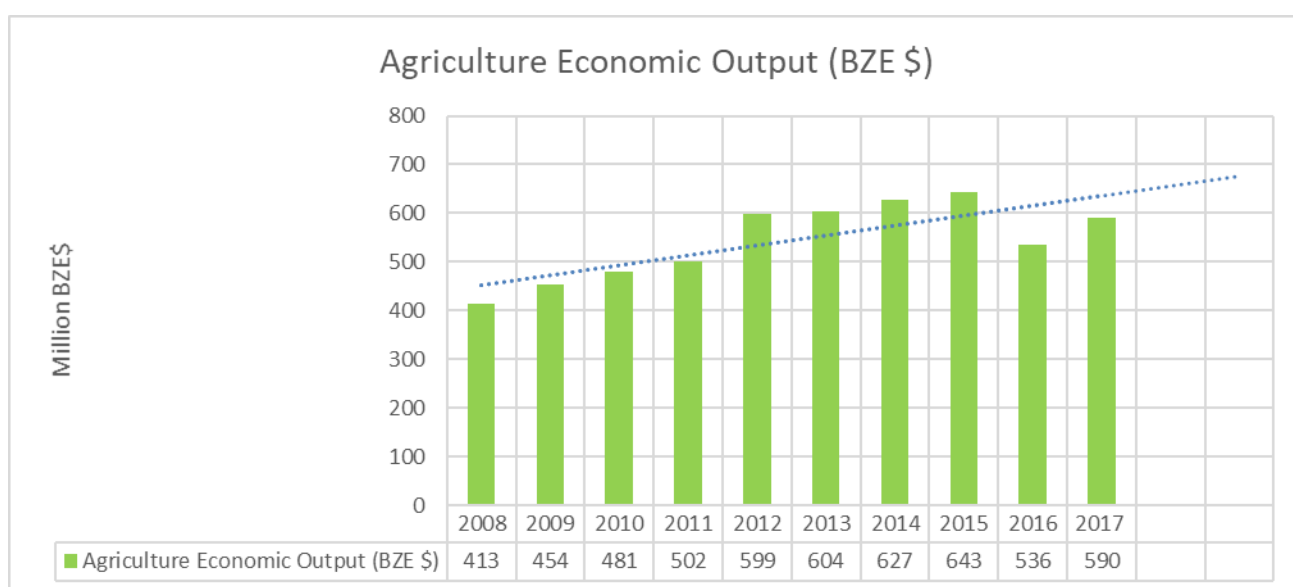
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ABSTRACT

Agriculture Sector Report is composed of data that has been gathered by the Policy Public Private Sector Interface Unit (PPPIU) through its National Extension Department and major stakeholders. The data reviewed encompasses priority commodities for the Ministry that close cycle during January 2017 to December 2017.

ECONOMIC OUTPUT OF AGRICULTURE SECTOR 2017

Fig 1. Agriculture Economic Output from 2008 to 2017



Source: MOA 2017

Total Agricultural Outputs include economic returns from the production of citrus, banana, sugar, fruits, legumes, grains, vegetables, livestock and marine products.

Table 1. Primary Agriculture Output Value 2016-2017 at Producer's Price

Commodities	Primary Agriculture Output Value at Producer Price		
	2016	2017	Percentage change
Sugarcane	\$ 77,231,668.24	\$ 101,144,657.60	31
Banana Products	\$ 74,960,005.12	\$ 88,844,250.80	19
Citrus Products	\$ 45,941,743.68	\$ 53,166,236.60	16
Marine Products (incl 5% for dom. Consump)	\$ 42,964,317.25	\$ 41,705,347.20	-3
Fruits/Vegetables\Grains\Legumes	\$ 143,668,155.30	\$ 150,158,791.60	5
Livestock	\$ 152,134,065.75	\$ 154,772,552.03	2
Total:	\$ 536,899,955.34	\$ 589,791,835.83	10

Source: MOA

For the year 2017, the sector contributed BZ\$590 million to the economy of Belize an increase of 10% as compared to the last year. This was due mostly to value increases in the sectors of the Sugar, Banana, and Citrus.

The boost in sugar production quantities of the West (Santander) along with the higher price paid for sugar, caused an increase of 31% in economic output. The increase of production of banana coupled with the stable price ensured that the economic returns of banana increased by 19%.

Moreover, the citrus industry experienced a 16% increase in economic output due to the higher price being paid for oranges in 2017. Production of oranges slightly decreased by 1% however the international price of oranges increased from \$12.54 to \$15.23 and from \$8 to \$12 in the domestic market causing economic returns to remain substantial. While grapefruit production decreased by 50% compared to last year, prices increased by \$1.58. The commodity contributed to \$2 million dollars to the economy, a figure which decreased by 42% compared to last year.

Fruits, Vegetables, Grains, Legumes had an overall economic output of \$150 million, a 5% increase as compared to the year 2016. With the following commodities experiencing major changes:

- a. Pineapple and watermelon experienced an increase in production of 30% while prices remained stable as compared to last year. The increase in production of pineapple was due to the boost in Toledo. Producers are supplying CPBL who is now mixing juices to create new lines of juice products. The production quantity of this commodity is expected to grow 2018-2019. Farmers in Cayo and Corozal increased production due to the stable prices.
- b. Soursop production also increased by 18% and had a .50 cents price increase as compared to last year. The demand of the seasonal crop has increased drastically.
- c. RK beans and Black Beans also increased in production, 19% and 117%, respectively and prices remained the same as compared to the year 2016.
- d. The local production of hot peppers increased by over 100% with a price .50 cents higher than the \$3 paid for the commodity in 2016.
- e. The production of squash and pumpkin doubled while the price remained relatively stable. The production of cocoyam also increased by 60%, cauliflower by 89 % even though their prices remained stable, at .75 cents and \$1.50 respectively.
- f. Chinese Cabbage production increased by 168% however the price remained stable at .50 cents. Yampi production also saw a major increase of 71%. Yampi's production increased due to its attractiveness as a purple and sweet yam. The Chinese cabbage demand has also increased due to its texture, softer than the cabbage.
- g. Irish potato production increased by 25%, onion production on the other hand decreased by 13% while its price increased by .50 cents.
- h. The production of carrots decreased by 13%.

Livestock's economic value increased by 2% as compared to last year, accounting for \$154 million in economic output. The 2017 population of cattle was 36,676 beef and 98,727 dairy, a total of 135,403 heads of cattle. Beef slaughtered in 2017 increased by 2% with prices being stable at \$3.75lb equating to \$12 million in contribution to the economy. Milk production in pounds increased by 19% yielding returns of \$8 million. Sheep dress weight production decreased by 13% and its price remained stable at \$2.75lb. Pig dress weight production increased by 5% and contributed \$14million to the economy.

Economic returns from poultry amounted to \$102 million, 2% higher than last year's figure. The production of poultry increased by 4%, even though the price decreased by .04 cents as compared to last year. Egg production decreased by 17% from 17 million to 14 million. Turkey production increased by 71% equating to \$2.8 million.

Moreover, honey production increased by 14%, the price decreased by .50 cents as compared to the \$4 paid in 2016, this caused the economic output of the industry to decrease by 5%.

EMPLOYMENT

Agriculture employed 22,801 farmers during the period April 2015. For the year April 2016, 24,982 farmers are reported by the Statistical Institute of Belize (SIB), an increase of 8.7% during that period.

For time of April 2017, 24,982 persons were employed by Agriculture and related activities.

Aquaculture employed 2,182. As of March, however the Belize Aquaculture Limited (BAL) laid off 100 persons. Given that decrease 27,064 persons are employed by agriculture, an 8% increase as compared to last year April 2016.

TRADITIONALS

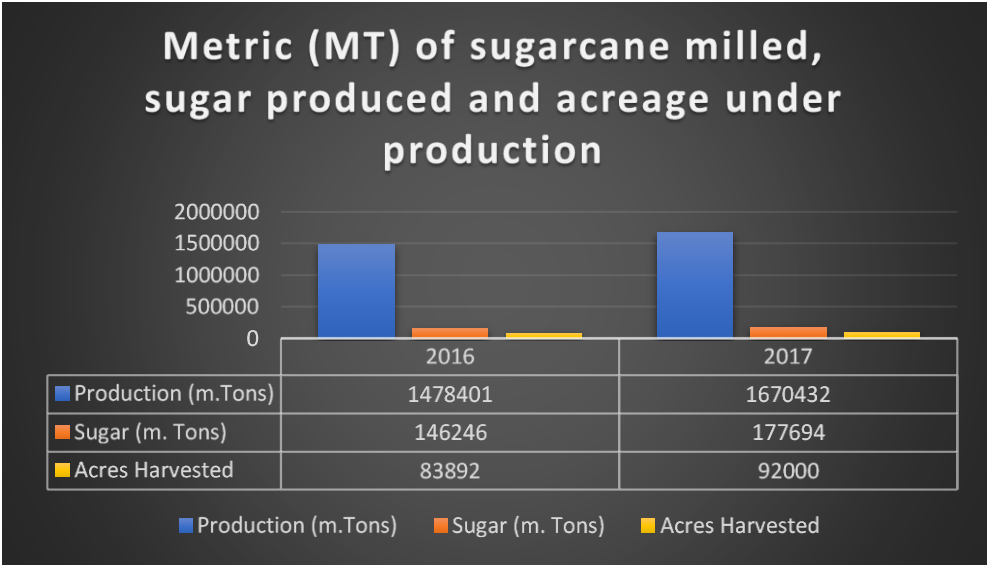
SUGARCANE

Milling of sugar cane starts during the months of December 2016 to June 2017 which is the period that cane is harvested for both the North and West. The West is heavily mechanized hence the time for harvesting is dependent on the weather since tractors and other machinery cannot harvest if the grounds are moist.

Sugar cane production for 2017 in the North remained stable decreasing slightly by 1.77% when compared to 2016. While sugar cane production increased drastically from 2016 to 2017 by 130% in the West as illustrated in *Table 2*. Aggregated sugar cane production for 2017 (1.67 million metric tons) increased by 13% (192 thousand metric tons) in comparison to 2016 (1.47 million metric tons) as indicated in *Table 2* and *Fig 2*. Based on the total delivery for the North, a sample of 30% was taken by

SIRDI indicating that average field productivity was 21 metric tons of sugar cane per acre in 2016/2017 compared to 18 metric tons of sugar cane per acre in 2015/2016 crop. Field productivity for Santander sugar is 40 metric tons of sugar cane per acre 2016/2017 crop and 19 metric tons of sugar cane per acre in 2015/2016 indicating a drastic increase in productivity.

Fig 2. Metric Tons of sugar cane milled, sugar produced and acreage harvested



Source: ASR/BSI and Santander Sugar

Sugar production in the North, for 2017 crop, increased by 7.65% in comparison to the year 2016. For the North, the increase of 144,086 metric tons sets the production to the high point established in 2017 compared to 133,847 metric tons in 2016 as shown in *Table 2*. The overall productivity of the Northern sugar belt increased from 9.82 Tons Cane per Tons Sugar (TC/TS) in 2016 to 8.95 (TC/TS) in 2017. The increase in sugar production was due to good cane quality, improved factory performance (due to strategic investments made by the ASR Group) and favorable weather conditions. Key indicators from the Northern Sugar belt are:

- Pol in cane (sucrose in cane/ cane quality) – increase to 12.67 from 11.84
- Pol extraction (mill performance) – increase to 96.16 % from 95.92 %
- Overall recovery (factory performance) – increase to 86.77% from 84.7%

Table 2. Production data for both Northern and Western Producers

Sugar	North	West	2016	North	West	2017	% change North 2017	% change West 2017	% Change Industry
Production (m.Tons)	1313255	165146	1478401	1290056	380376	1670432	-1.77	130	13
Sugar (m. Tons)	133847	12399	146246	144086	33608	177694	7.65	171	22
Sugarcane (m.Tons)	1313255	165146	1478401	1290056	380376	1670432	-1.77	130	13
Acres Harvested	75000	8892	83892	78000	14000	92000	4.00	57	10
Yield (m. Tons)									
Production (m.Tons)									

Molasses (m. Tons)	43089	6311	49400	39878	16809	56687	-7.45	166	15
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Source: ASR/BSI and Santander Sugar

The West’s sugar production drastically increased by over 130% in 2017. Increase in production and productivity is due to its mechanized system of farming. Santander, the company working 12,000 acres of land, is efficiently implementing new technologies that create the environment for an increase in productivity. Apart from the large sugar producer/ company Santander, four farmers sell produce to Santander amounting to approximately 2,000 acres. In addition, like the sugar producers in the North, good weather also contributed to the high and quality yields. Sugar production while not as productive as that of the North (8.95 tons cane per sugar) increased productivity from 13.32 tons cane per ton sugar in 2016 to 10.53 tons cane per sugar in 2017. This year the sugar industry while being very productive is facing the challenge of controlling the froghopper which damages the foliage of sugarcane.

Molasses production in the North decreased by 7.45% in comparison to the year 2016 however, in the West production increased by over 150%. The figures decreased in the North because sugar production was efficient hence the bi-product produced was less. The figures in the West increased due to lower productivity of sugar per acre of sugarcane. Overall, molasses production increased by 14%.

The West used the bagasse for cogeneration and generated 18,000,000 kwh of energy. The North produces 677,869 tonnes of steam during crop and 103,323,150 kwh of energy during crop.

Table 3. Economic output for sugarcane industry

Commodity	2013	2014	2015	2016	2017	% Change
Sugar Cane ("000 metric tons)	1,078	1,214	1,186	1,478	1,670	13
price	74.2	67.5	75.9	52.3	60.6	16
Income \$BZ('000)	\$79,989	\$81,978	\$90,017	\$77,299	\$101,202	31

Source: MOA 2017

In all, sugar produced by the industry increased by 31% and total acres harvested amounted to 92,000 acres (an increase of 10%) as illustrated in *Fig 2*. Sugar cane production increased by 13% in 2017 compared with 2016. In addition, prices increased by 16% from \$52.3 in 2016 to \$60.6 in 2017 as shown in *Table 3*.

PROJECTION

Belize’s industry production of sugar is projected to increase to approximately 255,939 metric tons of sugar by 2021 *Table 4*.

Table 4: Table showing the projected Sugar production of the Sugar Industry until 2021.

Company	Projected production in metric tons sugar
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	2017	2018	2019	2020	2021
Santander	49000	80490	110418	110418	115939
BSI	140,000	140,000	140,000	140,000	140,000
Total Industry	189,000	220,490	250,418	250,418	255,939

Source: MOA, 2017

NEW DEVELOPMENTS

1. ASR Board has approved funding for the first of a three-phase investment, to increase the production of direct consumption sugars (DCS). The first phase, scheduled for 18 months, will increase DCS annual production from 30,000 to 50,000 tons at a cost of BZE \$22 million but is dependent on the investment climate and a guarantee of sugarcane supply. Further phases are scheduled to span over four years after the completion of phase one.
2. Sugar prices are expected to fall as the industry braces to meet the immediate challenges due to changes in preferential market in the EU market (October 2017). As a result, the investment in DCS expansion project will be coupled with efforts to expand in new markets that are being sought in the Caribbean region.
3. IPM EU project: Research for varieties and control of frog hopper through integrated pest management is about to be completed.

CITRUS

The Citrus Industry factory usually opens during the months of October to July of every year. This year the factory accepted its first delivery of Orange on the 11th of January 2017 until the 28th of June 2017 and grapefruit from the 24th of November 2016 until the 19th of May 2017. The factory opened three times per week and closed during months when there was no product scheduled for delivery.

Table 5. Production data and Economic output for both Oranges and Grapefruit

Commodity	2013	2014	2015	2016	2017	% Change
Oranges ('000 90 pounds per box)	4,160	4,252	4,073	3248	3201	-1
Price	\$ 11.01	\$ 10.95	\$ 11.94	\$ 12.54	\$ 15.23	21
Oranges Income \$BZ ('000)	\$ 45,818	\$ 46,558	\$ 48,644	\$ 40,730	\$ 48,749	20
Grapefruit ('000 80 pounds per box)	701	598	754	371	186	-50
Price	\$ 9.35	\$ 9.87	\$ 9.92	\$ 10.10	\$ 11.69	16
Grapefruit Income \$BZ('000)	\$ 6,548	\$ 5,899	\$ 7,481	\$ 3,747	\$ 2,174	-42
Total CITRUS income	\$ 52,366	\$ 52,456	\$ 56,125	\$ 44,477	\$ 50,923	14

Source: Citrus Growers Association and MOA, 2017

As per *Table 5* above, production of oranges decreased by 1% since 2016. The income earned from the sales of oranges in the increased because of higher price paid in the international market, from \$12.54

per box in 2016 to \$15.23 per box in 2017, an increase of 21% (\$2.69). In addition the price for a box in the local market also increased from \$8 to \$12. While the production of grapefruit decreased significantly by 50%, the price for grapefruit however increased from \$10.10 in 2016 to \$11.69 in the 2017, an increase of 16% (\$1.59). Although production has decreased for both Oranges and Grapefruit, the income being earned by both commodities has increased by 14%, mainly due to the high market prices being paid for the commodities. Moreover, the citrus industry which includes fruit, concentrate and oil experienced a 16% increase in economic output due to the higher price being paid for citrus products in the international market.

The overall productivity of citrus groves is being challenged by unproductive aging trees, the loss of old trees, the citrus greening or HLB disease, and the fact that the replanting, in particular of grapefruit trees, has ceased for the last four to five years. Even though market prices for grapefruit is high, farmers prefer to invest in the production of orange since HLB causes less damage to orange tree. Another factor affecting 2017 production was Hurricane Earl that struck Belize in August 2016. It was also reported that the factory processing time and other factory related issues also affected production.

PROJECTION

Citrus production 2017/2018 is expected to increase by 5% due to the replanting initiatives.

NEW DEVELOPMENTS

1. As a result of the HLB outbreak, the need to destroy affected or aged trees, and the effects of Hurricane Earl, the industry deemed it necessary to replant 8,000 acres of citrus in order to have throughput. Industry stakeholders agreed that Citrus Products of Belize Limited (CPBL) would grow 50% of the acres and that other farmers would grow the remaining 50%. CPBL in 2016, planted 100 acres of oranges and will planted 610 acres this year.
2. The Ministry has initiated with key stakeholders a discussion on the way forward for the Citrus Industry. Stakeholders and the Government have committed to the development of a Strategic Plan to be able to meet the Industry's goal and vision.
3. The Social Security Board of Belize has also approved a ten-million-dollar line of credit to citrus farmers for the planting of citrus/ pineapple. The 12-year period loan package allows growers to remove old trees, replant at higher densities and/or bring new land into production. The objective of the loan then is to increase efficient production by encouraging the better utilization of resources and better management practices. Some farms have been abandoned and corn and pineapple.
4. After the consolidation of the factory plant, the efficiency of the feed mill in producing Citropulpa pellets has improved. This year the pellets are not only exported, but are also being sold in the domestic market to support the livestock industry. This year the mill did not produce any compost due to the fact the feed mill was very efficient in the production of feed.

BANANA

The economic output of the Banana sector this year increased by 19%, to \$89 million. Exported banana production figures increased by 18% and income generated by 17%, to \$82 million. The remainder of the production was sold to the local market. Production to the local market increased by 21% also income generated in the local market increased by 45% due to the increase in price of box from \$10 to \$12.

The Banana industry factory opens during the banana harvest season, January to December of every year for processing. As a result of this, production is dependent mainly on environmental factors which include weather and disease.

Hurricane Earl in 2016 affected the output of bananas. In addition, diseases namely Panama Disease and Black Sigatoka have had a negative effect on production.

Other inefficiencies exist in the production practices that are hindering further improvements in yields. Constraints to yield improvements include inadequate application of good agronomic practices such as adequate land preparation, clearing activities, fallowing, rehabilitation of soil fertility (structural, chemical and biological) together with appropriate drainage and effective irrigation systems, allowing fertigation. Additionally, the ability to easily obtain adequate high-quality banana meristems is also a challenge.

PROJECTION

A scheduled replanting programme and the adoption of a ten-year banana follow cycle are expected to boost banana yields and will assist farmers in maintaining disease-free soil bed and rejuvenated soil profiles.

NEW DEVELOPMENTS:

1. The EU Project entitled “Productivity Enhancement of Banana Farms through integrated soil fertility management in the Banana Belt Area” costing 2 million EUR will last 18 months and impact 22 farms and 10 banana producers. The projects results include:
 - a. Increasing the soil fertility in the banana sector for improved productivity which includes a soil fertility management program
 - b. Enhancing the capacity of the University of Belize’s micro propagation laboratory for improved production of planting material banana (variety diversification and procedures for developing elite banana lines, plant disease diagnosis, and development of Tissue culture of other commodities).
2. A scheduled replanting programme and the adoption of a ten-year banana follow cycle are expected to boost banana yields and will assist farmers in maintaining disease-free soil bed and rejuvenated soil profiles

GRAINS

RK BEANS

With an increase of 19% (1.86 million pounds) harvested from 2016 to 2017 and using almost equivalent acreage of land; production has increased significantly (see *Table 7*). The price for red kidney beans also saw a 39% increase in price and generated an income of 11.19 million BZE in 2017 equivalent of 65% increase from 2016 (6.77 Million BZE).

The increase can be attributed to favorable weather conditions during the period of planting and the inclusion of data from Neuland community into the 2017 reporting data. Local demand remained steady while RK beans were also exported to the Caribbean and Guatemala. Neufield community stopped exporting due to factors attributed to bean quality. Primary export is Jamaica, Trinidad and Tobago and Barbados.

Table 7. Red Kidney Beans Production Data, Economic Output Data and Acreage under production

Commodity	2013	2014	2015	2016	2017	% Change
Red Kidney Beans ('000 pounds)	12,479	10,340	21,239	9680	11541	19
Price	\$ 0.80	\$ 0.85	\$ 0.75	\$ 0.70	\$ 0.97	39
Income BZE\$ ('000)	\$ 9,983.33	\$ 8,272.28	\$ 16,991.10	\$ 6,776.00	\$ 11,195.00	65
Acreage Under Production				16,140	16,207	0.42

Source: MOA 2017

OTHER BEANS “SMALL RED BEANS”

As reported in the “2016 Annual Production Report” farmers continue to produce small red beans in 2017 to meet the stable demand of the Guatemalan market and other neighboring countries. The local market has a preference for RK and Black beans and all other beans are mostly exported.

BLACK BEANS

In 2017 approximately 3,649,500 Million lbs of black beans was harvested from 3,551 acres of land signifying an increase of 117% (1,964,300 lbs) compared to 2016. This increase in production also saw an increase of 45% (1,110 acres) of land being used to cultivate black beans as seen in (*Fig 3*). Moreover, an estimated 833 lbs/acre of black beans was harvested in 2017 compared to 690 lbs/acre in 2016, indicating a significant increase in productivity of 20.7% as seen in *Table 8*. The 2017 report also includes data from Nueland which was not included in the 2016 report.

The increase in black beans production is attributed to better weather conditions for the 2017 crop cycle similar to RK beans production. Another factor that contributed to the increase in production includes availability of local and regional markets to sell product. Black beans are being exported to Guatemala

mostly through an informal mechanism “trade” at the southern border. However, in the northern part of Belize 10 containers of black beans in Indian Creek were exported to the Caribbean.

Table 8. Productivity based on Pounds/Acre

Black Beans	2016	2017	% change
Pounds Harvested	1,685,200	3,649,500	117
Acres Harvested	2,441	3,551	45
Productivity (Lbs/Acre)	690	833	20.7

Source: MOA 2017

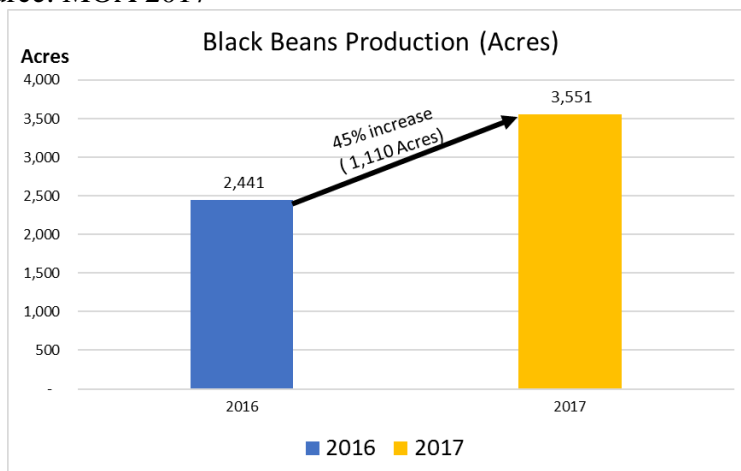
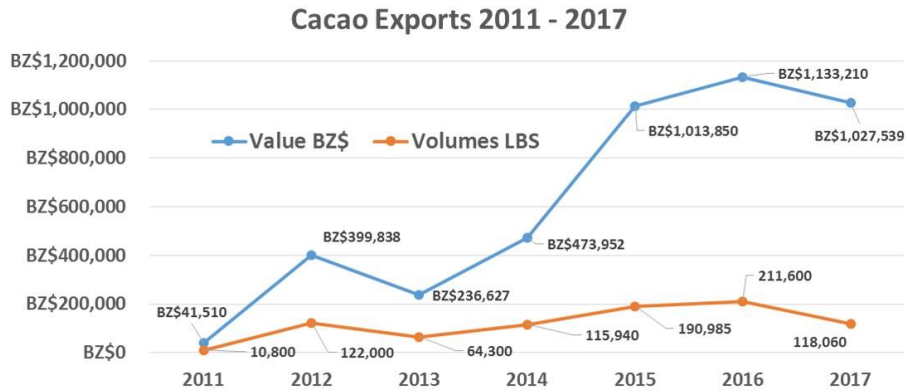


Fig 3. Black Beans Production 2016 – 2017 (Acres)

COCOA BEANS



Source: Volume, SIB and Value, Customs Department

Export figures decreased by 44% as compared to the year 2016, as a result value earned from the commodity decreased by 23%.

For the year 2016/2017 the international prices for cocoa beans remained high at \$1.10 a pound for wet bean and \$3.50 for a pound of dried fermented beans. At the end of March 2018, however international prices for the wet bean fell to \$0.75 and the dried fermented beans range from \$2.75 -3.25. A price decrease of 31% for wet bean and a decrease of 21% at \$2.75 a pound for dried fermented bean.

Monillia fungus affected the production of Cacao.

COWPEAS

Cowpeas saw a significant decrease in production of 59% (5,394,100 lbs) from 2016 to 2017 (Table 9) and simultaneously saw a decrease in acreage planted of 47% (3,428 acres) in the 2017 harvest cycle. This decrease is due to the downturn of demand in the world market and as such less cow peas were exported and less acreages were planted. Price was also very low and soy beans was being substituted for cowpeas in animal feed production as a result.

Farmers have reported a large quantity of cowpeas remain stored in bins and grain holding silos. It is also projected that less cow peas will be planted in the next crop cycle due to storage space, availability of stored beans and the overall low demand for cowpeas.

Table 9. Productivity and Economic Output

Commodity	2013	2014	2015	2016	2017	% Change
Black eye peas ('000 pounds)	6,447	5,231	6,636	9075	3681	-59
Price	\$ 1.00	\$ 1.00	0.90	0.50	\$ 0.68	36
Income BZE\$ ('000)	\$ 6,447	\$ 5,231	5,972	4,538	\$ 2,503	-45

SOYBEANS

Soybeans production increased by 68% equivalent to 11,590 million pounds from 2016 to 2017 as indicated in Table 10. This increase was also seen in acres harvested which has increased by 45% (3,221 acres) in 2017 illustrated in Table 11. Increase in production was a direct correlation to increase in production of animal feed for the poultry industry. 4th quarter saw a significant increase in poultry slaughtered which is an indicator of the feed demand from soy. Soy oil remains a problem due to quantity that is produced as a byproduct, some is used for bio fuel but also voiced concern with getting rid of excess oils that cannot be used as bio fuel. 2018 production is estimated to decrease due to forecasted increase in rainfall.

Table 10. Soybeans Productivity and Economic Output Report

Commodity	2013	2014	2015	2016	2017	% Change
Soybeans ('000 pounds)	9,284	8547	11240	17150	28740	68
Price	0.85	0.40	0.47	0.50	0.45	-10
Income BZE\$ ('000)	\$ 7,891.30	\$ 3,418.96	\$ 5,282.94	\$ 8,575.00	\$ 12,933.00	51

Data Source: MOA

Data indicated by stakeholders

Table 11. Acres of Soybeans harvested by Spanish Lookout and Blue Creek communities

Soybeans	2016	2017	% Change
Acres	7,048	10,269	45

CORN

2017 Production figures for corn (Both yellow and white) indicate that there was an increase of 36% (52,413 million lbs). White corn increased by 48% (3,801 million lbs) and Yellow Corn increased by 35% (48,269 million lbs) respectively. Acreage of White corn increased by 88% and yellow corn decreased by 16%.

The 2017 economic value of corn indicate that there was a 2% increase in 2017 compared to 2016. Yellow corn is being exported to Guatemala and production increased due to adequate weather conditions. Yellow corn is also being used domestically to produce animal feed. White corn on the other hand is being used mostly in the domestic market for corn tortilla/Minsa and corn meal. Some white corn is also being exported to Guatemala

Commodity	2013	2014	2015	2016	2017	% Change
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Corn ('000 lbs)	158,567	157,368	159,158	144,978	197391	36
White Corn ('000 lbs)				7,949	11,750	48
White Corn Acres				3,852	7,226	88
Yellow Corn ('000 lbs)				137,028	185,297	35
Yellow Corn Acres				50,714	42,418	-16
Price	\$ 0.30	\$ 0.35	\$ 0.40	\$ 0.14	\$ 0.10	-25
Income BZE\$ ('000)	\$ 47,570	\$ 55,079	\$ 63,663	\$ 20,297	\$ 20,726	2

Table 12. Production Data and Economic Value of Corn

RICE

Commodity	2013	2014	2015	2016	2017	% Change
Rice paddy ('000 pounds)	25,971	45,449	45,246	42,068	27,155	-35
Price	\$ 0.25	\$ 0.33	\$ 0.33	\$ 0.33	\$ 0.33	0
Income BZE\$ ('000)	\$ 6,493	\$ 14,998	\$ 14,931	\$ 13,882	\$ 8,961	-35
Acres Harvested (Milpa)				123	162	32
Acres Harvested (Mechanical)				4,045	5,700	41

Rice production in 2017 indicates that total production was 27.15 Million tons which fell by 35% (14.91 Million tons) compared to 2016 production of 42.06 million as shown in **table 13**. Simultaneously the income generated indicate a 35% decrease which is equivalent to 8.9 million BZE while the price of rice remained the same at .33 cents per pound. There was 123 Acres of Milpa Rice harvested in 2016 and 162 acres of milpa rice was harvested in 2017 indicating an increase of 32%. Mechanical harvest recorded 4,045 acres in 2016 and 5,700 acres in 2017 which continued to be the most dominant method of farming and indicated an increase of 41% as illustrated in table 13.

There has been an increase in local demand by an estimated 16% which is attributed to increase in overnight tourist arrivals. There are approximately 8 months of rice supplies in storage and the new (2018) crop is expected at the end of 1st trimester.

SORGHUM

Sorghum saw an increase from 22 million pounds in 2016 to 34.9 Million pounds in 2017 which is equivalent to 59% (12.9 Million pounds). From production statistics we can also see that acres under production increased by 27% (2,229 acres). Economic output also indicates that there is a 59% increase in 2017 which is estimated at 3,228 acres.

Sorghum varieties planted in Belize are used only for animal feed. Challenges being faced include the Yellow Sugarcane Aphid (Hemiptera:Aphididae) which is an invasive specie of aphid currently affecting sorghum plants in Belize.

Table 14. Production Value and Economic Value of Sorghum

Commodity	2013	2014	2015	2016	2017	% Change
Sorghum ('000 pounds)	23567	20560	43908	22004	34914	59
Price	\$ 0.20	\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25	0
Income BZE\$ ('000)	\$ 4,713	\$ 5,140	\$ 10,977	\$ 5,501	\$ 8,729	59
Acres Harvested				8,514	10,813	27

LIVESTOCK

CATTLE

Cattle production has remained steady with good market prices and little incidences of disease affecting the industry hence maintaining the status of being free of tuberculosis and brucellosis. The only incidence that affected the cattle industry was the outbreak of rabies in specific areas but farmers vaccinated their animals in Blue Creek and Spanish Lookout to remedy this situation. Rabies outbreak mainly occurs in the dry season. BAHA and the Ministry of Agriculture are also playing their role in monitoring the outbreak, eradicating vampire bats and providing technical assistance to livestock producers.

While Guatemala remains the primary market, the trade with the country remains informal. Formal border transshipment of cattle is not being used because of a sur-charge of 76 cents per lb at the Guatemala border. Livestock producers are also currently experiencing banking problems especially with correspondence banking.

Cattle producers exported 4,872 heads of cattle at \$0.95 cents per pound live weight. Prices for live weight cattle from May to July 2017 ranged between \$1.60-\$1.80 per lb. For the month of August 2017 however prices have increased ranging from \$2-\$2.25 per lb., with younger calves priced at \$2.25, older at \$2.00 and cows at \$1.50. Prices are expected to remain stable since there is a stable demand from neighboring countries.

The production/ exports of cattle is expected to increase especially with the new herd introduced by the Shipyard Community. Despite the consistent rate of export the national herd has seen a growth of more than 25%. The national cattle census to date is at a total of 135,403 heads of cattle.

Other data gathered from the livestock industry includes slaughter data shown in *Table 15* below. In 2017 cattle slaughtering increased by 2% and the Dress weight also increased by 2% indicating a proportionate increase. Price remained relatively similar at \$4.00 BZE per pound for dress weight and the Total Economic Output generated from livestock increased by 2% in 2017.

Table 15. Production Value and Economic Value of Cattle Slaughtered

Commodity	2013	2014	2015	2016	2017	% Change
Cattle: No. slaughtered (#)	9,052	7,588	7,834	7,093	7,268	2
Cattle: dressed weight ('000 pounds)	4,073	3,415	3,525	3,192	3,270	2
Price	\$ 3.50	\$ 3.50	\$ 4.00	\$ 4.00	\$ 4.00	0
Income BZE\$ ('000)	\$ 14,257	\$ 11,951	\$ 14,102	\$ 11,969	\$ 12,264	2

NEW DEVELOPMENTS

1. The partnership between the Government of Belize, BAHA and the Private Sector, the national cattle herd is free of diseases such as tuberculosis and brucellosis. Also, an animal traceability system has been implemented. These achievements have permitted cattle farmers to access

Commodity	2013	2014	2015	2016	2017	% Change
Poultry No. slaughtered ('000 units)	9,954	10,690	11,212	11,669	11,870	2
Poultry dressed weight ('000 pounds)	35,312	38,579	40,774	41,719	43,311	4
Price	\$ 2.65	\$ 2.41	\$ 2.48	\$ 2.40	\$ 2.36	-2
Income \$BZ ('000)	\$93,577	\$ 92,975	\$ 101,119	\$100,125.85	\$102,213.75	2

markets in neighboring countries and beyond, having fulfilled importation requirements.

POULTRY

There is an increase in chicken production even though it had experienced negative effects of New Castle disease especially the southern part of Belize. BAHA along with the Ministry of Agriculture have been coordinating efforts to sustain a strong surveillance mechanism to eradicate the disease.

Belize had sufficient turkey to supply the market this year as indicated by stakeholders. The first flock of turkey was slaughtered in mid-2017 and second flock was slaughtered in the later part of 2017 in anticipation of Christmas season. Livestock slaughter data for 2017 clearly indicates that production is steady and increased by 2% in 2017 when compared to 2016 which also indicates that production is following similar trend as seen in *Table 16*. The total Economic Value in 2017 also increased by 2% even though the price of poultry decreased by 2%.

Table 16. Production Value and Economic Value of Poultry Slaughtered

NEW DEVELOPMENTS

1. The Poultry Industry has fully recovered from the Avian Flu experience in 2015 and since then the national flock has proven to be free of exotic avian diseases. The industry continues to make strides as it expands and continue to provide all Belizean with the most affordable source of protein. Belize is self-sufficient in poultry products and will soon be trading among CARICOM member countries. Two major poultry processing plants (Quality Poultry Products and Caribbean Chicken Ltd.) in **Jamaica on June 22nd and 23rd** have been recommended for export by Chief Veterinary Officers of CARICOM member countries to COTED.

PIGS

Number of pigs slaughtered in 2017 indicated that there was a 5% increase when compared to 2016 as shown in *table 17*. The total amount of dress weight also increased by 5% simultaneously from 2016 to 2017. The price for pigs remained the same at \$3.50 per pound which indicates that the prices is stable. The total economic value of pigs also increased by 5% from 13.01 Million BZE (2016) to 13.71 Million BZE (2017). Pigs are in high demand by the Guatemalans who buy them directly from the farmer's gate and thus contributing to an increase in overall production.

Table 17. Production Value and Economic Value of Pigs Slaughtered

Commodity	2013	2014	2015	2016	2017	% Change
Pigs: No. slaughtered (#)	24,655	25,233	30,038	30,993	32,674	5
Pigs: Dressed weight ('000 pounds)	2,959	3,028	3,605	3,719	3,921	5
Price	\$ 3.50	\$ 3.70	\$ 3.50	\$ 3.50	\$ 3.50	0
Income BZE\$ ('000)	\$ 10,355	\$ 11,204	\$ 12,616	\$ 13,017	\$ 13,723	5

MARINE

Table 9. Marine Exports

Table A.15: Marine Exports

	Jan - May 2016		Jan - May 2017	
	Volume ('000 pounds)	Value (\$'000)	Volume ('000 pounds)	Value (\$'000)
Lobster	220	4,137	281	4,938
Shrimp	397	3,078	415	4,227
Conch	363	4,283	306	3,647
Other Fish	222	235	121	129
Total	1,202	11,733	1,124	12,942

Source: SIB

Marine exports for the first half of 2017 show a slight decrease in total volumes of 6.5%, values on the other hand increased by 9% when compared to same figures in mid-year 2016.

The Lobster volumes figures ranked the highest with an increase of 21% and values with an increase of 16%. The second ranking commodity: Shrimp shows increased volumes and values by 4% and 27% respectively. The third commodity, Conch experienced a decrease in volumes of 16% and as a result, a decrease in value of 15% *Table 9*.

Other Fish volumes decreased by 46% as a result values decreased by 48%.

SHRIMP

Table 10. Shrimp Production and Export Figures

Shrimps (White Farmed)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	% Change
Quantity (Thousand Lbs)	7452.645	10261.05	\$11,180.99	10072	10250.77	14597.76	14388.89	9283.812	1412.242	1160.68	-17.81
Value	21010.11	28628.34	\$31,116.99	20994	28409.52	84069.9	88466.47	59672.63	12027.93	9137.635	-24.03

Source:SIB

The fresh water Shrimp Industry has been facing the severe challenge of managing the Early Mortality Syndrome disease (EMS). The disease during 2016/2017 spread throughout all major shrimp farms killing shrimp at any of its life stage. The quantity exported decreased by 18% as well as income generated by 24%.

While the industry is slowly recuperating with good harvest from some farms, the quantities are not at commercial scales. Low numbers will have a direct negative effect on foreign currency earnings and the number employed since farms are not working at full potential.

Upon the conclusion that the Industry was being affected with EMS, the industry implemented technology known to manage and eradicate the disease in other parts of the world. The first activity done was to implement new technologies of production gradually into our old production system. This activity, however, is not guaranteeing production numbers that are necessary to revitalize the industry. In March 2017 the Belize Aquaculture Limited (BAL) downsized its facility by laying off 100 workers due to the significant costs the company had incurred in the fight against the disease outbreak. Substantial efforts are underway to rebuild and make its operations profitable in Belize, with a view to re-employ affected employees later.

NEW DEVELOPMENTS

1. There are two trends emerging: first, the small-scale farmers are re stocking farms and second the large scale farmers are investing in new field production technology. Royal Mayan has converted its old shrimp ponds to tilapia ponds and has built ten new technology ponds.
2. In addition, the Industry intends to combine new production infrastructure with good management approaches in the field in order to develop viable production protocols across the Industry. Aqua Mar, Belize Aquaculture Ltd. and Royal Mayan, specifically, are working together on this strategy.
3. Shrimp farmers are now making huge strides in recovering from this crisis having implemented disease control measures. Shrimp farmers have now stocked up to 60% of their ponds and at least 3 establishments have experienced more than 50% survival rate. One establishment has reported more than 90% survival rate in grow-out ponds and it is expected that in the near future more farms will be experiencing similar survival rate. Mexico has once again opened its borders to allow for the importation of Shrimps, Lobster and Tilapia Fish from Belize. For this year 2017 BAHA has certified a total of **80** shipments of aquaculture products for export, this includes; **26** shipments of shrimps, **36** shipments of lobster and **18** shipments of tilapia fish. BAHA has recently constructed a state of the art PCR Laboratory to enhance its animal disease surveillance system. BAHA can now rapidly control animal disease outbreaks and provide sanitary assurance of exported aquaculture products to trading partners through its certification process. The increased production and export of aquaculture products will certainly provide an additional boost to the Belizean economy.¹
4. Quality Shrimp Limited has also expressed interest in producing white shrimp farming in the village of Libertad, Corozal behind the old sugar factory, 8 production ponds and a hatchery. This will ensure that employment is addressed. The disease has not been identified in the North for this reason the investment was made in that area. The biosecurity measure includes that of cementing floors and shades for each pond.

¹ BAHA Report 2017

5. Aqua Blue Farms, is another business part of the south initiative, it has taken over the dangriga town market and now producing white post larvae to supply the demand of the shrimp farms.

AGRICULTURE VALUE ADDED COMMODITIES

SOYBEAN OIL

Blue Creek has an overstock of oil of 30,0000 gallons. Soy oil production has halted due to this. The producers advised that the mixture currently being used needs to be optimized to improve the quality demanded by users. Farmers however are interested in venturing into this bi-product and will be investing into its development.

ICE CREAM

Western Dairies in Spanish lookout is exporting ice cream and bottled water to Grenada.

GENERAL EXPECTATION

With the changing weather patterns and other environmental issues, Belizean farmers will continue to experience negative effects in the agriculture sector through increasing incidences of pest & disease, drought, and flood. Generally, the weather condition in the first half of 2017 had a positive impact on the agriculture sector that resulted in increased production and productivity.

The overall prospect for the agriculture sector remains encouraging and positive with increase in production and productivity, leaps into climate smart technology, commodity diversification, value addition and new markets outlets.

