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Changing Agri-food Markets in the Caribbean: A Preliminary Investigation

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Abstract

The food-retailing sector globally is undergoing tremendous change. In the Caribbean the changes appear to be unnoticed by academics, policy makers and development agencies. Supermarkets possibly are gaining market share at the expense of the traditional outlets utilized by small farmers. The organizational and institutional changes offer both opportunities and challenges for small farmers, the group that contributes the largest share of agricultural production in the Caribbean Region. Access to supermarket procurement systems, given their stringent quality and quantity requirements, is seen as the major challenge confronting small farmers. Ensuring them access to supermarket procurement systems is necessary if supermarkets are increasing in importance in Caribbean agri-food markets. This paper attempts to evaluate the importance of supermarkets in the Caribbean using data from Trinidad and Tobago and highlight some of the challenges that might confront small farmers during this period of tremendous change.

Key words: small farmers; changing agri-food markets; supermarkets

Introduction

Structural change continues to transform food markets in both developed and developing countries. Supermarkets are now major buyers and sellers of food in developed countries and are rapidly expanding their global presence (Arda 2006, Stichele 2005). Supermarkets are no longer located in niches in capital cities in developed and developing countries but are spreading rapidly into low-income communities. Hellin, Lundy & Meijer 2006 stated "*In some countries the expansion of supermarkets has been very rapid. In China, for example, there were no supermarkets in 1990 and by 2003 they had captured a 13% share in national food retail and 30% of urban food retail* (Hu et al. 2004*). The share of supermarkets in food retail in Latin America rose from a mere 10-20% in 1990 to 50-60% by the early 2000s, displacing small shops and open-air markets* (Reardon and Berdegue′ 2002*)*".

Celia Dugger in a New York Times, December 28, 2004 article titled 'Guatemala: Supermarkets Giants Crush Farmers' states "*Across Latin America, supermarket chains partly or wholly owned by global corporate goliaths like Ahold, Wal-Mart and Carrefour have revolutionized food distribution in the short span of a decade and have now begun to transform food growing, too. The megastores are popular with customers for their lower prices, choice and convenience. But their sudden appearance has brought unanticipated and daunting challenges to millions of struggling, small farmers. The stark danger is that increasing numbers of them (small farmers) will go bust and join streams of desperate migrants to America and the urban slums of their own countries*". Similar sentiments are expressed by Emad Mekay (2004) in the article titled 'Global Supermarkets Elbow Aside Small Farmers". What is the position in the Caribbean?

Small farmers contribute by far the largest share of agricultural production in the Caribbean Region. However, in many Caribbean islands the small farmers, be it producers of crops or livestock, still appear to be struggling to meet their subsistence needs. The reasons suggested for this lack of prosperity in the agricultural sector in particular, and many of the economies in the Region that are heavily dependent on agriculture are too numerous to be discussed here. However, one reason for the continued subsistence existence of small farmers in the Caribbean that is frequently cited is "inadequate small farmer market linkages". If the growth of supermarkets is going to have a negative impact on small farmers in the Caribbean, monitoring their expansion is of critical importance.

This paper attempts to highlight some of the changes in the agri-food markets in the Caribbean and the impact of supermarkets[1] on domestic food markets, as well as some of the challenges for small farmers. In the next section a brief overview of some of the changes taking place in food marketing and consumption, regionally and globally, is presented. Section three takes a retrospective look at what has been our market focus. In section four the approaches tried to access the importance of supermarkets in food retailing are presented. In the next section some of the challenges small farmers might face dealing with supermarkets are examined and in the final section some recommendations are made.

Given the difficulty encountered in obtaining data for a rigorous analysis of the growth in importance of supermarkets in food retailing in the Caribbean, the paper also points to the need of public/private sector involvement in data collection, storage and availability for research. In areas such as agri-food markets, which cut across all sectors of the economy, informed decisions must be based on

[1] For simplicity, the term "supermarket" is used here to refer to all self-service retail food stores, regardless of floor space.

the analysis of reliable/good data. The data used in this study precluded rigorous analysis and as such require any suggestions made to be taken with caution.

Changing Consumption Patterns

Traditionally, the consumption of Root and Tubers (R&T) once formed a major part of the diet of many Caribbean people. Small farmers produced root crops primarily for home consumption with excess volumes being sold on the local market. Recently, these products have taken on added dimensions, with a percentage of the production being exported and some being processed. The advent of new food production technologies, increasing living standards and changing lifestyles have had a tremendous impact on the production and consumption of the R&T. Nigel Durrant (1989) stated "*Generally, the production and consumption of indigenous root crops have been declining over the last two decades and this trend has been ascribed to wide variety of factors. Among these factors, the most important would seem to relate to the limited forms in which roots crops may be consumed – given the low levels of processing technology. In addition, there is the relative inconvenience involved in the preparation of these foods when compared with other high-energy staples such as rice and wheat flour*". However, in the absence of consumption figures for the R&T in the Caribbean for the last few decades it is difficult to confirm if consumption is actually increasing or decreasing.

A casual stroll down the isles of a supermarket would readily reveal the drastic changes taking place in contemporary food markets, and the tendency towards convenience. The "Deli" section occupies a large portion of the supermarket. Chillers contain numerous amounts of microwaveable meals, from pizzas to lean cuisine dinners. The fresh fruit and vegetable section is now used as a destination category by leading supermarkets.

The fresh fruit and vegetable category is of particular importance since in many Caribbean islands this was primarily the domain of small farmers/traders selling in the public markets and along the roadside. On examination of the chillers in the vegetable section in supermarkets everything from whole vegetables washed and bagged, to peeled baby carrots, shredded cabbage and ready-to-eat salads are available. Very noticeable here also is the large percentage of imported produce.

Where and how the modern housewife does her food shopping is also worthy of note. No longer is it a daily trek to the "wet market" for food to be consumed the same day or weekly early morning strolls to the public market. Today it is generally a trip to the mall where groceries, laundry and doctors prescriptions can be filled, with an emphasis on 'one stop shopping'.

A few of the commonly cited

reasons for the increased importance of supermarkets in developing countries food markets are:

- Urbanization – with the rapid increase in the urban centers in the Region people become more removed from the farms and as such have to depend more on buying food than on producing it;
- Growing access to refrigerators and freezers – allows for larger quantities of food to be purchased at any one time and for food to be stored for long periods.
- More women in the workforce – with more women being employed out of the home they are time pressured and have less time to prepare meals from scratch, hence the increase demand for convenience foods;
- Growing access to vehicles – with more homes having access to vehicles, shopping can be done further away from the home;
- Improved air and sea transport – with better freight systems available food can be transported greater distances, permitting supermarkets to source globally;
- Rising per capita income – with increasing affluence, diets shift from basic staples to more fresh fruit and vegetables and protein, all available in the supermarkets;

With regards to urbanization, figures for the Caribbean region are not readily available but table 1 provides an indication of what is happening in different regions of the world. As can be seen in this table for the period 1950-2000, Latin America and the Caribbean ranked second to Africa for the urban population growth % per year. Projections for 2030 put Latin America and the Caribbean second to North America for the urban population as a % of total. Some researchers have detected a correlation between the prevalence of supermarkets and the rate of urbanization. Therefore one can expect to see an increase in the importance of supermarkets in the Caribbean food system if the correlation holds.

In summary then, changing technology, globalization, urbanization, trade liberalization, and a sustained rise in per capita income are impacting on the way food is produced, prepared, where it is sold and where it is consumed.

Markets and Marketing in Retrospect

As was alluded to earlier, markets and marketing were not given considerable attention in the Region. Commodities such as bananas and sugar cane were produced in the islands and exported to the United Kingdom. Where they were sold, who bought them and who consumed them was not a priority. With the disappearance of preferential trading arrangements, increasing competition and declining commodity prices many islands shifted to the exportation of non-traditional products.

With the attempt to penetrate non-traditional agricultural markets in developed countries came the need to be more market oriented. Most of the products were highly perishable, for example papaw, hot peppers, mangoes and Tilapia, thus requiring stringent adherence to quality standards if they were to make it to supermarket shelves, the new shopping ground for the “urban rich” in developed countries.

In the initial stages of the non-traditional export business most of the exports from the islands ended in wholesale markets such as “New Spitafields Market” in the UK. The prices received for produce sold to the wholesale market operators was much lower than that sold to the supermarkets. However, many donor agencies questioned the ability of small farmers in developing countries to meet the stringent standards set by the supermarkets in developed countries.

In retrospect two types of markets dominated the attention of development practitioners, donor agencies and governments in the Region:

- The traditional market: During the period of the 1940s to 1980s the focus was providing physical structures for small producers to trade their produce. Marketing Boards were also of importance in this era, supposedly contributing to orderly and efficient marketing, the reduction of the capacity of intermediaries to manipulate margins at the expense of producers and consumers and the generation of producer-oriented power.
- The export market: The focus in the 1980’s and 1990s was on gaining access to non-traditional agricultural export markets. Many development agencies focused on providing technical assistance to enable the small farmers to meet the volume and quality requirements of the developed country markets, for example The West Indies Tropical Support Project (TROPRO). However projects have a defined life and with the closure of TROPRO non-traditional exports from the OECS decreased.

In the period of the 1980s and 1990s when the focus was on penetrating extra-regional fresh produce markets there was the new market ‘supermarkets’ evolving in our domestic market. Through highly efficient procurement and distribution systems some argue that supermarkets are able to offer consumers lower prices, greater convenience, and higher quality and safer food than the traditional ‘wet markets’.

Measuring the importance of Supermarkets:

Two types of supermarket developments impact upon small agricultural producers in the Caribbean region:

- The growing market for fresh fruit and vegetables in developed countries, that is driven to some extent by supermarkets attempting to satisfy consumer demand in these economies; and

- The expansion of supermarkets in the Region.

The latter is the interest in this paper.

Figure 1 provides an illustration of the conceptual framework. The specific result that is of interest in many developing countries is the increased importance of supermarkets in food retailing, and as suggested by others (C. Dugger, 2004) the implication of top priority is the exclusion of small farmers from this 'niche' and their ultimate plight. The point of departure in this paper was to try and measure/assess if supermarkets are of increasing importance in Caribbean agri-food markets.

Conceptually the importance of supermarkets in contemporary Caribbean food markets can be assessed in numerous ways. Possibly the simplest way is to measure the percentage share of supermarkets in retail food sales over a period of time. The author faced the habitual problem of data scarcity and or confidentially when attempting this, despite painstaking discussions with supermarket operators.

Alternatively one can try and use the growth in the number of supermarkets in a country over a period as a proxy to deduce their increasing importance. For the purposes of this study this also proved difficult. The Supermarket Association of Trinidad and Tobago had 145 registered members at the end of 2006, but could not provide any information on earlier numbers.

With data not readily available on the increase in the number of supermarkets in Caribbean countries (attempt were also made to get data from Barbados and St. Vincent & the Grenadines) the findings of this exploratory study must be taken with caution. From discussions with some supermarket operators in the Caribbean, Barbados and St. Vincent & the Grenadines in particular, the importance of supermarkets in food marketing is increasing. Based on data provided from one supermarket chain in Trinidad and Tobago (Chain A) there was a 36% increase in the number of stores between 1990 and 2006.

Table 2 provides an illustration of the increase in the number of transactions for Chain A in Trinidad and Tobago for the period 2000 to 2006. As can be deduced from this table, 2006's transactions represent a 75% increase over 2000. Using simple trend analysis, in 2008 transactions can be expected to more than double that of 2000.

Chain A's fruit and vegetable (FV) sales more than quadrupled in value for the period 2002 to 2006. Table 3 provides a breakdown of the total fruit and vegetable sales for the period 2002 to 2006 between local and imported, in percentages. As can be seen in this table local FV sales outstripped imported FV for the period. However, what is not revealed in table 3 is the fact that for the period, imported FV sales tend to be increasing while local FV sales are decreasing.

Taking a closer look at the limited data available on Chain A's FV sales, figures 2 and 3 graphically present the data in table 3 with a trendlines added. As can be seen in figure 2 the trendline has a negative slope while in figure 3 the slope is positive. This tends to suggest that if deliberate attempts are not made to turn things around the FV sales of Chain A would be dominated by imported FV in the future. In the 2002 to 2006 period imported fruit out sold local fruit. Figure 4 illustrates the imported fruit sales for the period as a percentage of total FV sales value.

Supermarkets: Challenges for Small farmers

The procurement system of supermarkets has been conceptualized by Codron et al. (2004) as evolving in "four pillars of modernization": "distribution centers, specialized wholesalers, preferred suppliers, and quality standards". In developing countries the "four pillars" may not have fully evolved, however, the need for concern as to the impact of supermarkets on small firms/farms is well documented. Reardon and Berdegue′ (2002) in their "Policy and programme options" section state:

(1) to accept that supermarkets are here to stay and are an overwhelmingly major force in the agrifood economy of Latin America:
(2) to recognize that they can be engines of market development;
(3) to worry about their effects on the agrifood systems in terms of the potential exclusion of small firms and farms;
(4) to help the latter meet the challenges of supplying to supermarkets where it is possible, and encourage the development of retail alternatives for them where it is not.

Some of the main characteristics of the typical supermarket procurement system that presents challenges for small farmer participation are:

- Minimize the cost of product and transactions, possibly by volume discounts and dealing with fewer suppliers;
- Improve quality and safety, possibly by the introduction of their own quality standards and specified certification requirements;
- Availability of product twelve months of the year;
- Consistency of product; both in terms of volume and quality; and
- Payment normally in 14 to 30 days after delivery.

Table 4 provides a comparison of the transaction characteristics of supermarket procurement systems and the traditional public market channel. With many small farmers being accustomed to dealing with the traditional channel, "grading-up" for the supermarkets poses various challenges, however, as Makoka

(2005) states “strict adherence to supermarkets’ procurement procedures would enable the local suppliers to access this highly rewarding agrifood market”.

The *challenges* for small farmers participating in such procurement systems are succinctly presented as follows:

- Small farmers typically produce a large number of crops in an attempt to spread their risks while supermarkets generally require larger volumes of individual produce than the typical small farmer produces. Hence, collective action or specialization will be needed on the path of the small farmers if they are to meet the volume requirements of the supermarkets.
- Small farmers operate in varied agro-ecological zones and as such quality of produce may vary from one zone to another. Consequently, bulking up may prove difficult.
- Many small farmers are not very quality conscious and as such may not be prepared to adhere to the strict quality standards outlined by the supermarkets. Of particular importance in this regard is the need for fresh produce to be delivered free of dirt/residue and with minimal mechanical damage. More recently, information on the chemicals used on the produce maybe required by the supermarkets.
- Food safety is of critical importance in the sale of fresh produce today. However, many small farmers pay little attention to such things as the quality of water used for irrigation and the elapsed time between spraying and harvesting.
- Conforming to some of the safety requirement specified by supermarkets may mean additional investment for small farmers. A venture many would not want to undertake without a guarantee of enormous returns.
- Presently many small farmers produce their crops on a rain-fed system. Consequently supplies are very dependent on the weather and very seasonal. Supermarkets cannot afford to have empty shelves or chillers and as such require supplies twelve months of the year. Shade-houses and or Greenhouse production systems which may help to ensure regularity of supplies require a level of investment that might be out of the reach of some of the poorer small farmers in the Region.
- The payment schedule of supermarkets may not be attractive to many small farmers who operate on a cash-on-delivery basis. The management capacity to negotiate better terms of trade with the supermarkets may be lacking.
- Minimizing cost is a key requirement for participating in

supermarket supply chains. However, with many small farmers not keeping records of their operations identifying opportunities to reduce costs would be a major challenge. Further, every transaction has a fixed cost associated with it. As a result, it is much easier and more cost effective for supermarkets to deal with a few large farmers than with many small ones.

Based on discussions with some supermarket operators in the Region special efforts are being made to deal with small farmers, especially in the fruits and vegetables section. The FV was the domain of small farmers in the Region and as such identifying areas where they have a comparative advantage is critical. The literature suggests that small farmers can be competitive in the production of high-care fruit and vegetables, where strict quality standards require high levels of labor input.

Conclusions/Recommendations

From this simple review of what is happening to food markets, in the Caribbean it appears as though development planners and policy makers have to ensure that viable market opportunities are identified for small farmers and small business operators if the social fabric of the rural areas is to be maintained. As supermarkets gobble up market share in food retailing, the small shops selling processed and semi-processed food would disappear. Further, the traditional public market, as a place to purchase food would more and more be something of the past.

If agriculture is to remain a contributor to our economies small farmers and entrepreneurs must have access to:

- Modern production techniques;
- Access to finance to invest in such things as irrigation equipment and green-houses;
- Training in post harvest and food processing techniques; and
- Access to small business support systems.

Farmers are encouraged to produce high value crops and engage in value-adding activities such as agro-processing in an attempt to capture a larger share of the consumer’s food dollar. Minimally processed fruit and vegetable suppliers appear to have many opportunities to increase sales based on ethnicity, health, convenience and value as market drivers.

Despite the general challenges encountered to enter the supermarket supply chain, some supermarkets go out of their way to assist small farmers. In some developing countries supermarkets have assisted their suppliers with technical support regarding production processes and assistance with financing to acquire items such as, cold storage, pumps and refrigerated trucks. Access to this tailored technical assistance through the supermarket has contributed to improve farmer’s technical knowledge and capacity to efficiently utilize resources towards the production of better quality fresh produce. In the long run the overall fresh produce quality standards of the area could be improved. For the supermarkets that participate in this community involvement strategy they benefit from the use in their advertisements and customer loyalty development.

The rise of supermarkets in the Caribbean is inevitable. Developmental agencies and governments should work together to ensure small farmers benefit fully from participating in these highly rewarding markets. The impediments to the inclusion of small farmers in supermarket channels relate to issues of market failure – institutional shortcomings, transaction costs etc. Hence, public involvement in Caribbean agri-food markets is a must, working primarily to resolve these issues.

Researchers must be provided with adequate data sets to conduct meaningful analysis of issues that are critical to the society at large, and food is no exception. Based on the attempt made here to access data to evaluate the importance of supermarkets in Trinidad and Tobago's agri-food market, much more emphasis must be placed on the collection and storage of data for researchers to work with.

REFERENCES

Arda, M. 2006. Food Retailing, Supermarkets and Food Security: Highlights from Latin America. Research Paper No. 2006/107, UNCTAD, Geneva.

Dugger, C. W. 2004, Guatemala: Supermarket Giants Crush Farmers. New York Times, December 28.

Durrant, N. 1987. The Pre-eminence of Roots and Tubers in the Diets of the Caribbean Peoples. The Courier Jan/Feb 1987. Page 89, Published by the European Union.

Cordon, J-M, Z. Bouhsina, F. Fort, E. Coudel, and A. Puech. 2004. Supermarkets in Low-Income Mediterranean Countries: Impacts on Horticultural Systems, Development Policy Review, 22 (5), September: 587-602.

Hellin, J., M. Lundy, M. Meijer. 2006. Farmer Organization, Collective Action and Market Access in Meso-America. Paper presented at the Research Workshop on Collective Action and Market Access for Smallholders. October 2-5, 2006, Cali, Columbia.

Hu, D., T. Reardon, S. Rozelle, P. Timmer, and H. Wang. 2004. The Emergence of Supermarkets with Chinese Characteristics: Challenges and Opportunities for China's Agricultural Development. Development Policy Review 22 (5): 557-586.

Mainville, D. 2004. *The Supermarket Market- Who Participates and How Do They Fare? Evidence from the Fresh Produce Market of Sao Paulo Brazil*. Downloaded from http://www.ifama.org/conferences/

2004Conference/Papers/Mainville 1080.pdf June 2007

Makoka, D. 2005. The Emergence of Supermarkets in Malawi: Implications for Agrifood Markets and the Small Farmer. Chapter 5 in Agricultural and Rural Development in Malawi: Macro and Micro Perspectives, edited by Tsutomu Takane, Chiba, Japan: Institute of Developing Economies.

Mekay, E. 2004. *Global Supermarkets Elbow Aside Small Farmers*. Inter Press Service News Agency. Downloaded from http://www.ipsnews.net/print.asp?idnews=22834 July 3,2007

Reardon, T., J. Berdegue, P. Timmer, T. Cabot, D. Mainville, L. Flores, R. Hernandez, D. Neven, F. Balsevich. 2005. Links Among Supermarkets, Wholesalers, and Small Farmers in Developing Countries: Conceptualization and Emerging Evidence. Paper presented at the International Research Workshop "Future of Small Farms". Wye Campus, University of London, UK.

Reardon, T., P.Timmer, J. Berdegue′. 2004. The Rapid Rise of Supermarkets in Developing Countries: Induced Organizational, Institutional, and Technological Change in Agrifood Systems. Paper for Presentation at the September 2004 Meetings of International.

Reardon, T., J. A. Berdegue′. 2002. The Rapid Rise of Supermarkets in Latin America: Challenges and Opportunities for Development. *Development Policy Review* 20 (4): 317 – 34.

Stichele, M. V. 2005. *The Challenge of the Role of Supermarkets for Sustainable Agriculture and Trade Related Issues.* Downloaded from www.globalternatives.nl/file/220 February 2007.

Table 1: Urbanization Indicators by Regions

	Urban population as % of total				Urban population growth % per year	
	1950	**1975**	**2000**	**2030**	**1950-2000**	**2000-2030**
North America	63.9	73.8	77.4	84.5	1.21	0.77
Latin America & the Caribbean	41.9	61.4	75.4	84.0	2.27	1.11

Oceania	61.6	72.2	74.1	77.3	1.77	1.05
Europe	52.4	67.3	73.4	80.5	0.57	-0.27
Asia	17.4	24.7	37.5	54.1	1.93	0.99
Africa	14.7	25.2	37.2	52.9	2.56	2.10

Source: Arda, M. 2006

Table 2: Chain A's Transaction Count for the Period 2000 –2006

Year	Transaction Count
2000	7220667
2001	7720008
2002	8232962
2003	8952262
2004	10866817
2005	11881398
2006	12618512

Source: Compiled by author

Table 3: Chain A's Fruit and Vegetables Sales Value Comparison Between Local and Imported for the Period 2002 –2006

Year	Local FV as a % of total FV sales value	Imported FV as a % of total FV sales value
2002	58.27	41.73
2003	55.68	44.32
2004	58.77	41.23
2005	50.93	49.07
2006	59.61	40.39

Source: Compiled by author

Table 4: Comparison of Characteristics of Supermarket and Traditional Market Channel

	Supermarket channel	Traditional channel
Volume	Large	Medium/low
Certification documentation	High	Low/non-exsitent
Cosmetic quality	High	Low/non-exsitent
Organoleptic quality	High	Variable
Price	Regular with discounts	Variable
Logistic requirements	High	Low
Consistency of supply	High	Low

Source: D. Mainville, 2004

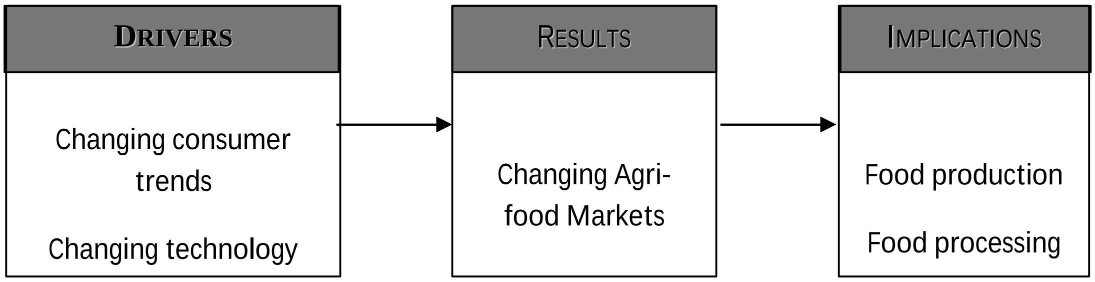

Figure 1: Conceptual Framework

Source: Compiled by author

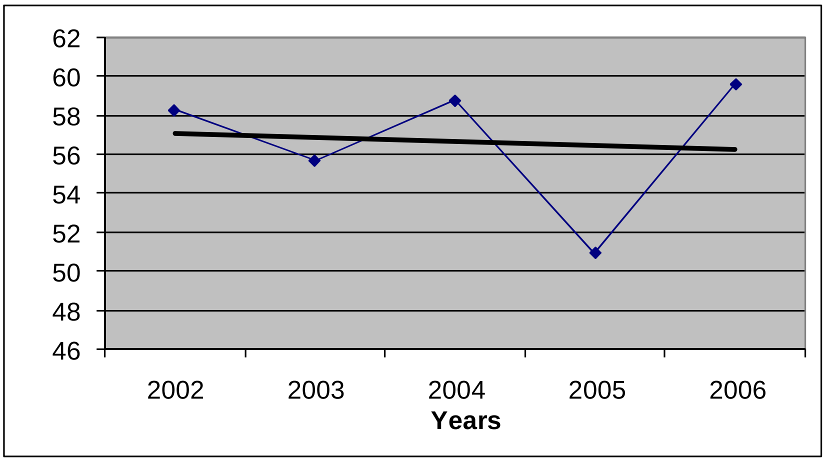

Figure 2: Chain A's Local FV Sales for the Period 2002 to 2006 as a percentage of Total FV sales value

Source: Compiled by author

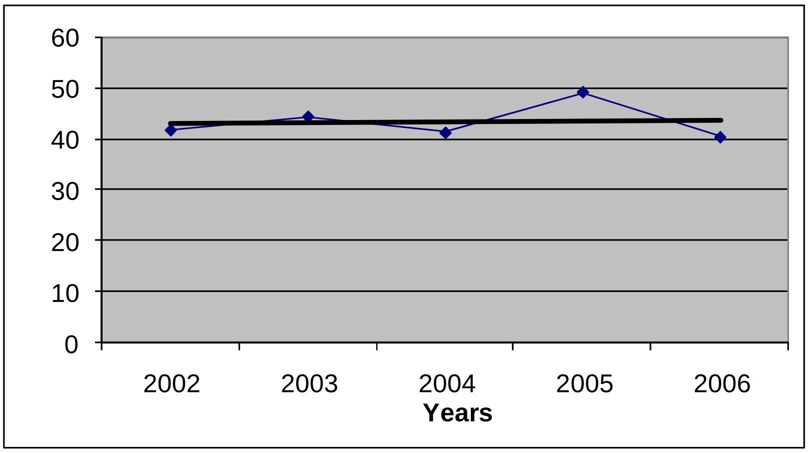

Figure 3: Chain A's Imported FV Sales for the period 2002 to 2006 as a percentage of Total FV sales value

Source: Compiled by author

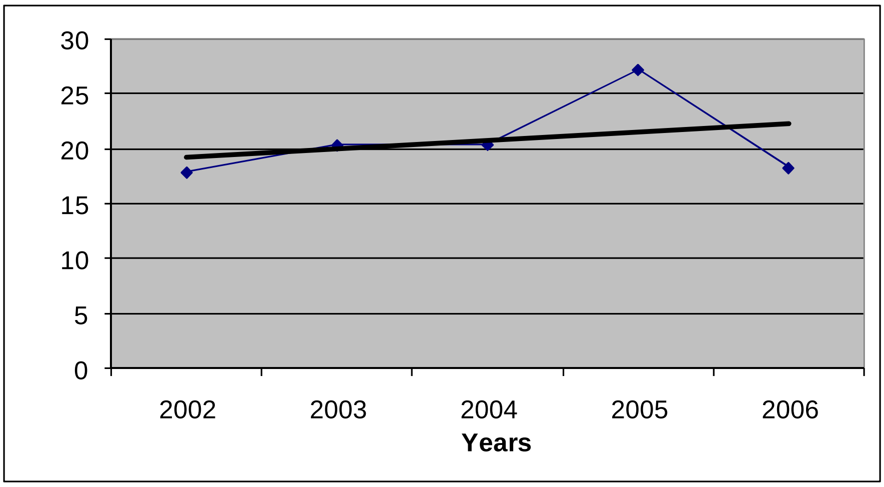

Figure 4: Chain A's Imported Fruit Sales for the period 2002 to 2006 as a percentage of Total FV sales value
Source: Compiled by author