

Food Prices and Food Security in Trinidad and Tobago

**Christian Romer Løvendal, Kristian Thor Jakobsen and
Andrew Jacque**

ESA Working Paper No. 07-27

September 2007

Agricultural Development Economics Division

The Food and Agriculture Organization
of the United Nations

www.fao.org/es/esa

ESA Working Paper No. 07-27

www.fao.org/es/esa

Food Prices and Food Security in Trinidad and Tobago

September 2007

Christian Romer Løvendal*

Agricultural Development

Economics Division

Food and Agriculture Organization

Italy

e-mail: ChristianRomer.Lovendal@fao.org

Kristian Thor Jakobsen

Agricultural Development

Economics Division

Food and Agriculture Organization

Italy

e-mail: Kristian.Jakobsen@fao.org

Andrew Jacque

Adviser to the Ministries of Agriculture of Trinidad and Tobago and of Grenada

e-mail: ajacque@hotmail.com

Abstract

The economy of Trinidad and Tobago is booming, in particular as a consequence of increased energy production and the historical high oil prices. Whilst general inflation has remained relatively low for much of the present economic boom, substantial increases in retail food prices have been observed, in particular since 2005. This paper looks at the development of retail food prices, its causes, the potential impact thereof in terms of food security and possible policy options for addressing this. It concludes that whilst households with low income are the groups most affected by the food price increases and will continue to be so in the wake of increasing international prices, it is unlikely that the price increases in isolation will throw off Trinidad and Tobago's path towards meeting the MDG 1 hunger target and bringing the share of undernourished people down to 6.5% by 2015. However, food security problems will remain, in particular related to overweight and obesity caused by unbalanced diets. Analysing the food marketing systems according to domestic production system (export versus domestic consumption), product type (fresh versus frozen and processed) and origins (imported versus domestic), the paper identifies potential causes of price increases. These include increases in price margins, international price changes and market conditions that vary greatly for different commodities, ranging from competitive to oligopolistic. Finally, the paper identifies areas of potential interventions related to direct price interventions, social protection, agricultural investment and trade facilitation.

Key Words: food security, inflation, price, vulnerability, Trinidad and Tobago, markets.

JEL: E64, Q17, Q18, O20.

* For any questions or comments, please contact ChristianRomer.Lovendal@fao.org.

This paper was prepared in support of the food security assessment work conducted by the FAO Caribbean Regional Food Security Programme and in particular the project "Improving Food Security in CARICOM/CARIFORUM countries (GTFS/RLA/141/ITA)". The project started in late 2004 and is being implemented by FAO in collaboration with the Caribbean Community (CARICOM) Secretariat with the financial support of the Government of Italy.

The authors are grateful to the Regional Management Unit of the project as well as to staff of the FAO Representation, Trinidad and Tobago, for support, documentation and comments provided during the preparation of this document. Comments on earlier versions of this paper were gratefully received from Lisa Martinez, Margarita Flores, David Dawe, Gregg Rawlins and Sharon Hutchinson.

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever of the part of the Food and Agriculture Organization of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

1 Introduction

In the midst of an economic boom, Trinidad and Tobago is grappling with how increasing inflation rates and in particular rising food prices will affect food security and the broader welfare of its population. Initially, the boom created only limited inflationary pressure, but this has changed in the past few years. In 2006, with the annual economic real growth rate being pushed towards two-digit, the overall inflation rate reached 10% and the year to year change in retail food prices moved beyond 20% during certain months.

The economy of Trinidad and Tobago is dominated by the petroleum industry and energy prices have had a determining impact on its development. The first oil boom (1974-1981), induced by an almost quadrupling of crude oil prices, resulted in average annual nominal gross domestic product (GDP) growth rates up to 27%, a fall in the unemployment rate from 15.3% to 9.9% and an inflation rate of 14% (Central Statistical Office, Trinidad & Tobago). With oil prices falling after 1981, the country saw a reversal of economic prosperity, partly resulting in the introduction of structural adjustment programmes.

Undernourishment has largely followed the general macro-economic trends during and between the oil booms. The seventies saw a decline in the share of undernourished¹ to a historical low level, followed by a steady increase up to the mid-nineties. Since then, both the number and the share of undernourished have steadily been declining and if the trend of the last 10 years can be maintained, Trinidad and Tobago will comfortably meet the Millennium Development hunger target of halving the proportion of undernourished by 2015 to 6.5%.

At the same time, the present level of inflation, largely driven by increases in the food component of the retail price index, is the source of concern to consumers and policy-makers. The concerns relate in particular to two issues: Are specific lower-income groups becoming less food secure in a period of strong economic growth and national prosperity? And secondly, is there a risk that the broader economic impact of inflation derails the national long-term objective of achieving GDP per-capita equal to that of developed countries by the year 2020?

This paper looks mainly at the first question, examining the reasons for recent increases in food prices in Trinidad and Tobago, the potential impact in terms of food security and possible policy options for addressing this. Following a review of food price developments, a brief overview of the socio-economic situation of Trinidad and Tobago, including an assessment of the overall food security situation, is provided. Section 3 discusses the links between food prices and food security. Section 4 seeks to locate the parts of the food system driving food price increases as well as the potential impact of these on low income groups. In the final section, potential policy implications for dampening food price increases and promoting food security are discussed.

2 Economic overview of Trinidad & Tobago

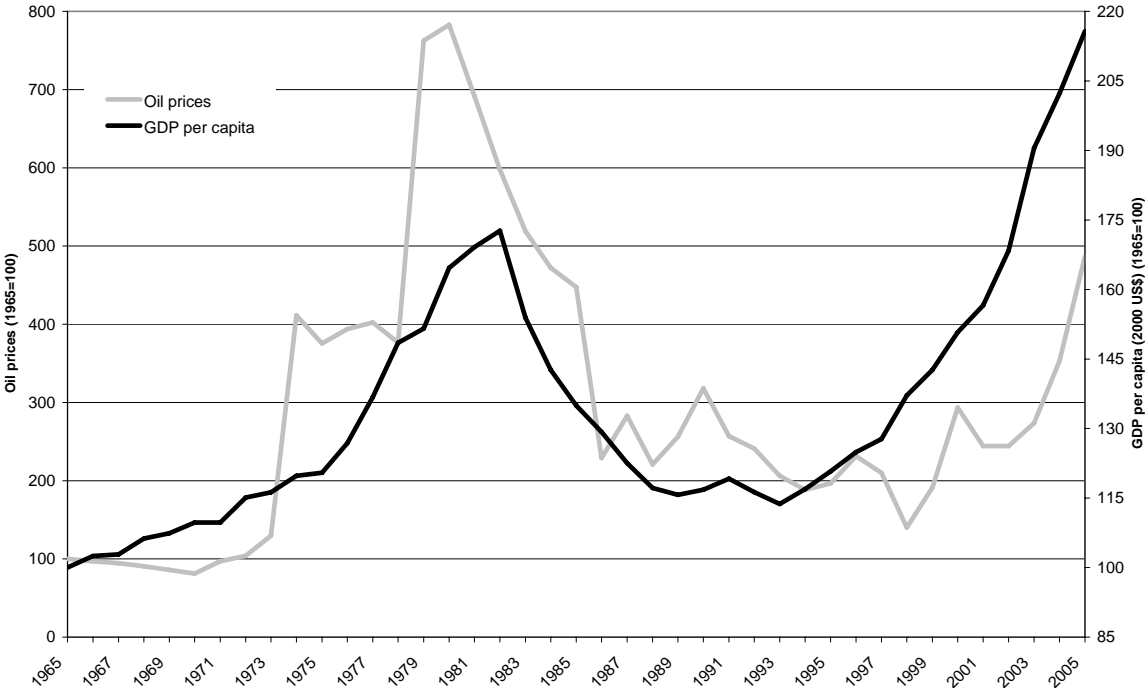
Trinidad and Tobago has a total population of 1.3 million people (2004) with around 95 percent of the total population living on the larger island, Trinidad. Its population consists of East Indian and African Descents together with a large group of mixed ethnicity. The

¹ Defined as the share of population eating less than 2100 Kcal/capita/day.

population is concentrated in urban areas and less than 10% of the land area is used for agriculture.

The overall economic performance has for several decades largely and increasingly been driven by the performance of the energy sector. Whilst the petroleum industry contributed 28 percent of the Gross National Product (GDP) in 1995, the corresponding share in 2006 was 41 percent. Measured in values (2000 prices), the output of the energy sector has increased by 260 percent since 1995. The increasing importance of the energy sector is both a result of increased production and processing of natural gas and increasing world energy prices (Central Bank of Trinidad & Tobago, 2006). Figure 1 illustrates the national economic dependence on international energy prices: GDP per capita has generally been going up with world energy prices (1974-1981 and 1993-) and shrunk with the contraction in global oil prices.

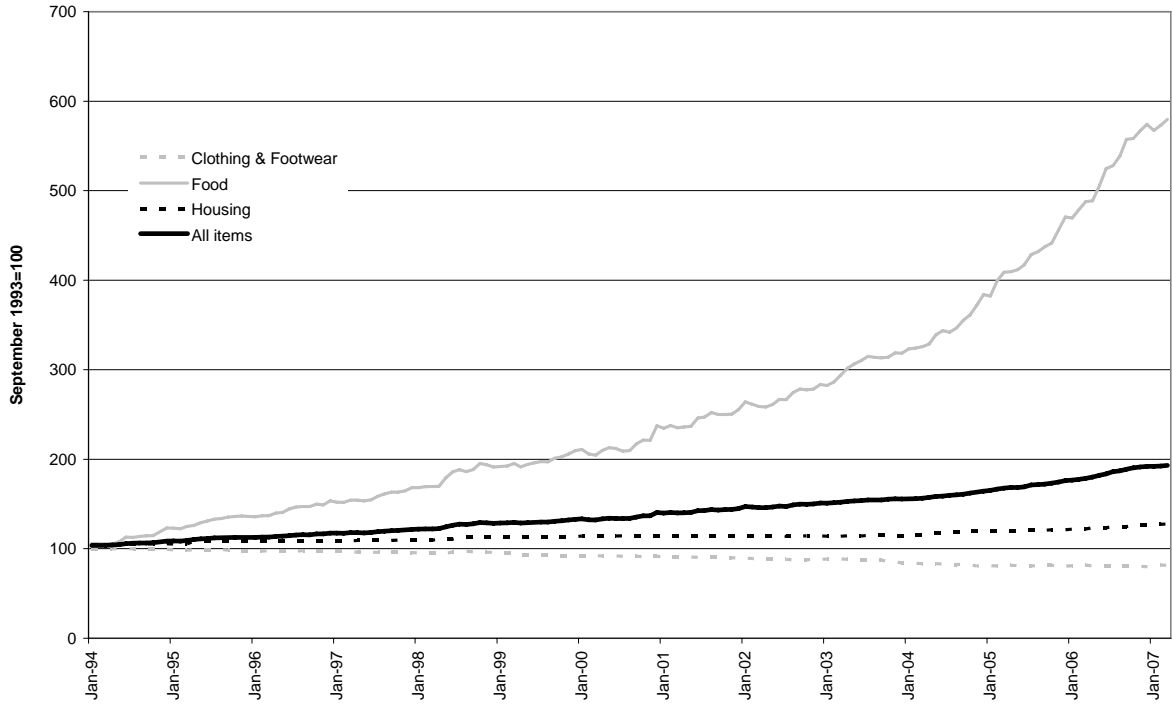
Figure 1: Oil prices (2005 prices) and GDP per capita, 1965-2005



Source: World Development Indicators, 2007 and BP, 2007

Whilst consumer prices have remained relatively stable during much of the present economic boom, the inflation rate has been increasing since 2005. Looking at the different components of the retail price index, it is clear that the development in different commodities has varied significantly. Thus, since 1994, food prices (making up 18% of the retail price index) have systematically increased faster than the price of other main items. Whilst the overall costs of the basket of goods included in the retail price index has less than doubled since 1994, food prices have increased five fold, as seen from Figure 2. More recently, the faster growth of food prices has become even clearer. From March 2006 to March 2007, the food component of the retail price index increased by 19 percent whilst the overall price index increased by 8 percent in the same period.

Figure 2: Changes in the Retail Price Index in Trinidad & Tobago, 1994-2007

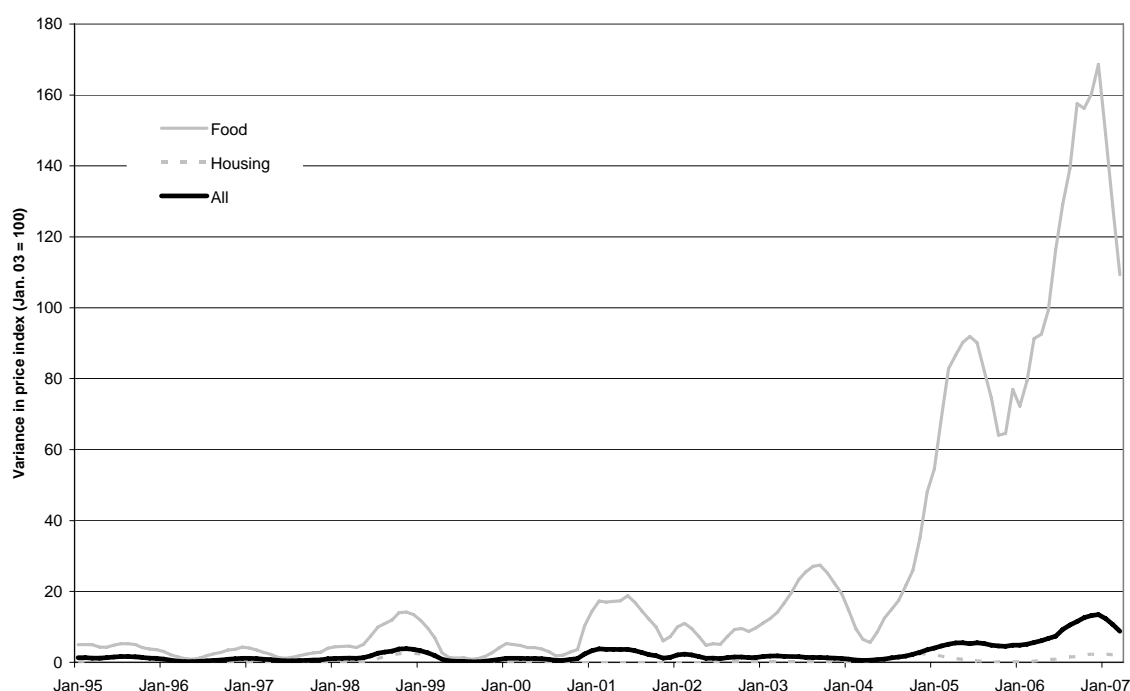


Source: Central Bank of Trinidad & Tobago Data Centre

Another indicator of price stability is the extent to which prices vary between months. Figure 3 shows the development in the price variance for the overall retail price index as well as for food and housing². The price variations in the overall index since 1994 have remained fairly stable, and this has also been the case for the food price index up to the beginning of 2003. Since then, food price instability has increased, suggesting that apart from increasing faster (which cause part of the increased variance), prices may also have become increasingly unstable.

² The price variance is calculated as the variance in the retail price index for the past 12 months.

Figure 3: Variance in the Retail Price Indexes in Trinidad & Tobago, 1995-2007



Source: Central Bank of Trinidad & Tobago Data Centre, own calculations

With an overall contribution of only 0.65 percent of the total GDP in 2006, agriculture - including the sugar industry - plays a minor role in the economy³. The contribution from agriculture has been decreasing in value (measured in 2000 prices) from 623 million Trinidad and Tobago dollars in 1995 to 569 million in 2006. Notably, export oriented agriculture and the sugar industry are the only sectors where output value actually fell over the past 10 years (Table 1).

Table 1: Sector-wise GDP in values (millions of TT\$) and share of total, 1995-2006 (2000 as base year)

	1995		2000		2006	
	Actual	Share	Actual	Share	Actual	Share
Overall agriculture	623	2%	697	1%	569	1%
-Export agriculture	27	0%	21	0%	15	0%
-Domestic agriculture	381	1%	378	1%	438	1%
-Sugar industry	215	1%	299	1%	116	0%
Petroleum industries	9,953	28%	16,073	31%	35,816	41%
Manufacturing	2,933	8%	3,625	7%	6,280	7%
Distribution services	5,356	15%	8,402	16%	9,584	11%
Construction	2,814	8%	3,833	7%	7,374	8%
Finance, insurance and real estate	4,292	12%	7,305	14%	12,670	15%
Transport, storage and communications	2,633	7%	4,410	9%	6,363	7%

Source: Central Statistics Office, Trinidad & Tobago

Whilst the economic importance of agriculture is limited in terms of its contribution to GDP, it remains important in terms of employment. The relative share of the agricultural labour force has diminished over the past 40 year, although more because of the doubling of the

³ This does not include the agro-processing industry, which makes up a little under half the manufacturing GDP.

overall labour force than because of dramatic falls in the absolute number of people working in agriculture. Thus, the agricultural labour force consisted of 47.000 people or 8 percent of the total labour force in 2005, only 13.000 less than 40 years earlier.

Table 2: Labour force (in 1,000), 1965-2005

	1965	1975	1985	1995	2005
Total	299	364	456	520	610
In agriculture	60	54	50	51	47
Agriculture as a share of total	20%	15%	11%	10%	8%

Source: FAOSTAT

Looking at the agricultural sector from a landholding perspective, the latest agricultural census suggests that there were 19,143 farmers in 2004, the vast majority (95 percent) being on Trinidad. Around 75 percent of these were engaged in crop activities, while only around 10 percent of the farmers concentrated fully on livestock. Most holdings are relatively small: a little less than one third had access to less than one hectare of land and only 12 percent had access to more than 5 hectares (Central Statistics Office, Trinidad & Tobago, 2005).

Trinidad & Tobago's GDP per capita was 9,321 USD in 2004 (2000 prices), only slightly below that of Barbados. The country has a significant surplus on the current account balance, unique for the countries presented in Table 3 and more broadly the countries in the region. Trinidad & Tobago ranks 57 out of 177 in the Human Development Index, below Barbados (30), but above Jamaica (98) (UNDP, 2005).

Table 3: Economic indicators for Trinidad and Tobago, Barbados, Belize, Guyana and Jamaica, 2004

	Trinidad and Tobago	Barbados	Belize	Guyana	Jamaica
GDP (US\$ bn)	12.2	2.8	1	0.8	8.9
GDP per capita (current US\$)	9381	10401	3734	1047	3356
Consumer price inflation (in %)	3.7	1.4	3.1	4.7	13.6
Current account balance (% of GDP)	12	-12	-14	-3	-6
External debt, total (DOD, US\$ bn)	2.6	0.7	1	1.3	6.4

Source: World Development Indicators, 2007

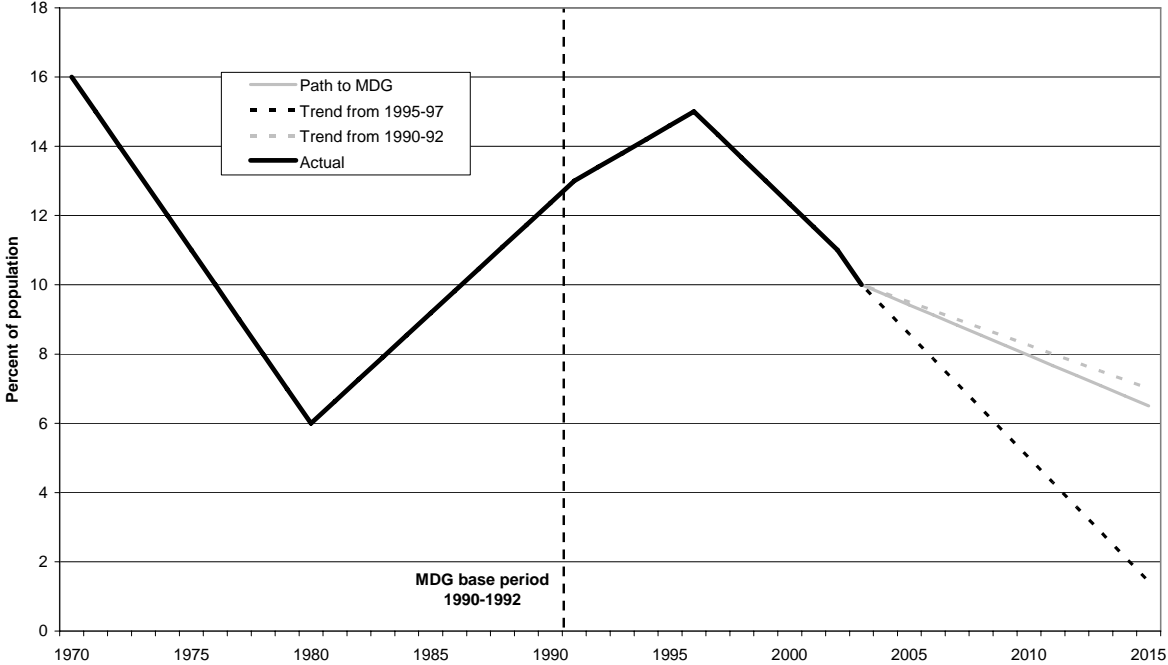
The prevalence of undernourishment⁴ in Trinidad & Tobago has varied from 16 percent of the population to around 6 percent during the past 35 years. It reached its lowest level in 1980 as GDP per capita was peaking, only to steadily increase simultaneous with the economic downturn of the eighties. The start of 1990s saw a prevalence around 13 percent that continued to increase until it peaked in the mid 1990s at 15 percent or around 0.2 million people.

In order to reach the hunger target of the Millennium Development Goal 1, Trinidad and Tobago needs to reduce the proportion of undernourished to 6.5 percent by 2015. If the trend from 1996 continues, the goal could be reached before 2008, as evident from Figure 4. A

⁴ Defined as the share of the population with a food intake that is insufficient to meet dietary energy requirements continuously (www.fivims.net).

more conservative estimate based on the trend since 1990-92 shows that Trinidad & Tobago will still more or less reach the goal in 2015.

Figure 4: Prevalence of undernourishment in Trinidad and Tobago and the Millennium Development Goal 1 Hunger Target

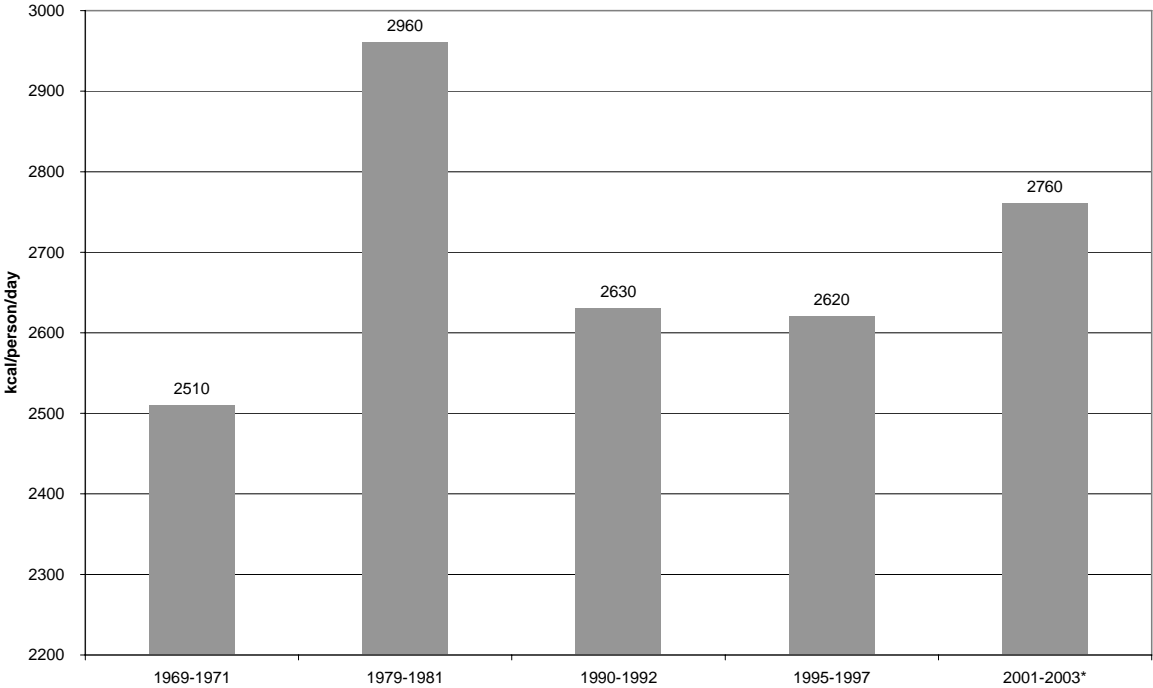


Source: FAOSTAT

The undernourishment measure is closely linked to food availability. Reductions in the prevalence of undernourishment in Trinidad and Tobago have been caused by a significant increase in food supply and in particular imported food. Measured in the amount of calories available for human consumption per day per person, the food supply has increased by 6 percent since 1995, even if it still remains below its peak level from 1979/81. As seen from Figure 5, the average level of energy available has remained constantly above the recommended level (1860 Kcal/capita/day in 1969/71 and 1950 kcal in 2002/2004), pointing to the fact that at national level, total food available is more than sufficient to keep everyone food secure. It should also be noted that given the aggregate nature of this measure and its calculation, it does not pick up the effects of short term inflation⁵.

⁵ FAOSTAT is currently in the process of re-estimating the undernourishment figures. The data used here are pre-adjustment data.

Figure 5: Daily Energy Consumption in Trinidad & Tobago, 1969/71 – 2001/03

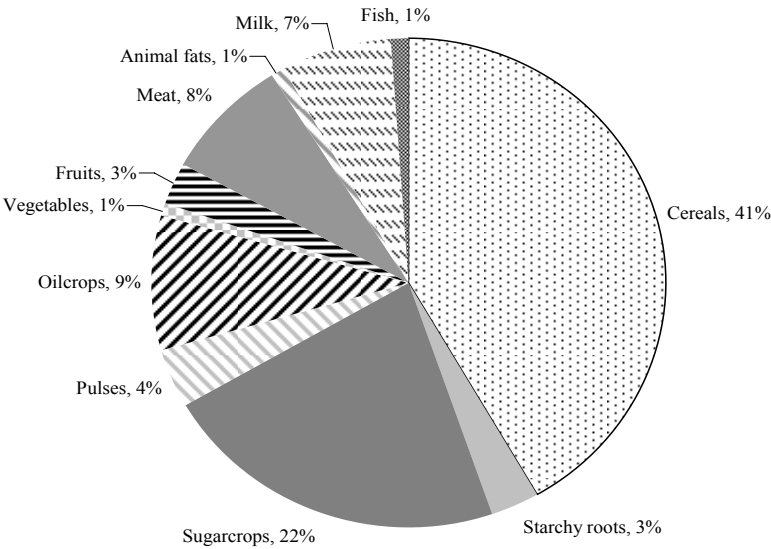


Source: FAOSTAT

*Provisional

Figure 6 provides information on the dietary composition of the overall food consumption in Trinidad and Tobago for the period of 2003/05. The largest contributors to daily calorie intake were cereals (41%), sugar crops (22%), oil crops (9%) and milk (7%), which in combination provide more than three-quarters of calorie intake. Fruits and vegetables make up only 3% and 1% of the food consumption, well below recommended levels.

Figure 6: Supply of Calories per caput, Trinidad and Tobago, 2003/05



Source: FAOSTAT

Food security goes much beyond the question of energy intake. Individuals require a balanced diet in terms of macro- and macro-nutrients to maintain a healthy nutritional status. In many middle-income countries, the food security challenge shift from insufficient energy consumption towards ensuring balanced diets to prevent the range of non-communicable diseases that poor nutritional status can cause.

Anthropometric measurements such as stunting and wasting (measuring chronic malnutrition), have remained on a relative low level since the 1980's. At that time, prevalence of stunting among 0-5 years old children⁶ was found to be low (under 2 percent) and the prevalence of wasting for the same age group⁷ was found to be at a moderate level of around 6 percent (FAO, 2003).

At the other end of the scale, however, obesity and overweight is affecting larger proportions of the population. In 1999, 16.8 percent of the population above 20 years were obese⁸ with the prevalence among women being twice as high as for men. Another 31.4 percent of the adult population were overweight, the prevalence being slightly higher among women. Interestingly, overweight and obesity seems less of a problem amongst the younger population. In 1999, 4.6 percent of people between 13-19 years were found to be overweight and another 6.3 percent were found to be at risk to become overweight.

Another study on the nutritional transition in Trinidad and Tobago (Gulliford et al, 2002) confirmed the high rates of obesity, suggesting that around 55 percent of the male population and 62 % of the female population were either overweight or obese. Using the US food security measurement⁹, the study also suggested a food insecurity level of 25 percent, with food insecurity being associated with low household income, physical limitations of the household and low educational attainment. Furthermore, the study found that food insecure people were less likely to be frequent consumers of fruits, green vegetables and salad.

3 Links between food prices and food security

Research on the linkages between food price changes and food security has focused mainly on low-income/poor countries, looking mainly at national food security or household food security. Work has evolved around three major themes, namely the impact of prices on nutrition and labour supply, the cost of food price instability to households caused by increased risk and uncertainty, and thirdly, how food demand and real income are affected by food price changes.

For a mid-income net food importing small island economy like Trinidad and Tobago, the question of how changing prices influence income and consumption and thereby food security is of particular importance. However, the question of impact of increased risk is also of relevance, in particular to the agricultural sector.

⁶ Low height for age, indicating chronic malnutrition.

⁷ Low weight for height, indicating chronic or acute malnutrition.

⁸ Overweight is defined persons with a Body Mass Index (BMI) above 25, whilst obesity is defined as a BMI>30.0. BMI is calculated as a persons weight in kilograms divided by the square of the height in metres (kg/m²). For details, see http://www.who.int/bmi/index.jsp?introPage=intro_3.html.

⁹ For details on the US food security measure, which is a subjective measure of household food security based on 18 questions, see <http://www.fns.usda.gov/fsec/Measurement.htm>.

Increased food price instability/risk can lead agricultural producers to adopt risk-reducing strategies such as shifting towards more stable and lower value crops, reducing investments in new technologies or reduce use of purchased inputs. Such strategies can lead to inefficient levels of investments and/or resource allocation and can also reduce competitiveness of the agricultural sector in Trinidad and Tobago.

It is also argued that food price fluctuations can lead to macroeconomic fluctuations, which may dampen investments and reduce economic growth. While the costs are difficult to measure directly, Timmer (2002) estimates that rice price stabilization contributed a half to one percentage point to the overall growth of the Indonesian economy in the 1970s. In an attempt to translate the gain of price stability into the welfare cost of price instability, Myers (2006) estimates that given the effect of price stability on economic growth, the welfare cost of price instability would be around 5-11% of economy-wide income per year in the case of Indonesia. This is a significant amount, but it should be noted that other studies have not been able to find any significant link between food price instability and economic growth (Kannapiran, 2000).

In standard welfare analysis it is assumed that households choose between various combinations of food and other consumption goods. For non-poor households this implies trading off preferences for food against other types of consumption goods. On the other hand, poor and/or food insecure households face a significant risk of food consumption falling below a critical level in regards to health and survival. The existence of such a level can be considered to imply discontinuous preferences because malnutrition and in the worst case starvation is a state any household will avoid at any cost. However, standard welfare analysis assumes continuous preferences and will therefore not be able to measure the true costs of price instability if the probability of survival is reduced by a price increase. Myers (2006) estimates¹⁰ that if higher food prices reduce the probability of survival by one percent, the households would need to have their incomes compensated by five percent in order for them to be as well off as they would have been, had they faced a one percent higher probability of survival. The relative nature of this result illustrate the problem: can one expect that a household living on the margin of survival would demand 5 percent of their income in order to have their chance of survival further reduced? The result is also strictly theoretical and assumes a certain risk aversion in order to hold¹¹.

As premature death is the most severe outcome of inadequate calorie intake it is argued that the costs of food price instability could be high for very poor households because very high food prices worsen the nutritional status to a level where labour productivity is seriously affected (World Bank, 2005).

In a study of the impact of structural adjustment policies in Jamaica in the early 1990's, Handa and King (2003) look at the connection between food prices and food security, in particular in terms of the nutritional status of children. The study uses cross sectional data sets collected during the period where Jamaica liberalized its exchange rate and therefore experienced a significant devaluation leading to lower purchasing power, general inflation and higher food prices. They find that both the exchange rate and food price inflation had a significant effect on the short-term nutritional status of children, but that the effects seem to fade away over the longer term. The study on Jamaica also conclude that rural children were

¹⁰ Using an expected utility function that incorporates the value of life.

¹¹ The result is based on the equation: $m_s = m + (\pi^* - \pi) / (\pi(1-R))$ where m is the income needed, π^* and π are the probabilities of surviving with and without price stabilization and R is the household's relative risk aversion.

less affected than children living in urban areas probably due to better access to home grown food.

What happens to food consumption at household level when food prices change depends on the commodity type and can be analysed by looking at demand elasticities for food in relation to changes in income and prices. Studies of this typically find that the own-price elasticities¹² for basic food items, such as cereals, are quite low because they cannot be substituted by other food items. In contrast, the price elasticities for other food items, such as meat, are usually high, meaning that households make substantial shifts between expensive and cheaper food items when prices increase. In general, price increases for some food groups can lead to real income falls for poor households because price increases for inelastic food items will lead to higher relative spending on these items¹³. This can in some circumstances result in a drop in calorie intake for households spending a large share of their income on food and with limited ability to smoothen consumption. This is typical for households spending high shares of their income on food and is seen e.g. Abdulai and Aubert (2004), where caloric consumption in Tanzania dropped when the price of either maize or rice went up. Still, a price increase for an inelastic food item does not necessarily need to cause a drop in calorie intake if the household responds by maintaining consumption of an (energy-intensive) inelastic good at the cost of some more elastic food items such as meat, vegetables and fruit. Thus, overall calorie intake may be maintained, but at the expense of the dietary diversion, which can mean less access to important nutrients, vitamins etc. and thus affect nutritional status.

In conclusion, how changing food prices affect food security depends on the characteristics of the country, the commodity and the particulars of its economy and food system. Whilst it is difficult to measure the exact costs of food price instability, it has been argued that the total macroeconomic costs are likely to be quite small for countries that are diversified in its production and food consumption (World Bank, 2005), which would be the case for Trinidad and Tobago. Studies done at the national level conclude for the most part that on average, calorie consumption is generally not affected by changes in food prices as households are able to smooth consumption over time. However, some household level studies suggest that for poorer households, the level of food prices can affect nutritional outcomes (Block et al, 2004).

4 The Food Market Systems in Trinidad and Tobago and Implications for Food Prices

As earlier shown, retail food prices have consistently grown faster than the cost of other consumables in Trinidad and Tobago since the mid-nineties and increasingly so over the past few years. In search for reasons therefore, we first look at main international commodity prices as well as price development in the nearest comparable country, Barbados.

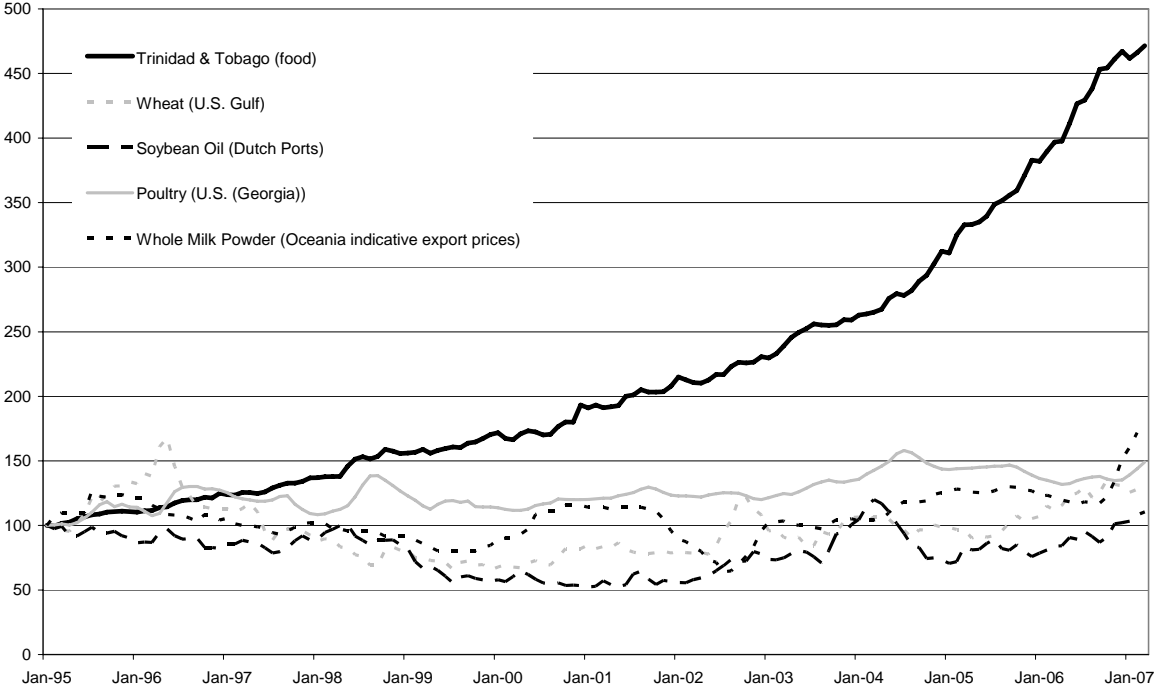
In the absence of an international price index with a composition similar to the CPI for food for Trinidad and Tobago, we look at the development in international export prices for four major food commodities, i.e wheat and milk powder, which are fully imported, soybean oil, which is partly imported, partly domestically produced, and a major domestic production

¹² Defined as the percentage change in consumption of a commodity in the case of a 1 percent change in its price.

¹³ As households cannot substitute to less expensive commodities.

commodity, poultry¹⁴. As seen from Figure 7, retail food prices in Trinidad and Tobago have consistently grown faster than the international export prices of these four main commodities.

Figure 7: Development in Trinidad & Tobago’s Food Retail Price Index and international export prices for selected commodities, 1995-2007



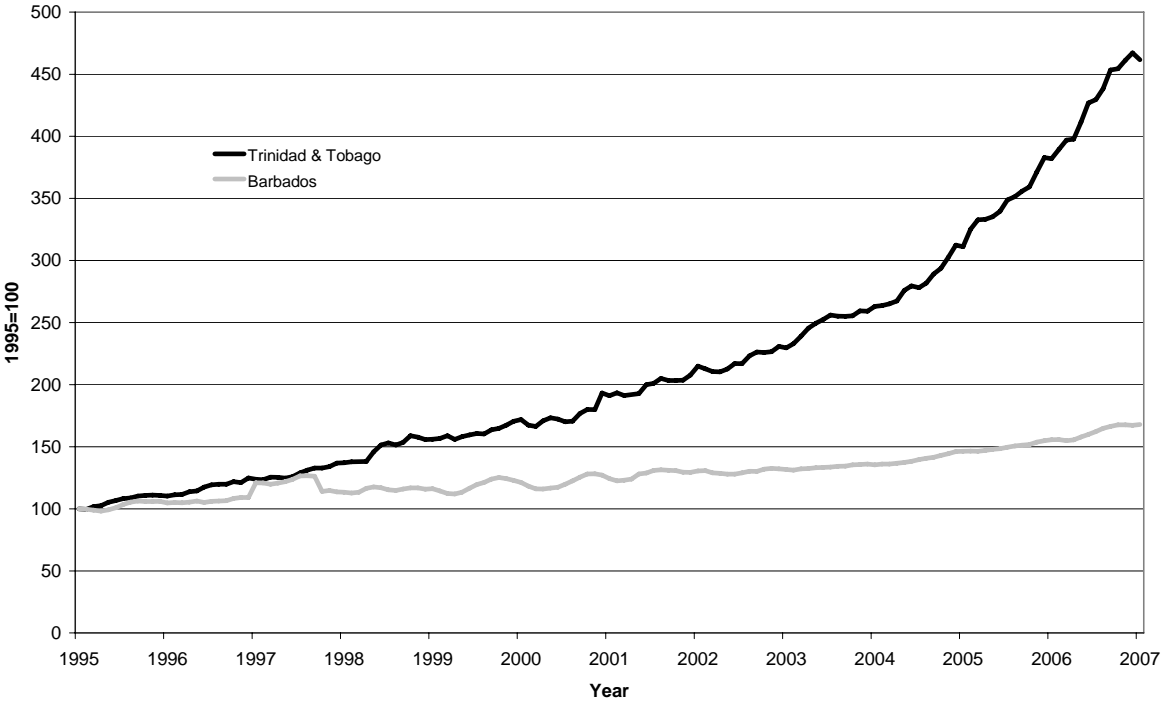
Source: Central Bank of Trinidad & Tobago Data Centre, IMF and FAO

To see if the price changes are of more regional nature, food price developments in Trinidad and Tobago and Barbados are compared, given the similarity of the two countries in terms of economic development and (high) levels of food import dependency. As clearly indicated by Figure 8, whilst retail food prices have risen more than 350% in Trinidad and Tobago since 1995, the increase in Barbados has been a more modest 68% in the same period¹⁵.

¹⁴ These commodities made up around half of the total energy per capita/day in 2003/05.

¹⁵ Part of this may have been catching up with the Barbados price level.

Figure 8: Comparison of retail price index (food) for Barbados and Trinidad & Tobago, 1995-2007



Source: Central Bank of Trinidad & Tobago Data Centre and Barbados Statistical Service

Structure of the food marketing systems in Trinidad and Tobago

To better understand potential domestic causes of retail food price increases, this section looks at the national food marketing systems.

The food marketing systems in Trinidad and Tobago is comprised of an interrelated set of systems and actors that involve farmers, processors and importers at one end, consumers and food service businesses at the other end, and wholesalers, distributors and packing houses in the middle. The systems provide consumers and other end-users with a range of fresh, frozen and processed foods while simultaneously providing farmers, processors, importers and others with avenues to dispose of supplies. The structure of the specific commodity marketing system varies depending on the characteristics of the domestic production system (export versus domestic commodities), characteristics of the product (fresh versus frozen and processed) and origin of the product (imported versus domestic).

Trinidad and Tobago is a net food importing country with a high level of import dependence. As seen from Table 4, which shows import dependence for a range of food commodities, high dependency include most of the staple food items – cereals, rice, oils, roots, tubers, pulses – as well as certain vegetables. Trinidad and Tobago also has high import dependence in meats (beef, mutton, turkey etc.) and in temperate fruits. The country has low import dependence values in certain vegetables (tomatoes, cabbage, cauliflower etc), in tropical fruits and in chicken meat, and to some extent pig meat.

Table 4: Import dependence for selected food commodities (2000-2002)

Product Description	Import Dependence	Product Description	Import Dependence
Cereals & Derived Products		Other Fruits & Derived Products	
Maize	96.7%	Peaches and Nectarines	100.0%
Flour of Maize	85.0%	Grape Juice	100.0%
Oil of Maize	100.0%	Grapes	100.0%
Infant Food	100.0%	Apples	100.0%
Wheat	100.0%	Raisins	100.0%
		Grape Juice	100.0%
Rice & Rice Products		Bananas	14.6%
Milled Paddy Rice	79.8%	Pears	100.0%
Roots/Tubers & Derived Products		Cantaloupes & other Melons	-6.3%
Potatoes	100.0%	Pineapples	-1.1%
Sweet Potatoes	71.5%	Citrus Fruit nes	-0.0%
Ginger	76.2%	Fruit Fresh nes	-0.6%
Roots and Tubers nes	16.3%	Oranges	-0.6%
Sugar Crops & Derived product		Lemons and Limes	-0.0%
Sugar (Centrifugal, Raw)	-22.9%	Grapefruit and Pomelos	0.0%
Pulses & Derived Products		Citrusjuice Single-Strength	0.0%
Cow Peas, Dry	34.0%	Beverage Crops	
Lentils	100.0%	Cocoa Powder and Cake	76.5%
Peas, Green	100.0%	Chocolate Products nes	100.0%
Nuts & Derived Products		Tea	100.0%
Cashew Nuts Shelled	100.0%	Spices & Condiments	
Almonds Shelled	100.0%	Pepper, White/Long/Black	100.0%
Oil-bearing Crops & Products		Ginger	76.2%
Soybeans	100.0%	Nutmeg, Mace, Cardamoms	3.0%
Groundnuts in Shell	100.0%	Feed Stuffs	
Groundnuts Shelled	100.0%	Compound Feed	31.0%
Oil of Coconuts	25.8%	Pet Food	100.0%
Oil of Palm	100.0%	Large Ruminants & Products	
Copra	9.6%	Beef and Veal	75.9%
Oil of Soya Beans	4.6%	Whole Milk, Evaporated	100.0%
Vegetables & Derived Products		Dry Whole Cow Milk	100.0%
Cabbages	29.0%	Cheese (Whole Cow Milk)	100.0%
Tomato Paste	100.0%	Small Ruminants & Products	
Cauliflower	47.0%	Mutton and Lamb	88.6%
Onions and Shallots, Green	100.0%	Goat Meat	95.3%
Garlic	100.0%	Pigs & Products	
Carrots	100.0%	Pig meat	37.8%
Lettuce	9.3%	Poultry & Products	
Eggplants	-14.5%	Hen Eggs	97.4%
Sweet Corn Prep. or Pres	100.0%	Turkey Meat	97.3%
Vegetables Fresh nes	6.6%	Chicken Meat	3.5%

Source: Calculations from FAOSTAT and COMTRADE database

Note: Import dependence is calculated as ((Import-export)/consumption)*100

Looking at this from the importing side, Table 5 presents the structure of Trinidad and Tobago's food imports. The data for 2002-2003 indicate that 98.8% of the value of food imports was captured within 18 of the 24 categories at the 2 digit level of the Harmonised System (HS) of trade classification. The category with the highest value of imports was 'dairy products and birds' eggs with 12.6% of the value of total food imports. This was followed by cereals with 10.1%.

Table 5: Structure of Food Imports – Distribution of Food Import Values, 2002/03

Commodity group	% of food import value	Commodity group	% of food import value
Dairy products; birds eggs	12.6	Sugars	5.6
Cereals	10.1	Meat	5.5
Miscellaneous edible preps	8.1	Animal/vegetable fats	4.2
Beverages	7.9	Product of the milling industries	3.7
Preparations of vegetables	6.9	Edible fruit/nuts	2.7
Oil seeds	6.3	Preparations of meat/ fish	2.5
Food residues	6.2	Cocoa	2
Edible vegetables/roots	6.1	Tobacco	1.7
Preparations of cereal	5.8	Coffee/tea/spices	1

Source: COMTRADE database, UN Statistical Division

Trinidad and Tobago is a significant producer of agro-processed products. The value of food and agriculture products imported into Trinidad and Tobago in 2002-2003 exceeded the value of exports by 52%, a low value relative to other food importing CARICOM¹⁶ countries. This reflects to a large extent the strength of the agro-processing sector, which accounts for nearly half of manufacturing GDP and is a major contributor to the non-oil exports of the country. On the fresh produce side, the country receives 35% of the CARICOM intra-regional imports but only contributes 3.7% of intra-regional exports (Best, 2006).

Trinidad and Tobago is the second leading supplier of agriculture and food products in the CARICOM region with approximately 7% of supplies (behind the USA with 50%). When trade among the CARICOM countries is examined, Trinidad and Tobago accounts for more than 45% of food supplies. However, the processing sector has a high dependence on imported inputs and even where it uses of domestic raw materials, there is high dependence on imported inputs to produce these raw materials.

The large and small farm crop production systems produce for different markets (export versus domestic) and use different marketing structures. The traditional export commodities of sugar, cocoa, coffee, copra and citrus, typically produced by larger farms, have assured marketing (processing or export) arrangements managed by well organized industry associations. Examples of industry organizations and associated marketing arrangements include the Cocoa and Coffee Industry Board (CCIB), which has the legal mandate for purchasing cocoa beans from farmers, and the export of cocoa beans, the Cooperative Citrus Growers Association (CCGA) and the Coconut Growers Association (CGA) which operate processing plants. In the case of cocoa, coffee, copra, and sugarcane, the State guarantees a

¹⁶ The CARICOM member states are Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago.

minimum price. Small farms typically produce fruits, vegetables, root crops and other commodities, which are directed to the domestic market. These domestic commodities are not supported with guaranteed prices or assured marketing arrangements. In the case of locally produced vegetables, the majority of farm output is sold through the two wholesale markets operated by the State-owned marketing corporation. Some vegetables are also sold to packing houses and distributors who supply supermarkets and hotels.

The wholesale markets facilitate the operations of bulk buyers and vendors, who purchase and later resell in the public retail markets or private retail outlets. The majority of fruits and root crops are sold directly to wholesalers who clean and distribute them. In addition, a significant amount of the fruits and root crops are sold direct to consumers by farmers from roadside stalls and small trucks.

Several of the main companies in the livestock industries have private led marketing arrangements. The dairy farmers have a guaranteed price and assured marketing arrangements with the largest processing company, Nestle Trinidad and Tobago Ltd. Beef, most of which is a by-product of the dairy industry, is marketed by farmers to independent butchers who then retail in the public markets. Marketing of poultry, the most developed livestock industry in the country, is driven by firms that provide production contracts to farmers, own processing plants and have marketing arrangements with supermarkets and restaurants (See Box 1 for a more detailed description of the marketing system for poultry). The swine industry is dual in nature. The majority of production comes from a few large farms that are contractually tied to processing plants, which produce a range of sausages, hams etc. The small pig farms generally sell to butchers who target the retail fresh market. Small ruminants (sheep and goats) are slaughtered by farmers or butchers and then retailed from roadside stalls and informally through e.g. neighbours.

Box 1: Retailing and Pricing of Broilers in Trinidad and Tobago

50% of broilers are sold through pluck shops, which operate under conditions close to perfect competition - prices are determined by demand and supply as the birds must be sold every week and cannot be returned to the farm.

25% of the broilers are sold to quality supermarket chains and fast food chains, with another 20%-25% sold to the independent supermarkets and smaller groceries, which mostly sell whole frozen broilers. The fast food chains are continuously negotiating for better prices with the meat supply companies since there is intense competition in their business. Supermarkets adjust the price of chilled chicken and chicken parts to ensure that the products leave their shelves between deliveries. Moreover, supermarkets aim to achieve a margin on categories and across categories. Like the processors, they aim for a weighted average price of the whole bird and not a margin on each different cut. Thus, some categories and products are used as loss leaders to attract customers. The supermarkets have little interest in frozen products and imported leg quarters. These are used as a stop gap measure for shortages of chilled product. Interestingly, in spite of the debate on prices, the cheapest products offered by the processors - whole chilled birds and economy mixed parts packs - are bought in the smallest quantities.

Finally, cost of production in the broiler industry is heavily influenced by international markets as grain, chicks and medication are imported.

Robert Best, the Caribbean Poultry Association

There is a pronounced dichotomy in public policy within the agricultural sector in respect of production systems. The traditional export commodities are supported by a range of risk reduction instruments, including guaranteed prices, marketing and/or processing arrangements (along with Government supported industry associations, input supply channels and access to financing), while the output of smaller farms receive little support. Dairy milk receives the guaranteed price and marketing arrangements similar to the large-farm export commodities. Farm systems producing for the domestic market have no guaranteed prices on outputs and lack the risk reduction support measures offered to the export commodities. This dichotomy also extends to agricultural research programmes, though less pronounced. Agricultural research is fairly well developed and supported for cocoa, coffee, sugar and citrus but much less so for fruits, root crops and even less for vegetables. Particularly for vegetables, technology support is often provided by the input suppliers who have links to chemical and equipment companies located overseas. At the same time, the Government provides fairly effective crop and livestock protection services for all commodities and delivers support services (such as certification and negotiation of agreements) towards export of fresh produce.

Local crops (primarily vegetables and root crops) produced for domestic consumption are marketed in two public wholesale markets in Trinidad¹⁷, and one in the island of Tobago. The wholesale markets in the island of Trinidad are maintained and managed by the National

¹⁷ One in the north (Macoya) and one in the south (Debe). On Tobago in Scarborough.

Agricultural Marketing and Development Company (NAMDEVCO), a state agency. In addition, there is a system of public retail markets managed by the Local Authorities (Regional and Municipal Corporations). In Tobago, the wholesale market operates a few days of the week from the same compound housing the retail market. The wholesale and retail markets in Tobago are managed by the Marketing Division of the Tobago House of Assembly.

The food system in Trinidad and Tobago includes several packing houses operated by wholesalers. These packing houses purchase in bulk, clean, package and supply the large buyers such as supermarkets and exporters. A few supermarket chains, notably the Hi-Lo Food Stores chain, operate packing house facilities in which produce is procured from farmers and then sorted, packaged and delivered to its supermarkets. The larger high-end supermarkets tend to have pricing systems that reflect efforts to sell quality and brand and therefore prices can be significantly above prices at the public retail markets.

The supply to processors are generally ensured through contractual arrangements with farmers or from purchases made by processors during periods of excess supply. More recently, NAMDEVCO has introduced farmers' markets to encourage direct linkage with consumers and better prices for both parties. NAMDEVCO operated farmers' markets exist in three locations in Trinidad.

Imported fresh produce (mainly root crops, bananas, vegetables and fruits) from neighbouring CARICOM countries use the same marketing channels as the domestic fresh produce. Cargo boats transport produce for 'Hucksters' or 'Traffickers' mainly from the islands of Grenada, St. Vincent and Dominica to the CARICOM jetty area in the harbour of Port of Spain. The produce is offloaded and sold directly to wholesalers or taken to the wholesale and retail markets in Trinidad. Fresh produce from other CARICOM countries therefore supplements and competes with produce from Trinidad and is an important factor in price formation for several commodity items.

Domestically produced and processed products are channelled through a system of distributors. Some processors (such as producers of biscuits, bread, alcoholic and non-alcoholic beverages) have their own distribution systems that supply wholesale and retail food stores. Many other processed items, including imported items, are channelled through a system of importers who also distribute directly to the supermarkets and retail food stores.

Imported frozen, processed and temperate fresh foods largely utilize different marketing distribution channels to that for fresh domestic and tropical produce. Imported frozen, processed and temperate fresh produce are brought in by a small number of importers. For any particular product, the number of importers is generally between one and three, thus potentially creating a monopolistic or oligopolistic market situation. The importers generally have wholesale or food distribution operations and supply retailers (including, in the case of fresh temperate produce, the owners of roadside stalls) and supermarkets or through retail outlets controlled by the wholesalers.

The majority of retail sales of fresh fruits and vegetables take place in public retail markets, which swell in size during the weekend periods, with lesser amounts sold in privately owned roadside stalls and shops along major roadways in urban and rural areas.

Global changes to food markets and food consumption patterns such as the rise of large supermarkets offering discounted bulk buying and one-stop shopping, the escalation of meals

consumed away from home and movements towards increased convenience on food purchases, are also making their way to Trinidad and Tobago. In a study in 2006 conducted for the Caribbean Regional Negotiating Machinery (Best, 2006) it is estimated that there were 80 supermarkets, 250 smaller self service food stores (groceries), 750 counter shops, and about 2,000 ‘mom and pop’ stores. The study concluded that the food retailing landscape had changed considerably in the past five years with the rise of megastores and the arrival of a large international food retailer (PriceMart). Supermarkets accounted for a significant share of consumer food expenditures and were winning shares from smaller food retailers and specialty food retailers. Thus, according to the study, the four largest supermarket chains accounted for an estimated 28 percent of market share and the specialised food retailers accounted for an estimated 15 percent, though this was considered larger in terms of fruits, vegetables, meat and fish.

Marketing Margin Analysis

To have an indication of the role of the marketing system in the price increases, price data were assembled for selected food commodities. The data in Table 6 provide information on import prices on CIF¹⁸ basis (cost insurance freight) and retail prices. The data indicate that between 2001 and 2005, import prices of most of the identified commodities experienced some increases, although some commodities, such as chicken meat and bananas, experienced declines.

The changes in percentage mark-up between CIF and retail prices are calculated and the commodity level mark-ups for the period 2001-2002 and compared with the average for 2004-2005 (see Table 6). As can be seen, with only a few exceptions (wheat flour, powder milk, Irish potatoes and cabbage), the mark-up has increased significantly. In other words, the relative profit earned in the various steps of the distribution system between importer/producer and consumer has risen significantly, both for commodities with high and low import dependency. As an illustration, when a consumer bought 1 kg of chicken meat in 2001, 1.48TT\$ went to the wholeseller and retailer. In 2005, a consumer would pay these 4.90TT\$, or over three times more than in 2001¹⁹.

Table 6: CIF-Retail Price Marketing Margins on Selected Food Products

	CIF Prices (TT\$/kg)					Retail Prices (TT\$/kg)					% Mark-up	
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005	'01-02	'04-05
Meat of Swine	7.61	8.04	10.27	10.96		20.32	20.9	21.33	23.21	25.23	163.5	N/A
Beef	13.48	15.49	15.4	13.48	11.15	17.73	17.53	18.61	21.67	24.27	22.4	89.2
Chicken Meat	5.49	5.19	4	3.75	4.28	6.97	6.57	8.29	9.28	9.18	26.8	131
Flour-wheat	1.89	1.59	1.68	1.94	2.13	3.14	3.41	3.54	3.72	3.64	90.2	81.5
Milled Rice	3.39	1.88	2.19	2.98	3.01	4.27	4.2	4.33	5.24	6.13	74.8	89.7
Raw Sugar	1.76	1.92	1.86	1.47	2.08	4.52	4.52	4.43	4.38	4.23	146	150.9
Powder Milk	15	13.95	14.57	16.3	26.1	23.29	24.16	26.51	27.5	28.05	64.2	38.1
Bananas	3.21	2.69	2.65	2.65	2.35	4.75	4.96	5.23	5.47	6.05	66.2	132
Irish Potatoes	1.28	1.85	1.83	1.61	1.78	2.87	2.97	2.79	2.85	3.06	92.2	74.4
Sweet Potatoes	3.71	3.63	3.66	3.72	3.71	7.32	4.96	8.65	6.38	11.12	66.9	135.7
Tomatoes												
fresh/chilled	3.41	5.24	4.4	4.07	4.22	8.31	9.58	9.21	12.93	14.28	113.2	228.1
Carrots	2.72	2.66	2.71	3.34	3.4	7.11	7.56	8.29	9.5	10.37	172.8	194.6
Cabbage	2.47	2.45	2.8	2.68	3.48	6.18	6.32	6.75	6.4	8.8	154.1	145.9

Source: Central Statistics Office, Trinidad and Tobago, retail and trade statistics, own calculations.

¹⁸ CIF: Cost, insurance and freight included.

¹⁹ This was perhaps part of the reason for the surcharges on broiler meat in 2005.

Implications of the marketing and food import structures for food prices

The high dependence on food imports suggest that food prices in Trinidad and Tobago should be influenced by fluctuations in import food prices. The country has a high import dependence on North-America and Europe (for temperate fresh, frozen and processed produce) and the CARICOM countries (for root crops, and fresh tropical fruits and vegetables). Additionally, the absence of State interventions in food markets (including the absence of import restrictions, import and business licensing requirements, and price controls) provides an environment conducive for effective price transmission. The extent to which changes in international prices are transmitted into domestic markets would be affected by the overall economic environment – a smaller proportion in times of a depressed economy (mid 1980's through the mid 1990s) and a higher transmission during a booming economy (after 2002).

The transmission of international food prices is also influenced by market structure. In the case of fresh produce from domestic and CARICOM sources, there are several marketing channels for transfer of produce from importers or producers to consumers. These markets are more competitive and subject to prices determined by the forces of supply and demand. In the case of temperate fresh products and processed food products, the specific items are imported by one or few businesses that typically also conduct distribution to the wholesale and retail levels. Imported temperate fresh and processed products are therefore more subject to oligopolistic pricing and deviation from international price developments, leading to higher marketing margins as seen above. Fresh tropical produce (root crops, tropical fruits and vegetable) would be subject to the forces of domestic demand and supply while that of temperate fresh produce would be more subject to fluctuations in international prices. In the case of processed products, these would be subject to the influence of international prices given the high import content in these goods.

Impact of Price Increases on Different Income Groups

Poorer households generally are more adversely affected by food price inflation in part because they spend relatively higher proportions of their income on food. The data available indicates that Trinidad and Tobago is not exception. The 1997/98 Household Budgetary Survey indicates that households in the lowest 10% of the national income distribution spend close to 30.7% of household income on food, alcoholic drinks and tobacco²⁰. In contrast households in the highest 10% of the national income distribution spend 13.5% of household income on food, drinks and tobacco.

²⁰ Unfortunately, data from the 2005 Survey of Living Conditions is not yet available. Anecdotal evidence suggests that there may have been a shift towards more consumption of fast food outside the household, most likely resulting in a deterioration of diets.

Table 7: Household Expenditure by Income Groups, Trinidad and Tobago 1997/98

Expenditure Groups	Income Classes					
	Lowest 10%	Lowest 20%	Lowest 25%	Upper 25%	Upper 20%	Highest 10%
Food	26.3	25.9	24.7	11.6	11	9.4
Meals out	1.3	1.6	1.9	2.9	2.9	2.7
Alcoholic drinks	1.4	1.1	1.2	1.2	1.1	1.1
Tobacco	1.7	1.3	1.2	0.3	0.3	0.3
Clothing and Footwear	5.2	5.8	6.1	6.2	6	5.6
Accommodation	21.9	22.3	22.6	23.8	23.8	24.7
Fuel and Light	8.8	8	7.8	4.1	4	3.9
Household Supplies	7.8	7.8	8	10.2	10.2	10.6
Medical Goods & Services	4.5	5.1	4.7	4.3	4.1	3.6
Transportation	9.6	9.5	10.1	20	20.8	21.7
Foreign Travel	0.7	0.6	0.5	2.6	2.8	3.5
Entertainment	2.1	2.2	2.3	4	3.9	3.9
Education	1.7	1.9	2.1	3.4	3.5	3.8
Per Care, Hygiene, Serv	2.5	2.4	2.3	2.1	2.1	2
Misc Goods and Services	2	1.8	1.9	1.9	2	1.8
Home Grown Food	1.9	1.8	1.9	0.7	0.7	0.5
Gifts Received	0.6	0.8	0.8	0.7	0.8	0.9
Total	100	100	100	100	100	100

Source: Report of the Household Budgetary Survey 1997/98, Central Statistical Office, Trinidad and Tobago

Simple estimates from the data suggest that a 20% increase in food prices will cause the total expenditures of households with the lowest 10% of income to increase by 5.3% while that of households with the highest 10% of income will increase by 1.9%, assuming that households consume the same bundle of food items regardless of price increases (consumption is inelastic). This may be a more realistic assumption for the poorer than richer households, but in any case suggests an upper boundary for the impact, given that it allows the household to buy an unchanged bundle of goods.

So far, we have only looked at the isolated impact of price changes, but with increasing prices typically follow adjustments to wage rates. Data in Table 8 on wage rates pertain to all workers (penultimate row) and to production and ancillary workers (last row). Approximating 'all workers' to the average household and 'production and ancillary workers' to low income households, the data suggest that since 1999 on average, households were more than compensated for the rising (overall) prices through increases in income. Table 8 also show that in the 1998-2000 - the period for which data is available - low income households were worse off because of wage rate increases that fell short of overall inflation rates.

Table 8: Inflation and Wage rate Changes 1998-2005

	1998	1999	2000	2001	2002	2003	2004	2005
Inflation (%)	5.6	3.4	3.5	5.6	4.2	3.8	3.7	6.8
Index of Weekly Earnings (all workers/all industries)	4.7	4.8	9.1	9.3	11.6	13.2	14.5	1.4
Index of Minimum wage rates (Production and Ancillary workers)	2.4	1.6	2.6	n/a	n/a	n/a	n/a	n/a

Source: Ministry of Finance, Review of the Economy, 2002 and 2006

5 Conclusion and Policy implications

Trinidad and Tobago faces a situation of rising inflation, largely motivated by increases in food prices, along with declining agricultural output and increased food import dependency.

Whilst the rising food prices can have an impact on the poorest groups, it is less likely that, given the significant real economic progress, it will result in any significant increase in the prevalence of undernourishment. Thus, the present hike in food prices is unlikely to derail Trinidad and Tobago's path towards achieving the MDG 1 hunger target. However, there are likely to be welfare costs, especially for low income groups, that need to be considered. Furthermore, achieving the MDG 1 hunger target only address part of the food security challenge. Health effects of nutritional deficiencies as a result of poor dietary habits and lifestyle will remain.

The Government has a number of policy options to address food price inflation and its impact on food security. These can be grouped into four main categories: 1) market interventions to alter the food prices directly; 2) support to improve competitiveness of the agricultural sector; 3) safety net interventions in support of poor households and 4) interventions to remove obstacles to free trade.

Prior to the mid-1980's, Trinidad and Tobago, like most other Caribbean countries, pursued an economic policy of industrialization through import substitution. Policy measures included price controls on most staple food items; a State-owned Commodity Marketing Board that was the sole buyer of particular commodities and/or operated a guaranteed price/purchase scheme for others; sale of agricultural inputs (including planting materials, fertilizers and pesticides) at subsidized prices; and production of some commodities. However, following the structural adjustment programmes in the latter half of the 1980s, the policy stance shifted towards support to free market mechanisms and a minimum level of direct intervention. This shift may also have reflected another reality: being a small open economy and given the high transmission of international prices, there is a limited scope for direct market intervention/management of food prices.

At present, the main instruments for direct intervention in food markets relate to changes in border tariffs and a (low) level of subsidization for inputs used in agricultural production. In addition, the Government provides the infrastructure to facilitate exchange at the wholesale and retail level and to support exports. Within this framework, the Government has tried

several mechanisms intended to reduce prices, with the major initiatives being the reduction of taxes (tariffs and duties, and value-added tax) on a wide range of imported food items, including poultry meat, but with limited success.

The interventions to support increased competitiveness of the agricultural sector have focused on removing constraints to domestic production and increasing the efficiency of domestic and export marketing arrangements. There are major programmes for improving access roads and repairing water management infrastructure, particularly for the higher-valued commodities short-term commodities such as vegetables. Success has also been achieved in improving the domestic marketing infrastructure and the infrastructure to support exports, particularly of fresh vegetables. The recent initiative establishing farmers markets, for direct exchange between farmers and consumers, generally has been regarded as successful. However, significant constraints still remain including high levels of praedial larceny (which farmers consistently rank as their number one problem), flooding and low levels of institutional support.

An alternative strategy to address the impact of increasing food prices is with social protection type interventions aimed at ensuring a minimum food consumption of particular poor groups through targeted income transfer. Along these lines, the Trinidad and Tobago Smart Card, which was launched in mid 2006, is the primary income transfer mechanism in response to food price inflation. This card, which is available to families with low levels of income, provides a monthly cash transfer that varies with family size. The card can only be used at participating merchants and only for the purchase of specified food items, although this is in practice difficult to monitor. However, if this is to serve as a safety net, it should not be limited in time and selection should be means based on a continued basis.

As a means to confine food inflation, another option is to establish a system of forward contracts for specified key domestic commodities. This may reduce food price inflation in the short-term while contributing positively to agricultural growth and development in the long-term. The forward contracts would make farming of these commodities more attractive by reducing price risk and thus augment supplies and lower prices. However, to reduce the negative impacts of reduced prices on non-contract farmers, a complementary programme of deficiency payments may be needed.

The Government has recognised the need to remove impediments to free trade and thus assure the operation of competitive markets, but as seen above, the mark-up on a number of commodities has increased significantly over the last few years. The Government has generally followed a policy of zero involvement in markets, requiring no license for imports, imposed no regulation on mark-ups and not been involved in the functions of buying and selling. In certain commodity markets, scope for gaining significant profit by exercising market control has materialised into oligopolistic behaviour of wholesalers. To the extent that such inefficiencies are a function of restricted access to infrastructure, informal entry barriers etc., these needs to be addressed to ensure functioning and competitive markets for specific commodities.

A recent initiative proposed by the State is for the importation of food by two state enterprises, the National Flour Mills (NFM) and the National Agricultural Marketing Development Company (NAMDEVCO). As reported in the daily newspapers the intent is for these state enterprises to locate cheaper sources of food (such as in Latin America) and distribute with

low mark-ups to the existing retail system, but the question is whether these enterprises can do this more effectively than the expanding supermarkets?

It is noteworthy that the Government is active in all of the four areas of intervention but also that the measures deployed so far have had varying success. The continued food price increase may relate both to whether the mix of policy interventions is effective. Whilst it is still early days to see the effects of the Smart card, it is generally considered that it has improved food security of the most vulnerable households – but if this is the case, entitlements should not be limited in time. The introduction of farmers markets has been well received and is considered to have brought benefits of lower prices to consumers. However, the programmes that have reduced taxes have not brought discernible reductions in prices.

The choice of a policy indicator to monitor the impact of food price interventions depends on the choice of the criteria of success for such policy. Is it stabilising the general price level, the access to food of the poorest, contributions to a more balanced diet through bringing down prices of vegetables and fruits or?. If the policy goal is to cap general food price increases, CPI food price increase should be monitored. If the goal is for food prices not to deviate from international prices, the indicator should be commodity specific border parity prices. However, if the goal is instead to keep poorer households above a minimum threshold, the share of income used on food could be used.

The major defect with the initiatives so far is that they have not simultaneously addressed the classical challenge of addressing the needs of consumers for lower prices and that of farmers for good returns within the context of an overall objective of growth and development of the agricultural sector. International food prices are expected to increase in the short to medium term and so import prices will continue to put upwards pressure on national food prices. If Trinidad and Tobago wants lower food inflation and a sustainable agricultural sector that can turn the tide of food imports, it needs to develop just that, requiring a mix of welfare, agricultural support and trade promoting interventions, whilst addressing the structural challenges that hinder competitive price formation.

References

- Abdulai, A. and Aubert, D. (2004). *Nonparametric and parametric analysis of calorie consumption in Tanzania*. Food Policy, Vol. 29, pp.113-129.
- Best, R. and Placide, L. (2006). *An Assessment of the Agri-Food Distribution Services Industry in CARICOM*. Caribbean Regional Negotiation Machinery. St. Lucia.
- Best, R. (2006) *Note on Retailing and Pricing of Broilers in Trinidad and Tobago*. Caribbean Poultry Association. Port of Spain.
- BP (2007). BP Statistical Review of World Energy June 2007” (<http://www.bp.com/sectiongenericarticle.do?categoryId=9010943&contentId=7021566>).
- Block, S.A. et al. (2004). *Macro Shocks and Micro Outcomes : Child Nutrition during Indonesia’s Crisis*. Economics and Human Biology, Vol. 2, Issue 1, pp 21-44.
- Central Bank of Trinidad & Tobago Data Centre (2006). (<http://www.central-bank.org.tt/statistics/index.php?pid=4002>).
- Central Statistics Office, Trinidad & Tobago (2002). *Household Budget Survey 97/98*. Port of Spain.
- Central Statistics Office, Trinidad & Tobago (2005). *Agricultural Census Preliminary Report*. Port of Spain.
- Central Statistics Office, Trinidad & Tobago (2006). *Index of Average Weekly Earnings*. from 1998 to 2005, 2006. Port of Spain.
- Central Statistical Office, Trinidad and Tobago (2007). Selected Micro/Macro Economic Indicators (<http://cso.gov.tt/files/cms/Selected%20Leading%20Indicators.pdf>)
- Dawson, P.J. and Tiffin, R. (1998). *Estimating the Demand for Calories in India*. American Journal of Agricultural Economics, Vol. 80, No. 3, pp. 474-481
- Dawson, P.J. and Tiffin, R. (2002). *The Demand for Calories: Some Further Estimates from Zimbabwe*. Journal of Agricultural Economics, Vol. 53, No. 2, pp. 221-232
- Economist Intelligence Unit (2007). *Trinidad and Tobago – Country Profile 2006*. EIU. London.
- FAO (2003). *Nutrition Country Profiles – Trinidad and Tobago*. 2003. FAO. Rome.
- FAOSTAT (<http://faostat.fao.org/default.aspx>)
- Gulliford, M.C; Mahabir, D. and Rocke, B. (2003). *Food insecurity, food choices, and body mass index in adults: Nutrition transition in Trinidad and Tobago*. International Journal of Epidemiology, Vol. 32, pp. 508-516

Kannapiran, C. (2000). *Commodity Price Stabilization: Macro-economic Impacts and Policy Options*. Agricultural Economics, Vol. 23, No. 1, pp. 17-30

Handa, S. and King, D. (2003). *Adjustment with a Human Face? Evidence from Jamaica*. World Development, Vol. 31, No. 7, pp. 1125-1145

IMF (2007). International Financial Statistics Online (<http://ifs.apdi.net/imf/logon.aspx>)

Ministry of Finance (2002). *Review of the Economy 2002*. Government of the Republic of Trinidad and Tobago, Port of Spain.

Ministry of Finance (2007). *Review of the Economy 2007*. Government of the Republic of Trinidad and Tobago, Port of Spain.

Myers, R.J. (2006). *On the costs of food price fluctuations in low-income countries*. Food Policy, Vol. 21, pp.288-301.

TANGO International, Inc. (2006). *Trinidad and Tobago: Overview of Food/Nutrition Security and Natural Disaster Risks*. Tango International. Arizona.

Timmer, C.P. (2002). *Agriculture and Economic Development*. In Gardener B. and G. Rausser "Handbook of Agricultural Economics Vol. 2", pp. 1487-1546

UNDP (2006). *Human Development Report 2005*. UNDP.

World Bank (2005). *Managing Food Price Risks and Instability in an Environment of Market Liberalization*. World Bank, Agriculture and Rural Development Department. Washington.

World Bank (2007). *World Development Indicators Online*. World Bank. Washington.

ESA Working Papers

WORKING PAPERS

The ESA Working Papers are produced by the Agricultural Development Economics Division (ESA) of the Economic and Social Development Department of the United Nations Food and Agriculture Organization (FAO). The series presents ESA's ongoing research. Working papers are circulated to stimulate discussion and comments. They are made available to the public through the Division's website. The analysis and conclusions are those of the authors and do not indicate concurrence by FAO.

ESA

The Agricultural Development Economics Division (ESA) is FAO's focal point for economic research and policy analysis on issues relating to world food security and sustainable development. ESA contributes to the generation of knowledge and evolution of scientific thought on hunger and poverty alleviation through its economic studies publications which include this working paper series as well as periodic and occasional publications.

Agricultural Development Economics Division (ESA)

The Food and Agriculture Organization
Viale delle Terme di Caracalla
00153 Rome
Italy

Contact:

Office of the Director
Telephone: +39 06 57054358
Facsimile: + 39 06 57055522
Website: www.fao.org/es/esa
e-mail: ESA@fao.org