MARKET PROFILES FOR SELECTED ROOT AND TUBER CROPS IN TRINIDAD AND TOBAGO

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for
Selected Root and Tuber Crops
in
Trinidad and Tobago

[An output of the CFC/EU-financed project: "Increased Production of Root and Tuber Crops in the Caribbean through the Introduction of Improved Marketing and Production Technologies" being implemented by CARDI in Barbados, Dominica, Haiti, Jamaica, St. Vincent & the Grenadines and Trinidad & Tobago]

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1.0 Introduction

Ensuring food security for a growing world population is an imperative that cannot be ignored. Agricultural output will need to double by 2050 to feed more than 9 billion people, according to the Food and Agriculture Organization of the United Nations (FAO, 2013). Efforts to increase food production face a number of challenges, amongst which are fluctuations in weather patterns (drought, flood, hurricanes, etc.) and the use of agricultural commodities as alternative sources of energy e.g. corn, sugarcane and cassava. These factors coupled with high energy prices has resulted in increased prices for food products.

For countries, such as Trinidad and Tobago, the cost of imported food has been steadily on the increase. In light of this, the focus has to be on the domestic agricultural sector to increase production for our food security, to reduce the food import bill and food price inflation. The mandate of the National Food Production Action Plan 2012-2015 (MFP, 2013), is for increased production in six commodity groups, one of which is staples, such as cassava and sweet potatoes.

2.0 Production

Root and tuber crops cultivated and consumed in Trinidad & Tobago that are of significant economic and nutritional importance are cassava, sweet potato, yam, dasheen and eddoes. The consumption of root and tuber crops is assuming greater importance in the diet of the population, as prices of imported carbohydrates, such as, flour and rice continue to escalate.

2.1 Cassava

Cassava production in Trinidad & Tobago has been on the increase. Over the period 2007-2011, the output went up by 62.5% (Table 1). This growth can be attributed to an increase in the area harvested from 110ha in 2007 to 149ha in 2011. While the yields have gone up by 20% over the period, it was still well below the norm, about 33t per ha (Figure 1).

An unofficial estimate from industry sources suggests that figures for 2011 were underestimated and the area harvested in 2011 was closer to 600ha while farmers in the Rio Claro district (SE Trinidad) obtained yields of approximately 20t per ha.

Table 1. Cassava production, area harvested and yields in Trinidad and Tobago 2007-2011.

	2007	2008	2009	2010	2011
Production (MT)	1,200	1,350	1,400	1,794	1,950
Area harvested (ha)	110	110	115	139	149
Yield (MT/ha)	10.90	12.28	12.17	12.90	13.08

Source: FAOSTAT, 2012

A study undertaken by the National Agricultural Marketing and Development Corporation (NAMDEVCO, 2009) identified the main production areas as shown in Table 2.

Table 2. Main production areas for cassava in Trinidad and Tobago in 2009.

Production Areas	Area (ha)
Tabaquite	87
Princes Town	86
New Grant	77
Penal	64
Freeport	62
Hindustan	42
Barrackpore	41
Tableland	28

Source: NAMDEVCO, 2009

The most popular varieties of cassava grown were MX, Butterstick and Maracas Blackstick.

2.2 Sweet potato

Production of this commodity has fluctuated in line with changes in the area under cultivation (Table 3). The average annual production over the period 2007-2011 was 330t. The average yield per ha was 6.6t. Unofficial estimates from industry sources suggest the area harvested in 2011 was about 100ha.

Table 3. Sweet potato production, area harvested and yields in Trinidad and Tobago 2007-2011.

	2007	2008	2009	2010	2011
Production (MT)	320	310	380	347	294
Area harvested (ha)	50	46	60	61	37
Yield (MT/ha)	6.40	6.74	6.33	5.69	7.95

Source: FAOSTAT, 2012

The main production areas identified in the NAMDEVCO survey (NAMDEVCO, 2009) were Felicity, Cunupia, Princes Town and New Grant (Table 4).

Table 4. Main production areas (ha) for sweet potato in Trinidad and Tobago.

Production Areas	Area (ha)
Felicity	63
Cunupia	37
Princes Town	13
New Grant	9

Source: NAMDEVCO, 2009

The most popular varieties grown were Chicken foot and 049.

2.3 Yam

The cultivation of yam in Trinidad & Tobago has been at a low level, just a few hectares. The average area under production was 2ha (Table 5).

Table 5. Yam production, area harvested and yields in Trinidad and Tobago 2007–2011.

	2007	2008	2009	2010	2011
Production (MT)	17	18	25	29	27
Area harvested (ha)	2	2	3	No data	No data
Yield (MT/ha)	8.5	9.0	8.3	-	-

Source: FAOSTAT, 2012

2.4 Coco yam

Unlike yam, there was a high level of production of coco yam (eddo and dasheen). The average annual production during the period 2007-2011 was approximately 1,800t. The area harvested fluctuated between 170ha and 200ha. Average yield was approximately 10t (Table 6).

Table 6. Coco yam production, area harvested and yields in Trinidad and Tobago 2007-2011.

	2007	2008	2009	2010	2011
Production (MT)	1,700	1,892	1,635	1,800	1,777
Area harvested (ha)	170	196	206	200	175
Yield (MT/ha)	10.00	9.65	7.94	9.00	10.12

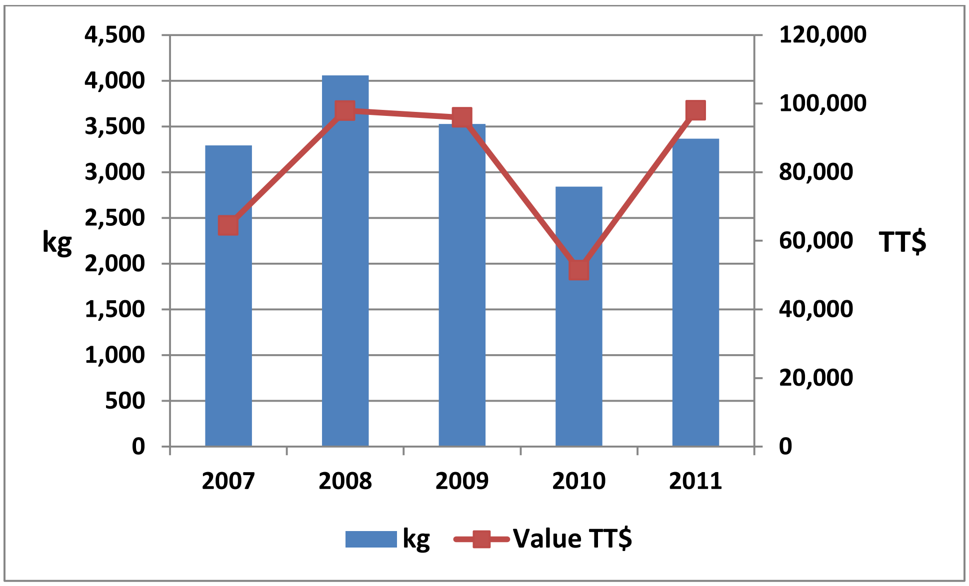
Source: FAOSTAT, 2012

3.0 Imports

3.1 Cassava

Trinidad and Tobago does not import any fresh roots and tubers products; however, a small quantity of frozen cassava was imported. The quantity has fluctuated between approximately 2,800 and 4,000kg per year (Figure 1). The two main sources of supplies were the U.S.A with 91% of the market share in 2011, followed by Colombia and Costa Rica.

Figure 1. Imports of cassava, quantity (kg) and value (TT$) in Trinidad and Tobago 2007-2011.

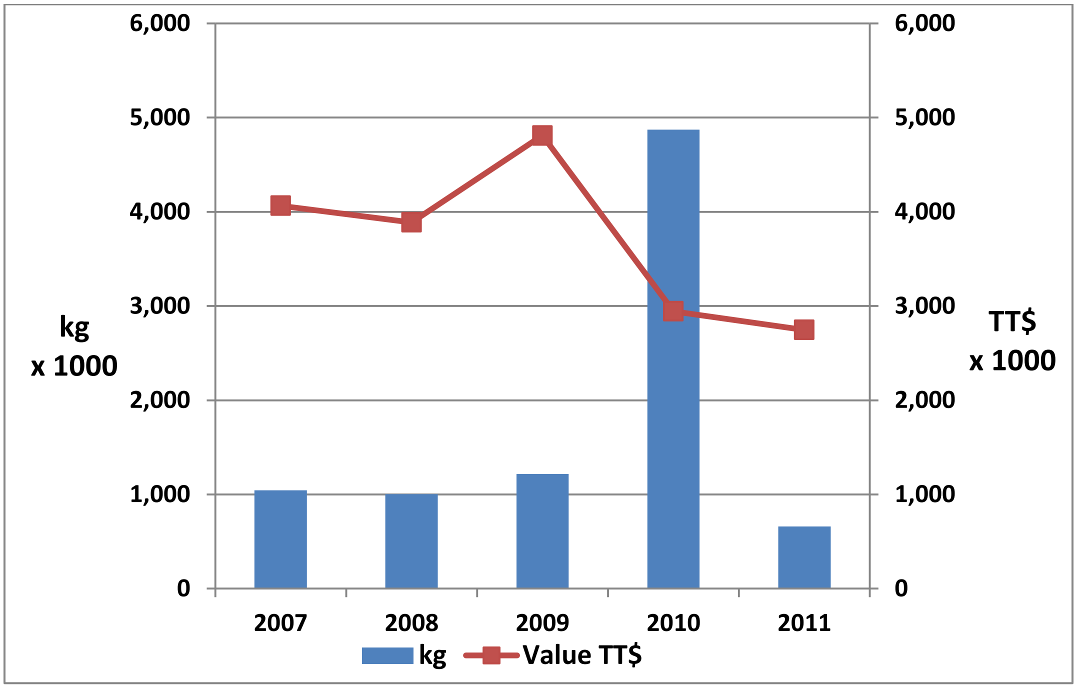


Source: MPSD, 2012

3.2 Imports of sweet potato

Trinidad and Tobago's average annual imports of sweet potato over the period 2007-2011 was approximately 1M kg, except for 2010 when close to 5M kg was imported (Figure 2). St. Vincent has been the main supplier over the last five years.

Figure 2. Imports of sweet potato, quantity (kg) and value (TT$) in Trinidad and Tobago 2007-2011.

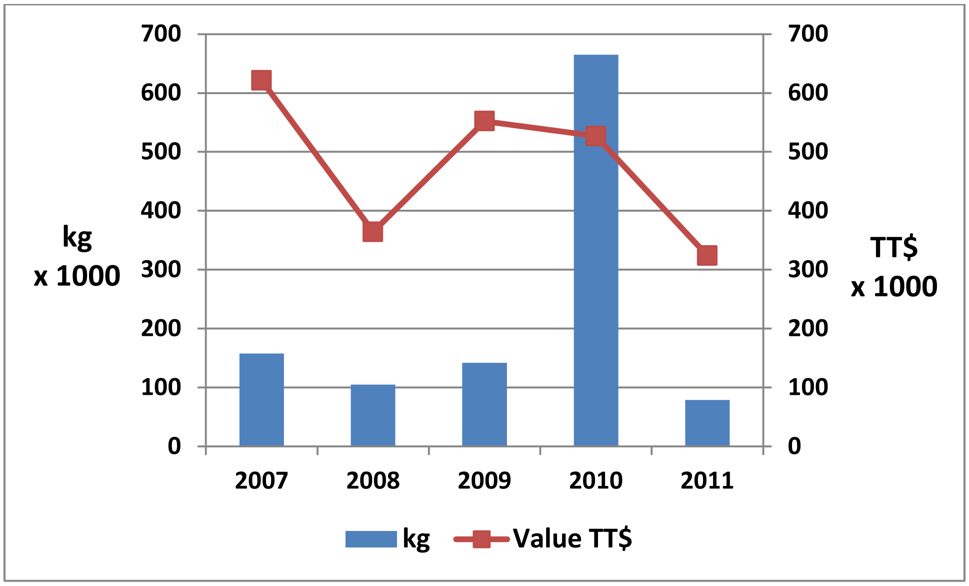


Source: MPSD, 2012

3.3 Yam

Given the small volumes of local production, most of the yams consumed in the country were imported. The data for 2010 show that there was almost a fivefold increase in imports compared to previous years which averaged 135,000t. In 2011 the volumes entering the country fell to 79,073t. St. Vincent has been the only supplier of yams to the Trinidad and Tobago market (Figure 3).

Figure 3. Imports of yam, quantity (kg) and value (TT$) in Trinidad and Tobago 2007-2011.



Source: MPSD, 2012

4.0 Demand

4.1 Fresh Market

There is no recent information identifying the demand for these selected root and tuber crops amongst the various market segments. The data on demand shown in Table 7 are from market studies done in 2007 and 2008 (NAMDEVCO, 2008).

Table 7. Purchases of root and tuber crops by market segment in Trinidad and Tobago.

Root/tuber crop	Market segment (kg/year)			
	Supermarkets	Hotels	School-Feeding Programme	Total annual demand
Cassava	81,000	8,050	-	-
Sweet potato	199,400	4,450	-	-
Dasheen	52,350	6,150	-	-
Eddo	45,150	-	-	-
Total	**377,900**	**18,650**	**143,182***	**539,732**

*All types of root crops, no breakdown available.
Source: NAMDEVCO, 2008.

4.2 Processors

Over the last few years, more attention has been given to the production and marketing of value added products from root crops such as flour, fries and cassava logs. Under the previous National Agribusiness Development Plan, the Trinidad and Tobago Agribusiness Association (TTABA) was created with the objective of facilitating the development of strategic agricultural commodities/industries, one of which was root crops.

TTABA has been providing contracts to root crop farmers and converting the raw products into chilled and frozen cassava and sweet potato fries, chilled and frozen sweet potato, cassava, dasheen and cubes, chunks, wedges and scallops and root crops dough, meal and flour (Figure 4). Recently, the association has started producing cassava and sweet potato bread under the brand name of “Farmers’ Pride”.

A Study of processors in the Region undertaken by the Inter-American Institute for Cooperation on Agriculture (IICA, 2012) identified 24 processors, 6 in Trinidad and 18 in Tobago. The majority (16) of these operators can be classified as micro-enterprises utilising between 25 to 227kg of cassava weekly. No data were available for the use of sweet potato.

The range of products manufactured mainly from cassava by these processors was biscuit, chips, farine, frozen fries, pone, cubes and peeled frozen logs.

Figure 4. Value-added root and tuber crop products manufactured and marketed by TTABA.

Cassava Flour

Bammy

4.3 Wholesale Market Volumes

The volumes of root crops (local and imports) traded at the Northern Wholesale Market, approximately 4M kg, provides a good measure of demand for the fresh products (Table 8).

Table 8. Annual volumes (kg) of roots and tubers traded at the Northern Wholesale Market 2007-2012.

	Annual Volumes (kg)					
Commodity	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Cassava	715,631	913,747	804,310	618,734	658,221	355,474
Common yam	102,842	112,721	85,039	70,351	48,305	50,909
Imported yam	19,359	60,809	175,876	176,815	149,762	168,458
Dasheen (local)	172,285	358,541	421,419	152,656	410,312	328,831
Dasheen (imported)	397,461	348,898	977,506	672,892	821,534	794,806
Eddo (local)	168,128	244,749	161,586	89,504	84,674	41,082
Eddo (imported)	326,492	397,086	668,100	494,433	692,691	601,226
Sweet potato (local)	488,297	1,085,382	1,692,049	1,137,130	1,096,089	978,165
Sweet potato (imported)	309,377	267,768	500,667	181,956	405,736	531,716
TOTAL	**2,699,871**	**3,789,701**	**5,486,552**	**3,594,472**	**4,367,323**	**3,850,667**

Source: NAMIS

An analysis of the volumes of the locally produced roots and tubers shows a decrease over the period 2007-2012, with the exception of sweet potato and dasheen which rose by 100 and 90 %, respectively. The volume of cassava, one of the crops of focus for increased production, was down by half from approximately 715,000kg to approximately 315,000kg. The volumes of the imported commodities dasheen, eddo and sweet potato doubled over the period.

In the case of sweet potato, it is evident that demand has grown, given that the volume of this commodity from both local and imported sources has increased from close to 800,000kg in 2007 to 1.5M kg in 2012. This growth provides a good platform for further development of this commodity which has shown an exponential increase in demand internationally.

5.0 Prices

5.1 Wholesale Prices

The wholesale prices for all the root and tuber crops, except sweet potato have increased over the period 2007-2012. In the case of cassava, the price has more than doubled, which was a reflection of the reduced volumes. Sweet potato prices have fluctuated during the period (Table 9), while yam prices have increased.

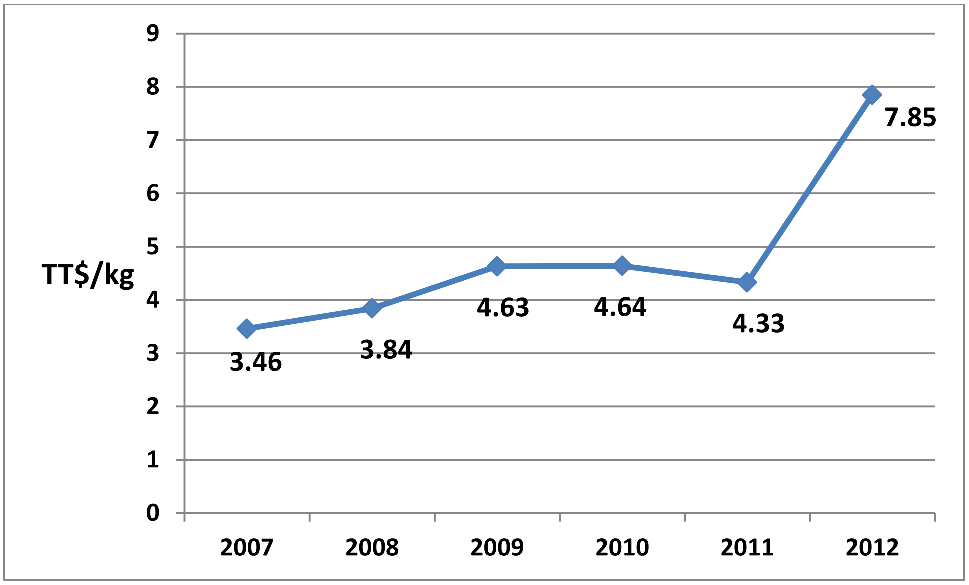
Table 9. Average annual wholesale prices (TT$/kg) for roots and tubers at the Northern Wholesale Market 2007-2012.

	Annual Wholesale Prices (TT$/kg)					
Commodity	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Cassava	3.46	3.84	4.63	4.64	4.33	7.85
Common yam	4.54	5.34	3.79	4.42	5.93	6.96
Imported yam	14.33	14.16	12.35	15.55	15.75	15.20
Dasheen (local)	6.21	8.97	5.91	10.56	6.27	7.69
Dasheen (imported)	5.82	10.33	6.16	10.95	6.25	7.61
Eddo (local)	7.08	8.84	7.71	11.65	8.58	10.80
Eddo (imported)	10.69	11.45	10.52	12.73	10.89	12.70
Sweet potato (local)	8.11	5.35	5.33	8.72	5.56	7.48
Sweet potato (imported)	11.32	7.87	6.50	11.09	6.75	9.73

Source: NAMIS

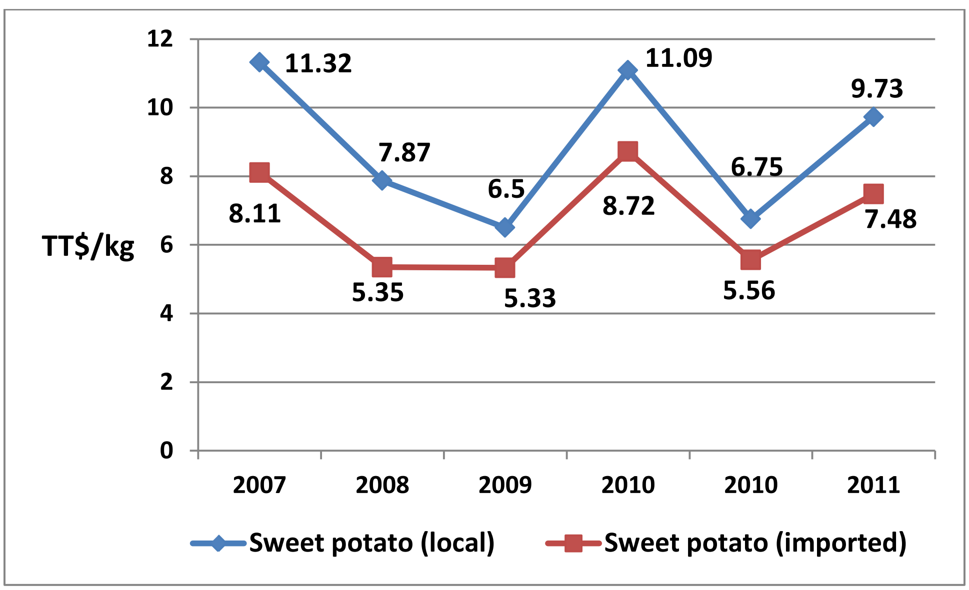
Figures 5-7 reflect the wholesale prices for cassava, sweet potato and yam from 2007 to 2012. Imported sweet potato was sold at a price of about TT$2.00 per kg in comparison to the local product. In the case of yam, the price for the imported product was three times that of the local product.

Figure 5. Wholesale prices (TT$/kg) for cassava 2007-2012.



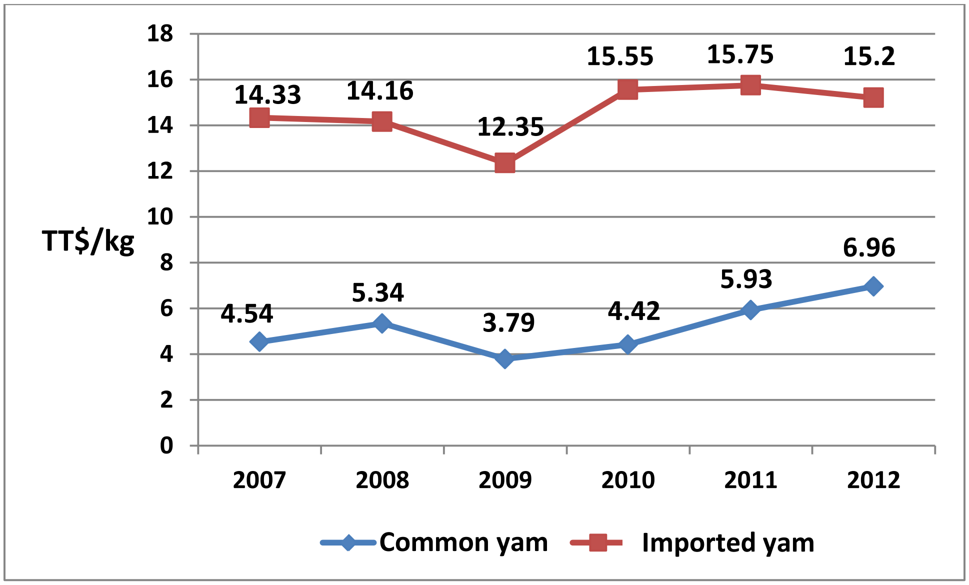
Source: NAMIS

Figure 6. Wholesale prices (TT$/kg) for local and imported sweet potato 2007-2012.



Source: NAMIS

Figure 7. Wholesale prices (TT$/kg) for local and imported yam 2007-2012.

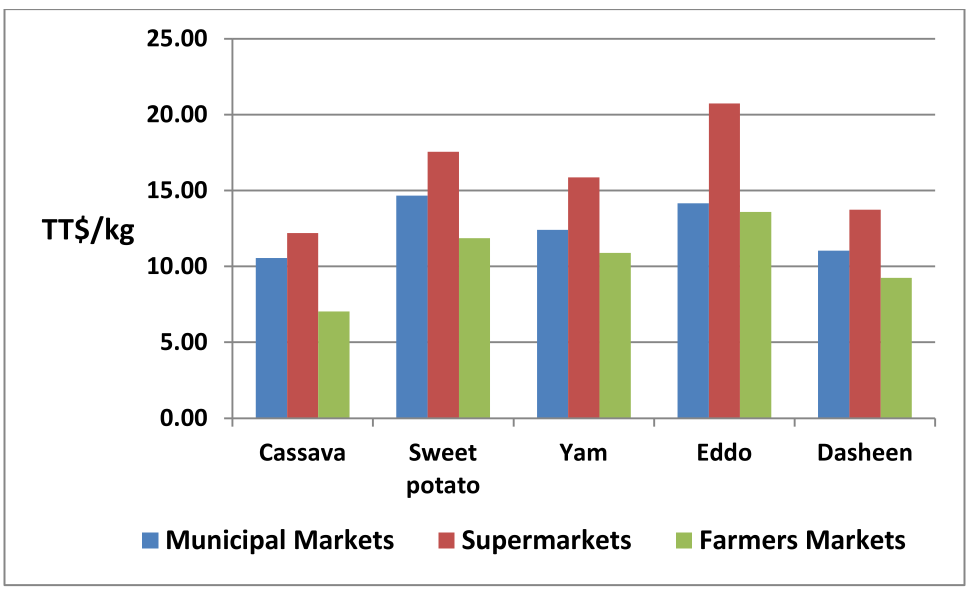


Source: NAMIS

5.2 Retail Prices

Data provided by NAMDEVCO show the retail prices for roots and tubers at various retail outlets in the country. Retail prices are lowest at the Farmers Markets and highest at supermarkets (Figure 8).

Figure 8. Retail prices for roots and tubers at retail outlets in 2012.



Source: NAMIS

6.0 Import Regulations

All of these products imported from within CARICOM are free of duties, but subject to the country's phytosanitary requirements. Imports from extra-regional suppliers are subject to a 40 % Common External Tariff, in addition to meeting phytosanitary regulations.

7.0 The Future of the Root Crop Industry

An analysis of the data reflects that apart from cassava, Trinidad and Tobago imports a substantial quantity of its root and tuber crops from CARICOM, mainly St. Vincent.

Local production is characterised by reduced acreages and decline in yields. One of the main reasons for this is that proper agronomic and management practices are not applied. In cases where there is a commercial orientation to production, yields have been much higher.

From a consumer perspective, changes in purchasing patterns have resulted in greater demand for convenience foods. In the case of root and tuber crops, the demand is for a product ready for cooking, hence the greater focus on value-added products. The continued role of TTABA and other processors in the development and promotion of value-added products will be crucial in stimulating demand.

Notwithstanding the move towards value-added products, the greatest potential for the future of the root and tuber crops may lie with import substitution of wheat flour and animal feed. The Common Fund for Commodities (CFC) in its Project Document titled "Increased Production of Roots and Tuber Crops in the Caribbean through the Introduction of Improved Marketing and Production Technologies" noted that In Caribbean countries, cassava is consumed by the traditional food sector (fresh and minimally-processed as farina and bammy) and there is limited diffusion of the fresh product into other industries such as livestock and manufacturing (flour and starch). This is an untapped area which represents an opportunity for developing the industry. CARICOM countries agreed in 2008 to explore options for substituting up to 15% of wheat-based flour imports with flour processed from regionally-produced cassava by 2013. A preliminary analysis of the data shows that in 2010, Trinidad and Tobago imported 67,300t of wheat at a value of approximately TT$204M. In addition, 51,365t of maize were imported at a value of approximately TT$149M. Substitution of these products with locally-grown root crops, especially cassava, will require further investigations with regards to feasibility.

To ensure local supplies of sufficient cassava, it is necessary to increase productivity by adopting improved varieties which are more resistant to pests and diseases, using a higher level of production technologies as well as improved physical infrastructure, marketing structure, marketing intelligence and processing technologies. These are some of the objectives of the Ministry of Food Production National Food Production Plan 2012-2015 (MFP, 2013) which has identified cassava and sweet potato within the staple group as commodities which will be the focus of development in the country.

To complement the Ministry's efforts, CARDI has implemented a project whose overarching objective is the increased production of root and tuber crops in the Caribbean through the

Introduction of Improved Marketing and Production technologies. The focus will be on increasing demand for fresh and value added products, development of the capacity of producers, and increasing yields through the provision of high quality planting materials.

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