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## The Development Of An Eco-gastronomic Tourism (egt) Supply Chain-analyzing Linkages Between Farmer, Restaurants, And Tourists In Aruba.

Marcelino Kock  
*University of Central Florida*

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THE DEVELOPMENT OF AN ECO-GASTRONOMIC TOURISM (EGT) SUPPLY  
CHAIN– ANALYZING LINKAGES BETWEEN FARMERS, RESTAURANTS AND  
TOURISTS IN ARUBA.

by

MARCELINO GERALD KOCK  
M.S. University of Central Florida, 2007

A dissertation submitted in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy  
in the Department of Hospitality  
in Rosen College of Hospitality  
at the University of Central Florida,  
Orlando, Florida.

Fall Term  
2013

Major Professor: Tadayuki Hara.

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## ABSTRACT

Purpose of this study is to holistically analyze existing linkages between Aruba's tourism industry, restaurants and local farmers, by examining strategies that constrain the development of linkages between these stakeholders. Previous research indicated that tourism development is often accompanied with increased demand for imported food, which results in foreign exchange leakages, inflation and competition with local production. This phenomenon is very common in the Caribbean, where Aruba, with its heavy reliance on imported goods and services, is no exception to this occurrence. To comprehend potential problems associated with linking both sectors, these in-depth case study addresses three fundamental questions: a) what is the structure of supply and demand of food for the tourism industry of Aruba?, and b) what factors constrain the development of linkages between international tourism and Aruba's local agriculture? Using an exploratory and stochastic methodological approach, data will be obtained from structured surveys from three different stakeholders in the food supply chain of Aruba. Anticipated findings illustrate that the existing linkage between the tourism industry and agriculture in Aruba is still weak, yet the food consumption and preferences by tourists can contribute in enhancing an eco-gastronomic tourism supply chain.

**Keywords:** Tourism, Agriculture, Tourism Aruba, Tourist Food Consumption, Restaurants, Local Farmers, Locally Produced Foods, Gastronomy, Eco-Gastronomy, Input-Output Model

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## TABLE OF CONTENTS

LIST OF FIGURES .....	x
LIST OF TABLES .....	xi
CHAPTER ONE: INTRODUCTION.....	1
Background of the Study .....	1
Global Tourism Development .....	3
Tourism Growth in the Caribbean and Aruba .....	6
Restaurants, Chefs, and their critical role in fostering tourism and agriculture linkages. ....	13
The demand for local food-a consumers' perspective. ....	16
From Supply Chain Management (SCM) to Supplier Relationship Management (SRM) to Customer Relationship Management (SRM).....	18
Research Questions/Propositions.....	25
Methodology.....	27
Delimitation and the Search for Future Research.....	28
CHAPTER TWO: LITERATURE REVIEW.....	29
Understanding Tourism Development on Aruba.....	29
Challenges and opportunities with Aruba's tourism strategy.....	35
Food and Tourism: going local, going back to nature. ....	42



Towards a 21 <sup>st</sup> Eco-Gastronomy Tourism Destination: Gastronomy and Local Food.....	46
From farm to table: supporting locally produced foods. ....	52
Local food and its role towards an eco-gastronomic tourism destination. ....	56
Demand for locally produced foods-from farm to restaurants .....	61
Restaurants’ role to an eco-gastronomic tourism destination. ....	61
Sustainable Supply Chain Management for Locally Produced Foods .....	71
Challenges within the local supply chain. ....	73
Pricing Negotiations.....	75
Marketing Ability.....	76
Safety and Sanitation .....	78
Availability and Delivery.....	79
Government Policies.....	81
Background of Chef.....	82
CHAPTER THREE: METHODOLOGY .....	84
Phase 1 Farmers’ Perception.....	84
Phase 2 Restaurants’ perception .....	86
Phase 3 Tourists’ perception.....	88
CHAPTER FOUR: FINDINGS.....	91
Phase 1 Farmers’ Perception Results.....	91

Phase 2 Restaurants' Perception Results .....	98
Phase 3 Tourists' Perception Results.....	110
CHAPTER FIVE: DISCUSSION.....	117
CHAPTER SIX: RECOMMENDATIONS, FUTURE RESEARCH, LIMITATIONS AND CONCLUSION.....	124
Recommendations and Future Research.....	124
Limitations .....	133
Conclusion .....	135
APPENDIX A: SURVEY FARMERS .....	137
APPENDIX B: SURVEY RESTAURANTS .....	146
APPENDIX C: SURVEY TOURISTS.....	159
APPENDIX D: LOGISTIC REGRESSION.....	165
APPENDIX E: EXEMPTION DETERMINATION .....	170
APPENDIX F: INFORMED CONSENT .....	172
REFERENCES .....	176

## LIST OF FIGURES

Figure 1: Illustration of a company’s Supply Chain.....	19
Figure 2: The Supplier Relationship Management (SRM) and the Customer Relationship Management (CRM) .....	22
Figure 3: The Supplier Relationship Management (SRM) and the Customer Relationship Management (CRM) .....	23
Figure 4: Strength of Linkage as a proxy for Sustainable Gastronomic Tourism (SGT) Supply Chain. ....	24
Figure 5: Proposed constructs for a food supply chain between farmers, restaurants, and tourists for small island destinations.....	25
Figure 6: Aruba Tourism and significant events from 1925 on.....	31
Figure 7: Comparison of growth of population and accommodation across NTC scenarios. ....	39
Figure 8: Breakdown of McKercher’s study on Culinary Tourists in Hong Kong. ....	45
Figure 9: The contribution of Local Food to Sustainable Development within a Destination. ....	53
Figure 10: Appetite growing for Local Foods. ....	64
Figure 11: Consumers of all ages like to eat Local Food. ....	65

## LIST OF TABLES

Table 1: Tourism Arrivals of “Small” (<1 million inhabitants) Islands in the Caribbean.....	9
Table 2: Total Number of Visitors in Aruba.....	10
Table 3: Yearly Household Income of visitors in Aruba (in percentages). ....	37
Table 4: Alternative tourism styles and policies.....	38
Table 5: Timeline for Aruba tourism, tourism styles and policies. ....	40
Table 6: Average daily expenditure spent in Aruba per category (in U.S.\$).....	63
Table 7: Age group demographic information about farmers .....	92
Table 8: Descriptive results of the item “Product/Price” .....	93
Table 9: Descriptive results of the item “Marketing Ability” .....	94
Table 10: Descriptive results of the item “Safety/Sanitation” .....	95
Table 11: Descriptive results of the item “Availability/Delivery” .....	96
Table 12: Descriptive results of the item “Government Policy” .....	97
Table 13: Descriptive results of the item “Background of Chef” .....	98
Table 14: Age group demographic information about restaurant/foodservice operators. ....	99
Table 15: Descriptive results of the item “Product/Price” .....	100
Table 16: Descriptive results of the item “Marketing Ability” .....	101
Table 17: Descriptive results of the item “Safety/Sanitation” .....	102
Table 18: Descriptive results of the item “Availability/Delivery” .....	103
Table 19: Descriptive results of the item “Government Policy” .....	104
Table 20: Descriptive results of the item “Background of Chef” .....	105

Table 21: Descriptive results of the item “Willingness to Negotiate” .....	106
Table 22: Independent Samples t-test results.....	109
Table 23: The Classification Table .....	111
Table 24: Variables in the equation .....	112
Table 25: Variables not in the equation table .....	113
Table 26: Omnibus tests of model coefficients.....	114
Table 27: Model Summary .....	114
Table 28: Hosmer and Lemeshow test.....	114
Table 29: Contingency Table for Hosmer and Lemeshow test.....	115
Table 30: Classification table.....	115
Table 31: Variables in the equation .....	116
Table 32: Total “Food” import value (in Afls) in Aruba (2000-2011).....	125

# CHAPTER ONE: INTRODUCTION

## Background of the Study

This paper investigates the interaction and linkages between tourism and local farmers by synergizing these two sectors of the world economy in the Caribbean. More specifically, it uses Aruba as a case study to investigate its current strategies that constrain or support the development of existing linkages between the two sectors.

Tourism, as an international phenomenon, touches on all economic sectors. Economic benefits are probably one of the main factors why so many countries are pursuing the development of tourism. It has been argued that by promoting tourism at a destination as a strategy to boost the local economy, it will result in: a) improved transportation facilities and infrastructure which will benefit local residents; b) the multiplier effect of tourism on the development of other economic sectors; and c) the generation of enhanced local government revenue which will result in improvement of community facilities and services (Wong, 1996).

However, while many tourism destinations pursue similar strategies for increased return on investment, the negative externalities caused by tourism growth has been criticized by both social and environmental advocates. One key issue caused by tourism growth is the competition for the resources of land and labor between food production and tourism (Telfer & Wall, 1996). As for some Caribbean islands, this issue dates back to the 1970's, where Bryden (1998) found that tourism growth was already in competition with other economic sectors, "principally export and domestic agriculture".

Agriculture, in its traditional sense, is considered as one of the oldest and most basic sectors in the world economy (Torres & Momsen, 2011) and is still perceived as a vaguely old-fashioned activity, that our grandparents and their forebears' were engaged in (Southgate, Graham, & Tweeten, 2007). Yet, current biotechnical processes of modifying one agricultural species by inserting a gene from an entirely different part of the plant or animal kingdom, is evidence of the progress made to date in supplying people with enough of the food they desire at prices they can afford (Southgate, et al., 2007 pg. 4).

However, researchers claim many controversies related to the impact of current and modern agricultural processes. Some proponents claim that with modern technological improvements, much more production is obtained today from a given amount of inputs, - or equivalently, the same output is now produced with far fewer inputs (Tweeten and McClelland, 1997, p. 216, as cited by Southgate, et al., 2007). Currently, in the U.S., farmers account for less than one percent of the US population yet still manage to adequately feed and clothe America while exporting some \$50 billion in agricultural goods, more than six times (in real dollar value) what they did in 1940 (Heller & Keoleian, 2003).

On the other hand, critics claim that with a few exceptions, no country has been able to sustain rapid transition out of poverty without raising productivity in its agricultural sector (Timmer, 2005). Also, global economic restructuring has been characterized by a declining agricultural sector and the rise of service-based economies (Torres, 2003). Public spending and official development assistance to agriculture have been falling for years and there is no dispute of stagnating yields, low resilience to climate disturbances, and fractured access to credit and food markets (Nalepa, 2011). Also, advocates of alternative approaches to agriculture – all united

in their critique of industrial agriculture as being unsustainable – debated among themselves the future direction and shape of agriculture (Hansen, 1996).

In the face of current problems of climate change, rising food prices and a global financial crisis, linkages between tourism and agriculture may provide the basis for new solutions in many countries (Torres & Momsen, 2011). To support this notion, previous research conducted in the Caribbean region (Timms, 2011), also provides recommendations suggesting a potential for promoting tourism and agricultural linkages. Linkage' has been understood primarily in terms of the potential and capacity of local farmers to supply fresh produce to restaurants and resort restaurants (Richardson-Ngwenya, 2011).

This paper will not only study the linkages between the two sectors, but will also investigate the role of intermediaries, which will include restaurants, wholesalers and other local entrepreneurs that forms part of this link. Additional to the intermediaries, this paper also include investigating the influence of the tourists' perception on tourism and agriculture linkages for the case of Aruba.

### Global Tourism Development

For the past three decades; the tourism industry played an increasingly important role for local economies, which is part of a global structural change (Smeral, 2003). Categorized as the cluster of production units in different industries that provide goods and services typically demanded by tourists (UNWTO, 2010), this industry is rooted in the economy, adding rippling effects as well as assuming them from other economic sectors (Algieri, 2006). This comes as no surprise, as it is also considered the largest regional supplier for tourism developing countries



worldwide, making tourism one of the main drivers of economic growth in the region(World Trade Organization, 2002).

Despite the current economic turbulence and its effect on tourism, international tourist arrivals reached 935 million globally in 2010, which is up 58 million over 2009, representing a growth of 6.7 % (UNWTO, 2011a).However, the industry faced one of its toughest years, with international tourist arrivals declining by 4.2 % in 2009 to 880 million and international tourism receipts reaching US \$ 852 billion, a decrease in real terms of 5.7% (World Travel Tourism Council, 2010). Like other sectors, it was the credit and housing market collapse that triggered the deepest recession since the Great Depression. World Gross Domestic Product (GDP) fell by 2.1% in real terms, with developed economies, which are major sources of demand for travel and tourism, being the most severely affected. Households curtailed leisure travel plans, substituting lower-cost short-haul and domestic travel for more expensive long-haul trips, and corporations reduced business travel budgets (World Travel Tourism Council, 2010).

Fortunately, records show that long-term prospects remain strong, with 10 year growth holding up at 4.0% per year between 2011 and 2021 (World Travel Tourism Council, 2012). This, according to the United Nations World Tourism Organization (UNWTO), confirms the recovery trend beginning in the last quarter of 2009, despite the challenging conditions experienced during the recent months. According to the World Travel Tourism Council (World Travel Tourism Council, 2010), developed countries will continue to dominate global travel and tourism, while many mature markets reaching a ceiling in terms of propensity to travel, leisure is expected to provide clients for new destinations once consumers fully regain confidence. This phenomenon still exists today, as the purpose why tourists travel from their resident countries to various destinations has diversified from the traditional leisure and business into other rationales.

However, while tourism development has been an important target for most governmental and related public/private institutions, measuring their competitiveness level based on tourism arrivals, has been increasingly criticized by both social and environmental advocates. One of the cardinal reasons is that mass tourism, a synonym for the Fordist model of capitalistic development, is characterized by destinations attracting large numbers of tourists consuming highly standardized, packaged and inflexible tourism products (Torres, 2002a). Previous research studies indicate that policy makers related to the tourism industry, have used such strategy mainly because of the potential to generate foreign exchange earnings, increase tax revenues and supply new jobs, or in general, promote tourism as an engine for macro-economic growth (Ashley & Jones, 2001).

While being classified in the past as a “clean industry”, tourism growth goes hand in hand with negative effects on the society and environment (Van der Duim & Caalders, 2002). Currently, socio-environmentalists classify this industry as a “double edged sword” industry, supporting their arguments with the damaging activities caused by tourism development (Collins, 1999). Some of these damaging activities include increased pollution, traffic congestion, or devastation of fragile environments (Gursoy, Kim, & Uysal, 2004), negative effects on agricultural biodiversity, (United Nations World Tourism Organization UNWTO, 2010), and more specifically related to this research project, increased demand for imported food, resulting in foreign exchange leakages and competition with local production (Torres, 2003).

To counter argue these critiques, many academics, community groups, governments, non-government organizations (NGOs) and other international organizations have been attempting to put the theoretical underpinnings of sustainable tourism development into practice (Ko, 2005). Promoting tourism development while making nature reserves economically viable and

providing employment and income for the local population, are key strategies for the sustainable development of the tourism industry (Weaver, 1999).

Linking tourism and agriculture by creating backward and forward linkages is receiving growing recognition amongst tourism scholars, where tourism plays a vital role in agricultural sustainable development and vice versa.

While tourism and agriculture scholars make numerous references to the importance of the linkage between the two sectors (Torres, 2002a), there is a scarcity of academic literature supporting the driving force between agricultural producers/local farmers, restaurant purchasing behaviors, and food consumption and preferences that tourists might have. This research project aims to reduce this gap by including the principle stakeholders involved between the linkage of tourism and agriculture, by taking a holistic approach in analyzing existing linkages between tourism and agriculture in Aruba.

### Tourism Growth in the Caribbean and Aruba

Many developing countries, which have traditionally relied on earnings from exports of primary products, receive net currency inflows as the result of diversifying into tourism by increasing tourist flows from abroad (Sinclair, 1997, p.125). In the 1970's, most Caribbean islands, their unique geographical characteristics, also jumped on that bandwagon, and have ever since relied on the development of their tourism industry (Harrigan, 1974).

Over the following decades, the 1980s witnessed significant growth in Caribbean tourism, marked by rising incomes in North America and Europe, deregulation of U.S. airfares,

and the decline in the U.S. dollar and in the real cost of travel (De Albuquerque & McElroy, 1992).

Since then, the tourism industry in the Caribbean has grown astoundingly, becoming one of the leading sectors both in terms of job creation and foreign exchange earnings (Mullings, 2004). Current data from the 2011 UNWTO Barometer indicates an 8% growth with international tourist arrivals in the Americas, which is mostly explained by economic factors, such as the signs of recovery from the US economy and the vitality of Latin American countries. The increasing regional integration in Central and South America has also favored recovery (UNWTO, 2011b).

Even though the above mentioned data look promising, Caribbean islands are being faced with constant regional and international competition, where this heavy and growing reliance on the sector has resulted in these islands in the Caribbean being the most tourism-dependent region in the world (Rhiney, 2011). In other words, despite tourism's growing importance as an engine of economic growth, and the unique Caribbean geographical characteristics consisting of many small islands (<1 million inhabitants), researchers claim many controversies related to the impact of tourism growth on small island destinations.

Some proponents claim that tourism provides much-needed foreign exchange, creates jobs and generates government revenues, while critics argue that most of these benefits actually go to powerful national and multinational groups, such as hotel companies, franchise restaurants, travel operators and foreign investors (Vanegas & Croes, 2003b). To add to the latter statement, the Fordist approach of mass-market tourism in the Caribbean has also characterized the region by the dominance of tourism in the economy, growth stagnation, the prominence of short-stay

visitors, consuming highly standardized, packaged and inflexible tourism products (Torres, 2002b).

In this process, some small Caribbean islands experienced a transformation of their economies, from being based on agriculture to being based on tourism (Mcelroy & De Albuquerque, 1986). This is regardless of the fact that agriculture, fisheries and forestry have provided for centuries the main source of livelihood for the populations of Small Island Developing States (FAO, 2004). Across the Caribbean, especially in the smaller island in the region, tourism has replaced the traditional plantation export agriculture as the main driving force of the economy (Richardson-Ngwenya, 2011).

Also, this rapid expansion in Caribbean tourism has generally occurred alongside high rates of foreign exchange leakages and the formation of weak and unplanned linkages with other sectors within host communities (Ramjeesingh, 2006). To make matter worse, new global food systems and World Trade Organizations policies make it increasingly difficult for Caribbean farmers to compete with both domestic and export markets (Richardson-Ngwenya, 2011). According to Rhiney (2011), the above-mentioned phenomenon contributed to most Caribbean islands' tourism of being heavily dependent on imported goods and services, especially food.

For the case of Aruba, its involvement with tourism dates back to 1947, when the Aruban Tourism Commission was instituted to assess the possibilities of the development of tourism as a key economic driver for the island. According to Vanegas and Croes (2003), this strategy concurred with the appraisal of the Anglo-American Caribbean Commission in 1946, which identified tourism as a potential economic force in the region for development. Immediately after this event, the Aruba Tourism Bureau (the predecessor of today's Aruba Tourism Authority, ATA), was established in 1953 as a government controlled entity to take the lead in guiding

Aruba's tourism sector. Since then, Aruba has been considered one of the leading tourism destinations in the Caribbean, particularly if measured in terms of visitors' arrivals and gross expenditures (Table 1).

**Table 1: Tourism Arrivals of “Small” (<1 million inhabitants) Islands in the Caribbean.**

Population <1 million*	Caribbean Destination	Arrivals 2011**	Population <1 million*	Caribbean Destination	Arrivals 2011**
13,677	Anguilla	44,937	72,386	Dominica	65,976
69,481	Antigua & Barbuda	217,261	89,971	Grenada	94,770
100,018	Aruba	789,861	399,000	Martinique	410,958
305,655	Bahamas	1,121,789	9,538	Montserrat	3,992
280,946	Barbados	512,783	170,649	St Lucia	212,486
66,136	Bermuda	191,293	118,149	St Vincent & The Grenadines	64,997
23,552	British Virgin Islands	276,872	108,448	US Virgin Islands	555,273
246,600	Cayman Islands	275,738			

\* = approximately  
\*\* = stop-over data Caribbean Tourism Organization

*Source: Table created by author using Caribbean Tourism Organization Data.*

More recently, in the year 2010, Aruba experienced an estimated increase of 1.5% in number of stay-over visitors (Table 2). The stay-over visitors increased in the first, third, and fourth quarters of the year 2010 compared to 2009 (CBS Aruba, 2010).

**Table 2: Total Number of Visitors in Aruba**

	Total number of visitors				
	2006	2007	2008	2009	2010
Stay-over passengers	694,372	772,036	826,677	812,623	825,168
Cruise passengers	591,474	481,775	556,090	606,768	569,424
<b>Total</b>	<b>1,285,846</b>	<b>1,253,811</b>	<b>1,382,767</b>	<b>1,419,391</b>	<b>1,394,592</b>

*Source: Tourist Profile – Year Report 2010, Central Bureau of Statistics Aruba.*

However, the second quarter of 2010 experienced a slight decrease of 1.3% compared to the second quarter of 2009. As seasonality is a major issue for small island destinations, Aruba is no exception to the rule, as indicators supported by CBS Aruba clearly indicates that the island appears to attract only sun travelers. Also, previous researchers have argued that that small island destinations compromises the economic viability of small countries that these countries will remain the victims of larger countries (Vanegas & Croes, 2003a).

As relates to local agriculture, unfortunately, there is limited evidence to suggest that the international tourism industry has been successful in developing backward linkages to local agriculture sufficient to stimulate growth in the agrarian sector of the island. It is the assumption at this time that the tourism industry of the island has influenced agriculture in the similar ways as it did with the remainder of the Caribbean islands. These are: a) the tourism industry offered alternative employment opportunities and therefore raise the reserve price of agricultural labor and encourage migration from farming to tourist areas; b) competition for land between recreation and agriculture may have raised land values and so removes some agricultural land from food production; c) tourist activities may have modified land use and land values around resort areas; d) tourist demand for high-value and quality food may provide incentives for farmers to increase and diversify production or increase food imports; and e) tourism may have

created aesthetic uses for rural land, encouraging preservation of some rural environments and creating associated recreation-based jobs in rural areas (Momsen, 1998).

Similar to other small island destinations in the Caribbean, and in spite of their diversity, Aruba shares common constraints that impede its efforts to develop the agriculture, forestry and fisheries sectors, all this while preserving the environment. Among the constraints are fragile ecosystems, vulnerability to natural hazards, poor communication facilities (Richardson-Ngwenya, 2011), or as the case for Aruba, very dry climate, and limited vegetation or outstanding physical features with no inland water.

Regionally, a growing interest has been established among governments, the private sector, academics, donor agencies and non-profit organizations to better understand the relationship between tourism and agriculture, and to encourage interaction and to become involved in fostering these linkages (Torres & Momsen, 2011). One complementary way to enhance the linkage between tourism and agriculture is to expand the backward economic linkages by increasing the amount of local food used in the tourism sector (Telfer & Wall, 1996).

In terms of defining this linkage, Mansury and Hara (2007) proposed a strategy, where the main purpose of their study was to investigate a scenario in which a successful promotion of local agri-tourism results in stronger interdependence between tourism and agriculture. Other researchers have also pursued defining the linkage between tourism and agriculture (Busby & Rendle, 2000), by providing a chronology of definitions for the phenomena “farm tourism”.

As Inskip (1991) stated earlier, the primary reasons for the development of farm tourism are for its economic benefits which represents a mutual relationship for areas where neither farming nor tourism could be independently justified.



However, recent reports and empirical evidences suggest that the economic benefits of local food systems can be unevenly distributed (Martinez et al., 2010) and the location and distribution of these costs have not been studied for local food systems. Other logistical barriers also exist between the tourism industry and local food producing sectors. For example, competition for land and labor resources; insufficient or inadequate local agricultural development; lack of regional value-added agro-processing facilities; inadequate marketing information and infrastructure; and the propensity of foreign tourists and hotels to consume imported foodstuffs are amongst other barriers that needs to be addressed to enhance the alliance between tourism and agriculture (Torres, 2002a).

The complexity between the linkages of the two paradigms also makes the discussion and opinions in the literature quite conflicting, especially when there is a general recognition for an increased reliance on local resources (Telfer & Wall, 1996). Torres (2002b) also supports this notion, stating that optimistic development planners put forward that tourism, through the creation of backward linkages, will stimulate economic sectors such as agriculture and supplementary services. However, as described by Telfer and Wall (1996), if the local producers are to fully participate in this industry, ways must be found to institutionalize this working relationship between each group of stakeholders. Advocating locally produced foods, thus by local farmers, can be considered as a key component of the relationship between tourism and agriculture. While chefs of local restaurants and foodservice operations have recognized the benefits of local purchasing, including higher/better quality and fresher product (Gregoire, Arendt, & Strohbehn, 2005), limited empirical research has been published from the perspective of foodservice operations.

Restaurants, Chefs, and their critical role  
in fostering tourism and agriculture linkages.

The rapid growth and diversification of tourism has created the need and awareness of policy makers for a more complete understanding of this global phenomenon and the measurement of its real impact on national economies (Welford, Ytterhus, & Eligh, 1999). Regardless of a considerable progress made over the recent years to recognize the socio-economic impact of tourism development caused by this phenomenon, several factors have challenged policy makers and researchers' ability to estimate the impact of local food systems.

To tap on this phenomenon, studies have focused on the strategy of strengthening the link between food consumption by tourists as a strategy for sustainable tourism (Hertwich, 2005). More specifically, a growing body of literature already investigated the complex relationship between tourism and agriculture, focusing on the precise nature of linkages, and the constraining factors and areas of potential research (Torres, 2002b).

If a destination is to maximize the benefits from tourism and generate additional income and employment, attempts must be made to strengthen backward economic linkages, thereby reducing leakages caused by food import and increasing the indirect and induced impacts of visitor expenditures (Telfer & Wall, 2000).

Considering that food represents approximately one-third of all tourist expenditures, the level of continued imports from regional entities greatly affect the economic impacts of tourism caused by large leakages. This is especially the case for most Caribbean islands when the industry relies on imported foods (Belisle, 1983).

These barriers can be minimized by a promoting a stronger alliance between farmers and restaurant operations and their chefs, which have a substantial influence on food production and

consumption through their presentation and marketing of local food (Inwood, Sharp, Moore, & Stinner, 2009). According to Painter (2008), chefs that are aware of the benefits of locally grown foods, purchase these for a) perceived superior quality and freshness; b) to meet customer requests; c) to access unique products; and d) to support local businesses. In a study conducted by Starr, Card, Benepe, Auld, Lamm, Smith, and Wilken (2003), locally owned restaurants and institutions that purchased local food products, were more likely than the others to report that supporting local business is important if they want to remain competitive.

These institutions also reported that their reasons for purchasing locally grown foods are: a) locally grown foods have higher or better quality; b) locally grown products are fresher; c) positive relationships have developed with producers; d) customer requests have been received for locally grown products, especially after carrying local foods for a period of time; and e) the availability of unique or specialty products (Food Processing Center, 2003).

The consumption of locally produced foods, therefore, represents a unique opportunity for consumers to contribute with the increase of the linkage between tourism and agriculture, therefore enhancing food sustainability (Hertwich, 2005). Promoting social contact between consumers and producers, and making knowledge of the producer and production process as important as knowledge of the food is what Petrini (2007) advocates as a key strategy to support food sustainability.

As issues of sustainability, food culture, and community-based economic have come together, local foods have become increasingly popular in many sectors of the culinary arena (Bezahler, 2012). The convergence of these local food movements or “locavores” was mainly around the idea that a “local” food system can address the interrelated concerns with environmental sustainability, agricultural sustainability, food quality, safety and economic health

(Starr, et al., 2003). Economic impacts, in the form of income and employment growth, continue to be advocated amongst local food system researchers (Ross, Anderson, Goldberg, Houser, & Rogers, 1999). Restaurants can therefore contribute enormously towards providing both an attractive socio-economic impact to the local community, and contribute to a sustainable tourism strategy.

However, while local food purchases by the restaurant industry can promote and strengthen the linkages between tourism and agriculture, a series of logistical barriers exist, raising issues of quality and quantity which often prevent this potential relationship between the two sectors from evolving (Telfer & Wall, 2000). This scenario is twofold, extending to both end of the supply chain.

For the restaurant industry, the problem seems to be a lack of communication between industry representatives and local farmer, particular restaurants' high food supply quota and quality requirements and preference by certain types of restaurants to source cheaper priced food imports over local food provisions (Rhiney, 2011). For example, obstacles can include things from inconsistent availability and quality, to difficulty identifying reliable local suppliers, difficulty in making purchases (due to farmers' ordering procedures), to dealing with multiple suppliers (Painter, 2008).

For the agricultural industry, the main problem lies with the domestic farming sector's inability to guarantee sufficient supplies of high-quality, competitively priced agricultural produce on a consistent basis (Rhiney, 2011). Limitations may range from poorly organized food marketing and food production systems to unfavorable agro-ecological and climate conditions, infrastructural deficiencies, competition from lower priced food imports, limited use of

technology and poor access to well-needed technical and financial support (Barker & Beckford, 2008).

Therefore, this paper analyzes the linkages between tourism and agriculture through an examination of the food purchasing behaviors of commercial “tourism” restaurant establishments on the island of Aruba, by identifying major suppliers of local and imported foodstuff to the island, problems encountered by restaurant representatives when sourcing local foods, menu information, and the nationality and training experience of executive chefs.

### The demand for local food-a consumers’ perspective.

Consuming food that is produced relatively proximate to a diner’s geographic location may not seem like an innovative act to the uninformed consumer, especially since doing so was the norm until the twentieth century (Inwood et al., 2009). On the other hand, changes in the production, processing, transportation, and retailing of food over the last century has created substantial territorial, temporal and psychological space between consumers and producers, effectively masking consumers from changes in farming and the agricultural landscape (Pothukuchi & Kaufman, 1999).

The relationship between food and tourism represents a complex phenomenon. Several studies, both national and smaller scale, have explored consumer preferences for locally produced food, suggesting that while food consumers are demographically diverse, they are very similar in their motivations for buying locally produced foods (Martinez, et al., 2010)

As it relates to the tourism industry, Okumus, Okumus and McKercher (2007), stated that regardless of whether they are leisure or business travelers, 87% of US travelers participate in

some type of dining activity during their holiday. Among all possible travel items, tourists were least likely to consider cuts in budget for their food and drink. More interesting is the fact that more people are now traveling for reasons of gastronomy (Bessièrè, 1998).

According to Kivela and Crofts (2006), gastronomy tourists seek food and beverage combinations and eating experiences that foster (gastronomy) learning. For these tourists, their gastronomical experience does not only satisfy hunger and thirst but, important for them, such consumption means gaining in-depth knowledge about the local or regional cuisine, wine, and beverages and of the destination's culture. The availability of foods in a destination and locals' eating and drinking habits is considered as an attraction, which is regarded as an important pull factor for tourists in making their travel decisions (Cohen & Avieli, 2004). The above-mentioned developments in the food system clearly indicate a potential demand for locally produced foods, enhancing the synthesis between tourism and agriculture. Petrini (2007, p.66), concludes by stating that "consumers should know about agriculture, because he wants to know about his food and because he wants to support those agricultural methods that preserve biodiversity and the associated tasted and knowledge."

As mentioned by Ikerd (2009) during the 2009 Florida Small Farms Conference, the discriminating consumers who made up the local food movement wanted something fundamentally different from the food produced by the industrial food system, looking for food with integrity and would only buy food from farmers who had integrity. Historically, consumption of local foods may not seem like much of an innovation, but in today's global and industrial food system, such intentional consumption has become a philosophy on its own (Inwood, et al., 2009).

While most consumers report buying local foods, knowing the amount that consumers would be willing to pay is useful for marketing of local foods. Encouragingly, previous research has revealed that consumers are generally positive about locally produced foods (Chambers, Lobb, Butler, Harvey, & Bruce Traill, 2007). However, there is little information about the perceived and actual barriers that prevent tourists from buying more local foods, and it is not clear what tourists exactly appreciate in local foods. In order to promote marketing possibilities for local foods, it is important that we understand how consumers perceive the concept of local food and what advantages or disadvantages and values they relate to the concept (Roininen, Arvola, & Lahteenmaki, 2006).

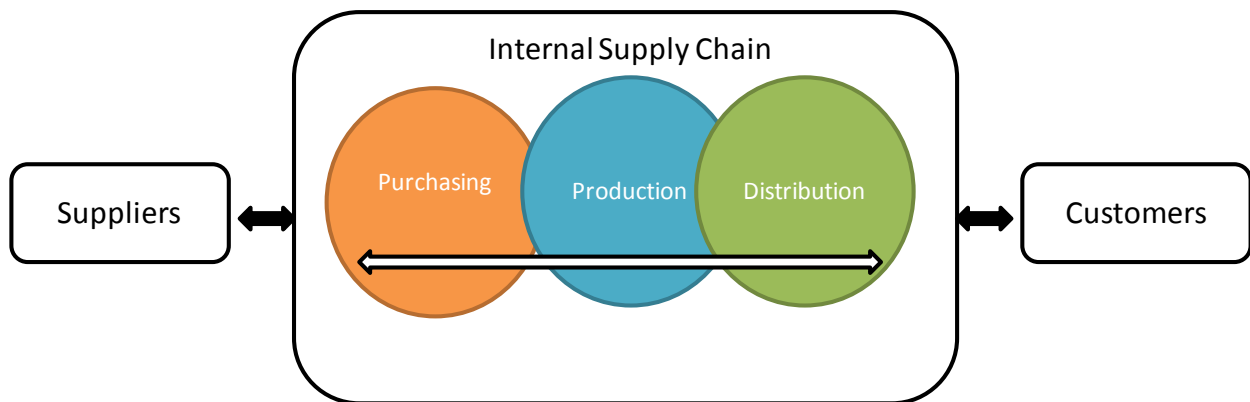
This paper analyzes food consumption and preferences by nationality and tourist type in order to reinforce existing linkages between the demand for locally produced foods, restaurants promoting locally produced foods, and farmers producing locally produced food products. Reinforcing existing linkages between all three sectors (tourism, restaurant, and local farmers), will create a competitive advantage for the island of Aruba by delivering value to the customers. However, it is key to investigate how that value is created or lost in terms of strategies undertaken by each of one the above-mentioned sectors.

From Supply Chain Management (SCM)  
to Supplier Relationship Management (SRM)  
to Customer Relationship Management (SRM).

Supply Chain Management (SCM) describes the activities within and around an organization which together create a product or service. It is the cost of these value activities and the value that they deliver that determines whether or not best value products or services are

developed (Johnson, Scholes, & Whittington, 2005, p.136). Supply Chain Management (SCM) and other similar terms, such as network sourcing, supply pipeline management, value chain management, and value stream management are subjects of increasing interest to academics, consultants and business managers (Croom, Romano, & Giannakis, 2000).

SCM is ultimately about influencing behavior in particular directions and in particular ways, underlying logics, drivers, enablers and barriers (Storey, Emberson, Godsell, & Harrison, 2006). Essential is to identify and analyze a domain of theory and practice, where a mode of thinking and action which encompasses and seeks to exploit interlocking relationships could potentially be used as a powerful strategy for competitive advantage (Ketchen & Giunipero, 2004). Analytically, a typical supply chain is a network of materials, information, and services processing links with the characteristics of supply, transformation, and demand (Figure 1) (Chen & Paulraj, 2004).



**Figure 1: Illustration of a company's Supply Chain**

*Source: Chen, J., Paulraj, A. Article: Towards a theory of supply chain management: the constructs and measurements.*



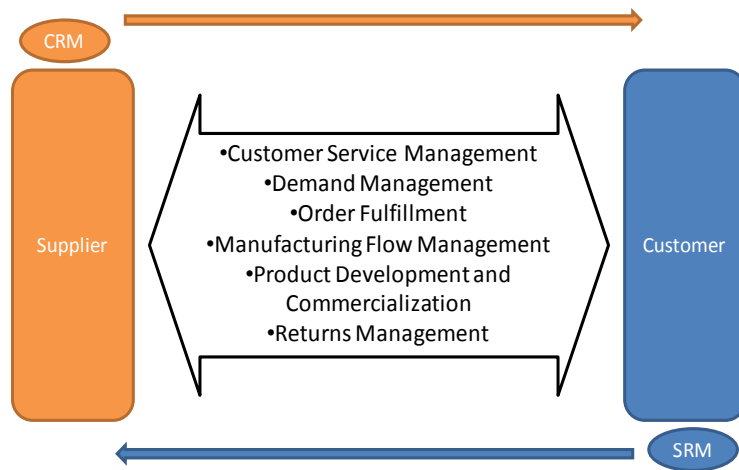
Even though the term Supply Chain Management (SCM)'s origin are unclear, some authors states that it was originally introduced by consultants in the early 1980s, conceptually the management of supply chains is not particularly understood, and many authors have highlighted the necessity of clear definitional constructs and conceptual frameworks on supply chain management (Cooper, Lambert, & Pagh, 1997). According to Storey et.al (2006), "if supply chain management is to mature as a discipline, there needs to be further progress in clarifying its domain, its central problems, its core components, its theories and its theoretical map.

As tourism destinations generally comprises of different types of complementary and competing organizations, infrastructures and an array of public/private linkages that create a diverse and highly fragmented supply structure (Rodríguez-Díaz & Espino-Rodríguez, 2008), it becomes even more critical to propose an alternative from the current SCM, which encompasses other intangible factors present within the tourism industry. For example, the development of partnership relations is essential to improve competitiveness in tourism, particularly in the supply chain, where strategic alliances have been formed with the aim of developing tourism destinations (Telfer & David, 2000). In other words, collaboration can lead to reduced unnecessary inventories, redundant purchasing agents, cost-savings for the purchasing firm, therefore increasing business and information about competitors for suppliers (Moeller, Fassnacht, & Klose, 2006).

More specifically related to this paper, accommodating practical issues that result from the inter-relationships between suppliers, producers, and consumers in the food supply chain is a much more complex task than assuring supply or managing single purchasing transaction with different suppliers. As suggested by Park, Shin, & Chang (2010), the relationships with suppliers need to be managed more actively within a Supplier Relationship Management (SRM) model by

the purchasing firm in order to make the best out of every relationship. Supplier Relationship Management (SRM) has become a more critical process as a result of: a) competitive pressures; b) the need to consider sustainability and risk; c) the need to achieve cost efficiency in order to be cost competitive; and d) the need to develop closer relationships with key suppliers who can provide the expertise necessary to develop innovative new products and successfully bring them to the market (Lambert & Schwieterman, 2012).

However, as tourists form part of the above mentioned linkage, it is necessary to emphasize the importance of integrating Customer Relationship Management (CRM) as part of the proposed Supplier Relationship Management (SRM) framework. One key reason is that while theory suggested that supply chains should be demand led, it has proved difficult to find empirical data in support of such an approach (Godsell, Harrison, Emberson, & Storey, 2006). On the other hand, customers come to increasingly demand and expect higher quality products and services, and this is no exception in the foodservice sector. The CRM framework provides fast and efficient transactions to help producers to acquire, serve, and retain the ever-growing numbers of customers, and can empower their customers to interact more directly with the company and deliver personalized products and services that build customer trust and loyalty Figure 2 (Choy, Lee, & Lo, 2002).



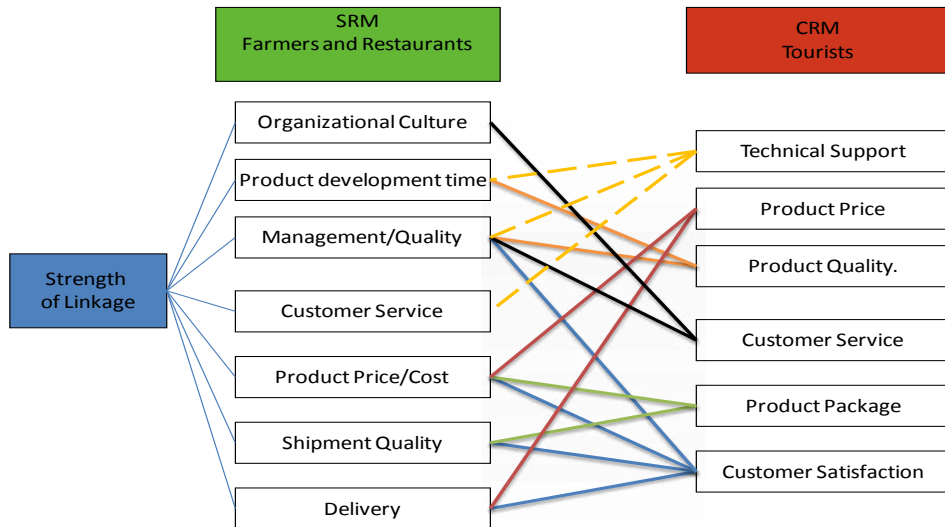
**Figure 2: The Supplier Relationship Management (SRM) and the Customer Relationship Management (CRM)**

*Source: Lambert, D.M., Schwieterman, M.A., Article: Supplier Relationship Management as a Macro Business Process.*

However, the above illustrated figure by Lambert and Schwieterman (Figure 2) has the traditional six (6) business processes, which are a) customer service management; b) demand management; c) order fulfillment; d) manufacturing flow management; e) product development and commercialization; and e) returns management, which are directly linked to the traditional Supply Chain Management framework. Even though these business processes are necessary steps in integrating a firm with other members of the supply chain, this article would like to propose Choy's integrated SRM/CRM framework as a foundation to investigate the linkage between the three sectors.

According to Choy et al. (2002), integrating supplier/customer relationship management (SRM/CRM) is mainly to facilitate supply chain management in the areas of supplier selection, forming an integrated supply network that allows the most appropriate

supplier of the producers to deliver the competitively priced, high quality products and services to their final customer according to their demand effectively (Figure 3).



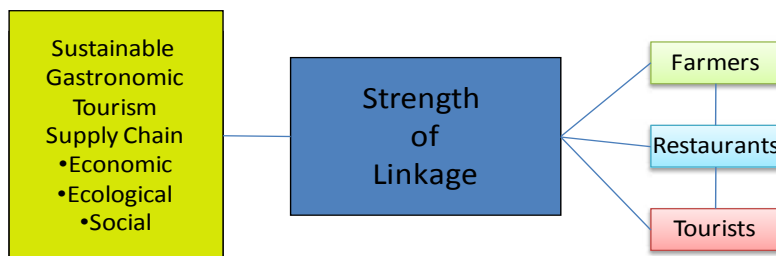
**Figure 3: The Supplier Relationship Management (SRM) and the Customer Relationship Management (CRM)**

*Source: Table created by author, using Choy’s proposed framework of SRM and CRM.*

As shown in Figure 3, for example, customer satisfaction is related to quality, shipment quality, delivery and product price.

However, the paper will not use all the factors involved in Choy’s integrated SRM/CRM framework, but will integrate factors which are based on previous related literature conducted in the Caribbean region, which derives from articles from Momsen, Rhiney, Richardson-Ngwenya, and Torres. They are: a) Product Cost/Price; b) Marketing ability; c) Sanitation and Food Safety; d) Availability/ Delivery; e) Government Policy; and f) Background of Chef (Figure 5).

Sustainable Gastronomic Tourism (SGT) Supply Chain’s framework (Figure 4) is based on the approach where agricultural production (local farmers), food production (restaurants) and gastronomy (tourists) are interconnected in three basic principles: a) Economic; b) Ecological; and c) Social. Three dimension of sustainable development are suggested, which are namely: 1) the economic dimension; 2) the social dimension; and 3) the environmental dimension. Because of the magnitude of investigating all three principles, this paper will mainly focus on the economic attribute to this proposed supply chain.

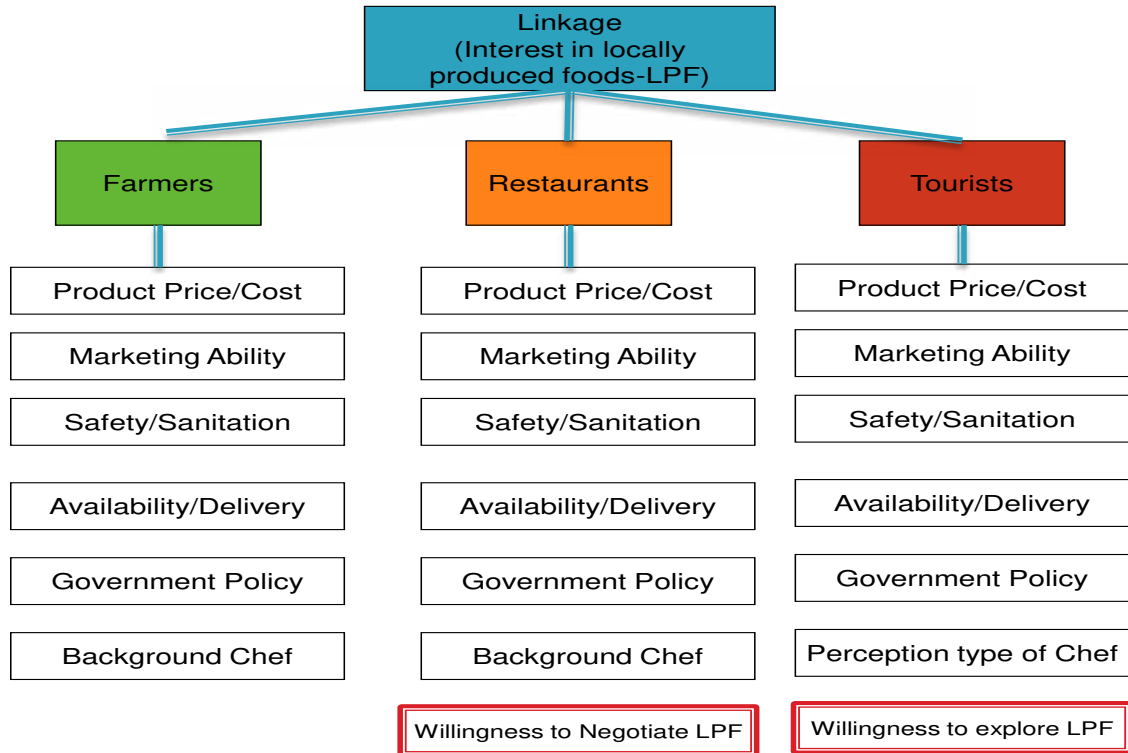


**Figure 4: Strength of Linkage as a proxy for Sustainable Gastronomic Tourism (SGT) Supply Chain.**

*Source: Table created by author using previous literature.*

This article’s main purpose is to provide a categorization with which to evaluate the current linkage between local farmers, restaurants and tourist for the island of Aruba. Figure 5 illustrate provide a set of proposed constructs found in previous literature that either diminished or enhanced the relationship in the food supply chain between farmers and restaurants.

Additionally, this study proposes a 360 degrees approach which also includes the visiting tourists’ perception of which of the above-mentioned constructs directly or indirectly affects the food supply chain of the tourist destination being investigated (Figure 5).



**Figure 5: Proposed constructs for a food supply chain between farmers, restaurants, and tourists for small island destinations.**

*Source: Table created by author, using Choy's proposed framework of SRM and CRM as a foundation for this proposed framework.*

### Research Questions/Propositions

With the above-mentioned arguments in mind, the following research questions were formulated:

1. Is there a difference between farmers and restaurants' perception towards the variables of Product Price/Cost, Marketing Ability, Safety/Sanitation, Availability/Delivery, Government Policy, and Background of Chef as it relates to local foods?

2. Which predictor constructs contribute the most to discriminating between tourists' interest in Locally Produced Foods and tourists' lack of interest in Locally Produced Foods?

The article will empirically examine whether there is a difference in means between farmers' perception and restaurant operators' perception towards Locally Produced Foods, using strength of linkage as a proxy. More specifically, this paper proposes the following propositions:

Proposition 1: The more effective the price negotiation between local farmers and restaurants, the higher the degree of exploring Locally Produced Foods by tourists.

Proposition 2: The higher the degree of marketing of both local farmers and restaurants towards the tourism industry, the higher the degree of exploring Locally Produced Foods by tourists.

Proposition 3: The higher the degree of sanitation/food safety of local farmers and restaurants, the higher the degree of exploring Locally Produced Foods by tourists.

Proposition 4: The higher the degree of availability and quality of delivery from local farmers to restaurants, the higher the degree of exploring Locally Produced Foods by tourists.

Proposition 5: The higher the degree of government policy to support local farmers, the higher the degree of exploring Locally Produced Foods by tourists.

Proposition 6: The higher the degree of educational and national background of the chef/manager (academic and nationality), the higher the degree of exploring Locally Produced Foods by tourists.

Proposition 7: The stronger the linkage between farmers and restaurants in terms of availability, promotion, health and sanitation standards, background of the chef, and trained staff members (farmers and restaurants), the higher the degree of exploring Locally Produced Foods by tourists.

## Methodology

This study focuses on the fundamental relationships between tourism and local agriculture. More specifically, the primary objective of this research is to explore factors related to the linkage between the agricultural sector, the restaurant industry and the tourism industry of Aruba. However, to investigate the island's complex food supply chain, this paper's methodology undertook a three phase approach with an integrated approach to capturing the complexity of the intersection of local agricultural communities, global cuisines, and international tourism flows.

This research incorporates three separate structured surveys, which entails one for the local farmer, one for restaurants on the island, and one for the tourists that have already visited the island. All three surveys will highlight the constructs elaborated in the following literature review section, to investigate each group's perception of the island's current food supply chain. First survey will identify the farmer's, perception towards promoting and selling the locally produced food products, and the challenges faced during this process. Additionally, questions focusing on their perception about linking their products with the tourism industry will be included in this phase.

Second, the restaurant industry's perception towards selling locally produced foods on their menus is identified in conjunction with their challenges faced in the logistics between farmers and restaurants. Hotel restaurants, restaurants, restaurant owners, F&B managers, and chefs, and wholesalers will be interviewed using a semi-structured list of questions to define the



restaurant industry's characteristics, food supply and demand, and linkages to local agriculture in Aruba.

Third, using a random sampling technique, of tourists that have visited the island will be provided with an online survey with the main purpose to identify their perception about their current consumption preferences in order to identify the potential for stimulating new demand for locally grown food products.

#### Delimitation and the Search for Future Research.

For a literature review, it is impeccable to define clear boundaries to delimitate the research (Seuring and Muller, 2008 p. 1701). First, this research project aimed mainly at papers in trade journal and peer-reviewed scientific journals in English. Second, publications with the main topic of environment and agriculture were not considered. Third, papers with focus on the reverse logistics of the supply chain and remanufacturing were not included. The search for related publications was mainly conducted as a structured keyword search. Major online databases were used to search for related articles. These were Ebsco, Elsevier, Emerald, and Springer.

## CHAPTER TWO: LITERATURE REVIEW

### Understanding Tourism Development on Aruba.

The tourism industry has passed through different stages until it has become a gigantic instrument in the developmental strategy of a good number of countries (Wahab & Pigram, 1997, p. 277), and until recently it continues to represent a major segment of national economies. The industry also represents a major segment of the national economy and is a significant economic sector in many state and local economies (Wong, 1996). This is no different compared to the Caribbean region.

The Caribbean region has been relatively successful in pursuing the strategy of tourism specialization (Algieri, 2006b; Croes, 2005; Lanza, Temple, & Urga, 2003; Oyewole, 2001; Pigliaru, Brau, & Lanza, 2007), becoming the largest regional supplier of tourism developing countries worldwide, making tourism one of the main drivers of economic growth in the region (World Trade Organization, 2002). The island of Aruba, located in the southern Caribbean Sea, also pursued similar strategies with competitive results since entering the tourism market. However, limited to a handful of empirical studies related to the historical aspect of Aruba's tourism development exists, and the following section will highlight the key historical factors related to the island's tourism strategy towards tourism growth.

Throughout the time period of 1950, tourism growth has been led by the development of relatively large blocks of accommodation and at irregular levels (Cole & Razak, 2003). The first couple of hotels were developed to offset unemployment caused by the automation of the Lago Oil & Transport Company, a refinery which was strategically built to process crude oil from

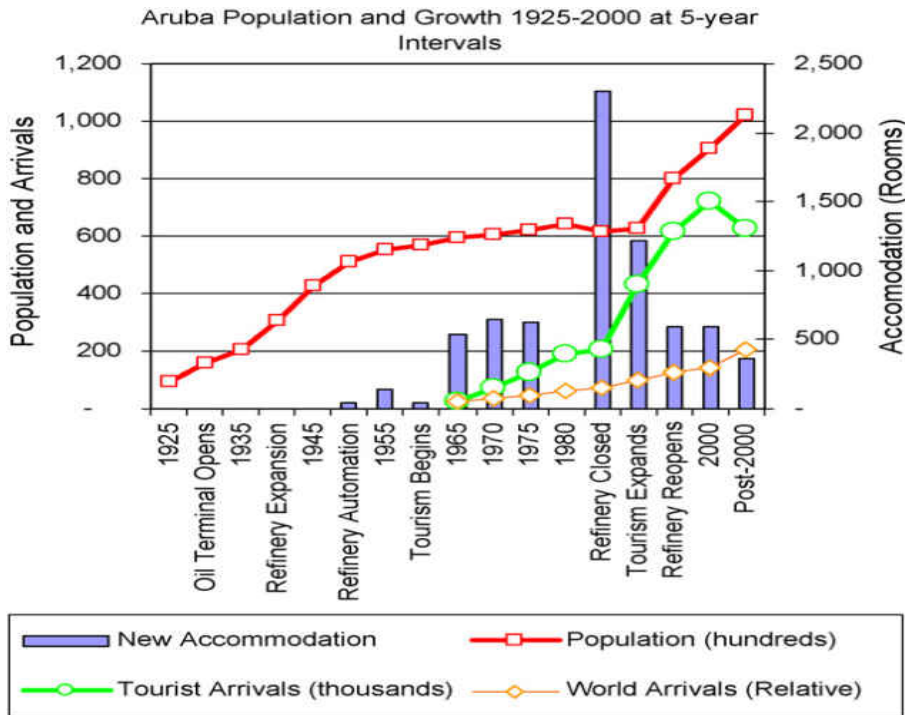
Maracaibo, Venezuela, and then shipped to other destinations. Only a limited amount of hotels serving cruise visitors and business were then in operation; yet it must be highlighted that the growth of tourist arrivals was relatively steady until the recession of the early 1980's.

Nevertheless, the potential for tourism in Aruba was recognized and a far-sighted Tourism Commission began to scope the possibilities for a new hotel on what eventually became the Tourist Strip (Aruba Tourism Authority, 2003).

The closing of the refinery in 1985 on the other hand, created a serious political engagement for job creation to enhance export promotion, where the local government of Aruba decided to promote tourism as a leading export sector for the island's economy (Vanegas & Croes, 2003a). However, the guarantee-driven construction boom following the final closing of the refinery slowed with the moratorium on new construction in the early 1990's (Cole & Razak, 2003).

Not long after the closing of the refinery, the government invested heavily to increase the economic and social infrastructure to serve hotels and other tourist facilities, with direct support through hotel loan guarantees to assist private investors, tax holidays and other fiscal incentives (Vanegas & Croes, 2003b). To offset unemployment, the government also accelerated the First Tourism Plan, causing a reverse decline in tourism arrivals, and between 1985 and 2000, another ten (10) hotels with some additional 4000 rooms were constructed (Cole & Razak, 2009). More specifically, between 1975 and 2000, the number of hotel rooms increased by a factor of 5.9, from a factor of 5.9, from 1303 rooms in 13 hotels of international standard in 1975 to 7692 rooms in 29 such hotels in 2000, or an increase of nearly 500% in the number of hotel rooms. By 2000, the inventory of the hotels in Aruba encompasses some of the world's largest and finest

hotel chains such as Hyatt, Marriott, Radisson, Wyndham, Sonesta and Renaissance (Croes, 2000). An historical overview of Aruba’s tourism growth and events are highlighted in figure 6.



**Figure 6: Aruba Tourism and significant events from 1925 on.**

Source: Table created by Cole S. & Razak, V. Article *How far, and how fast? Population, culture, and carrying capacity in Aruba.*

Since then, Aruba’s success in tourism has been attributed to its natural endowment of “sun, sand, and sea”, but also to the warmth and hospitality of the population that has been attested by visitor surveys contributing to a high level of return visitors and the enviably high occupancy rates in the hotels (Cole & Razak, 2009). The direct contribution of travel and tourism to GDP was Awg 1,024 million in 2011, and is forecast to rise by 8.5% in 2012, and to rise by 2.2% pa from 2012-2022 (World Travel & Tourism Council, 2012).

Also, in terms of visitors' exports, it generated Awg 2,416 million in 2011, which is forecasted to grow by 6.8% in 2012, and grow by 1.8% pa, from 2012-2022, to Awg 3,090 in 2022. Previous data on the economic development related to tourism clearly indicates that policy makers, especially government planners emphasized on the potential positive economic impacts, and particularly on the creation of new markets.

However, with positive economic development and growth, other negative impacts also emerge. Related to internal shocks, Cole & Razak (2009) argued that the overbuilding and operation of new hotels also created an unanticipated new wave of immigration. Regardless that the characteristics of these immigrants were from the Spanish Caribbean basin, their cultural and linguistic background were not similar to the Arubans. Similar phenomenon caused island migration to urban spread out and increased destruction of the island's natural landscape, which is not only obvious to the island's tourism corridor, but also to the underdeveloped and fragile north shore of the island. In the "Nos Aruba 2025 National Integrated Strategic Plan" for example, three main policies were suggested to alleviate these issues: a) to curb hotel room capacity as to focus tourism on quality and not quantity; and b) promote the exclusive character of the island as a high-end destination and stimulate boutique hotels; and c) have tourism being the island's largest economic sector although it contributes only 40% of GDP down from 60% in 2008.

Other concerns related to the uncontrolled economic growth of the island were also expressed in the "Nos Aruba 2025 National Integrated Strategic Plan" (2009), stating:

"The island has been experiencing an imbalance between economic growth and the social development which has lagged behind. The Aruban society is under powerful stress from

overpopulation and work force immigration. These developments have contributed to a sense of a rising crime rate, less social tolerance towards each other and family structures rapidly are falling apart. Our culture is at risk to global aggressive cultural globalization. The economic development has stimulated a sedentary lifestyle on Aruba which has resulted in a yearly increase of overweight cases and obesity on the island in all age categories due to bad nutrition habits and lack of movement and physical activities.”

Such strategies of overexpansion also increased the risks of the island in terms of external shocks, which small islands are extremely vulnerable to. According to IMF’s 2010 report (International Monetary Fund, 2010, p.3), since 2008, a series of adverse external shocks have increased the Aruba’s competitive position within the Caribbean region.

For example, since 2008, a) tourism has declined in the wake of the global downturn, compounded by a sharp decline of condominium construction for non-residents; b) with the shutdown of Aruba’s oil refinery in July 2009 (the second one), more than 2,000 jobs were directly or indirectly affected; c) real GDP decreased by 7.5% in 2009, making Aruba’s slump one of the most severe in the Caribbean; d) unemployment increased sharply to 11.3% amid rapid disinflation; and e) consumer prices fell by 2.1 % (annual average) in 2009, owing largely to a sharp decline in volatile energy and food prices. Yet, having a reputation as a “high-end” destination, data from the Caribbean Tourism Organization suggest that Aruba’s market share actually increased in both 2008 and 2009, as tourism losses have been concentrated in lower-cost segments of the market (CTO 2009 as cited by IMF 2010).

Despite the optimism amongst Aruba’s tourism stakeholders for the continuous growth in tourism, globally, the industry is known to experience hyper dynamic state of changes which is

reflected by a variety of external factors (Evans, Fox, & Johnson, 1995). These changes are reflected by new tourism products, regulatory changes, globalization, and use of new technologies, increasing world debt, changing consumer preferences, globalization of the airline industry, economic cycles and in particular environmentalism. While tourism has been appreciated as a contributor to the national economies of some leading tourist destinations, especially for small island destinations, lack of sufficient information about the scope and essence of that activity as well as some of the processes linked to it are still widespread (Wahab & Pigram, 1997, p. 278).

Generally speaking, much of the analysis of this industry has focused on the positive impacts on employment, income, tax revenue, and local economic growth and development (Wong, 1996). This was not only because such impacts are more readily quantifiable and measurable, but there was also a pervading climate of optimism that these studies would show that tourism was of net economic benefit to host destinations (Archer, Cooper, & Ruhanen, 1998). Much of the economic literature has been technical in nature, being concerned with the applications of cost-benefit analyses, and economic multipliers (Wahab & Pigram, 1997).

However, some concerns about this measurement bias were already expressed back in 1973. It was stated by Young (1973) as cited by Wong (1996), that there is a saturation level for tourism, and if that level is exceeded, the cost of tourism begin to outweigh the benefits. Throughout different regions of the world, tourism facilities have sprung up in many destinations without proper planning for ecological and vulnerability concerns related to economic growth related to tourism. The above-mentioned saturation can be blamed by the mass tourism approach that many small island destinations, which are dependent on tourism, pursue in order to remain

competitive. In other words, the approach of “more is better” is not always an economic advantage for vulnerable small island destinations, and Aruba is no exception to the rule.

The following section highlights Aruba’s tourist arrival model geared towards mass tourism. This simple “build it and they will come” strategy is qualified and modified in several ways that account possibilities for improved marketing, product quality, and diversification of the island’s tourism products, yet other factors such as environmental degradation or overcrowding are often ignored (Cole & Razak, 2009).

### Challenges and opportunities with Aruba’s tourism strategy

Since Aruba’s tourism industry is largely dependent on natural resources, improper tourism planning can have constraints on land, labor supply, infrastructure capacity, and local citizen tolerance, which lead to negative externalities being imposed upon local residents (Wong, 1996). The extent and nature of the environmental and ecological damage done by tourists is related to the magnitude of the development and the volume of visitors, the concentration of usage both spatially and temporally, the nature of the environment in question, and the nature of the planning and management practices adopted before and after development takes place (Archer et al., 1998).

To remain competitive, a destination's tourism development must be sustainable not just economically, but also ecologically, culturally and socially (Crouch & Ritchie, 1999). In other words, pursuing tourism growth with simply applying the mass tourism strategy, conflicts with sustainable tourism development strategies. Mass tourism has similar parallels to the Fordist approach of modern economic production processes as a form of capitalistic development.



Directly related to this article, these approaches include product standardization; inflexibility; economies of scale; mass replication; small numbers of dominant producers; and mass marketing to undifferentiated clientele (Urry 1990 as cited by(R. Torres, 2002a), which can be argued to have caused an unsustainable approach of tourism development.

Typically, as stated by Smeral (1998), mass tourism is characterized by a small number of producers, often, transnational corporations that dominate world markets, and where the power and control lie in the hands of producers rather than consumers. Another specific example in tourism is the highly structured and institutional package tours (Torres, 2002a). This approach is highly dependent upon the offering of bargain prices to large numbers of middle class consumers. As it relates to Aruba, numbers looks positive, but are inconsistent and there is room for improvement. For example, for 2010, the household income of the visitors coming to Aruba is on average more than US \$50,000, and the category of more than US \$50,000 was 59.5%, which is an increase of 8.2% compared with the previous year (Table 3).

**Table 3: Yearly Household Income of visitors in Aruba (in percentages).**

	Year	Year	Year	Year	Year	Change	Change
	2006	2007	2008	2009	2010	09/08	10/09
Less than US\$20,000	4.9	5.1	5.3	5.9	5.3	11.3	-10.2
US\$20,001 - US\$30,000	4.8	4.0	5.1	5.9	5.5	15.7	-6.8
US\$30,001 - US\$50,000	14.8	14.6	15.4	14.7	14.3	-4.5	-2.7
US\$50,001 - US\$75,000	25.4	28.2	31.5	27.9	30.0	-11.4	7.5
US\$75,001 - US\$100,000	14.9	17.6	16.9	13.1	15.3	-22.5	16.8
US\$100,001 and over	17.5	13.0	13.8	14.0	14.2	1.4	1.4
Unknown	17.8	17.6	12.0	18.5	15.4	54.2	-16.8
Total	100%	100%	100%	100%	100%		

*Source: Tourist Survey-Central Bureau of Statistics-Aruba.*

Historically, the first step to achieve this balance between sustainable development and economic growth for travel and tourism was in 1996. The World Travel & Tourism Council (WTTC), the World Tourism Organization (WTO) and the Earth Council, together launched Agenda 21 for the Travel & Tourism Industry: Towards Environmentally Sustainable Development – a sectoral action plan for sustainable development based on the outcome of the Rio Earth Summit in 1992 (WTTC, 2002).

In order to create the balance of tourism growth and the preservation of the environment and of cultural, social and historical heritage, many academics, community groups, governments, non-government organizations (NGOs) and other international organizations have already been attempting to put the theoretical underpinnings of sustainable development into practice (Ko, 2005). Dialogue between stakeholders in both the private and public sectors, has led to the

establishment of global voluntary initiatives throughout the last decade (World Travel Tourism Council, 2002). These initiatives have taken various forms and represent all sectors of the travel and tourism industry, but little practical methodology has been developed (Ko, 2005).

As it relates to Aruba, the “First Aruba Tourism Plan” was not prepared until 1981 (Spinrad, 1981) which at that time, the island began final negotiations for greater independence from Holland. However, it was till 2002 that the First Aruba National Tourism Conference was held, where a wide spectrum of interests across the industry and the island communities identified goals for tourism (Cole & Razak, 2009). This conference proposed three alternatives tourism styles and policies.

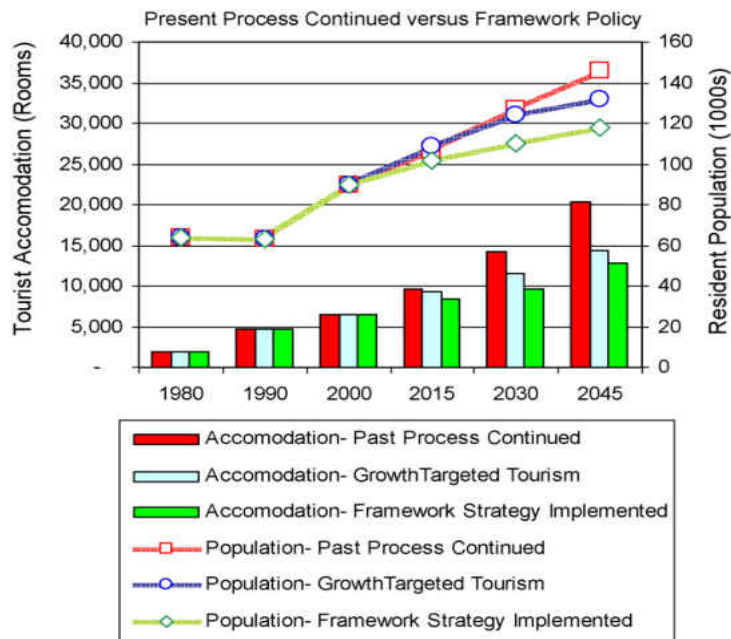
**Table 4: Alternative tourism styles and policies.**

	Policy	Style of hotel	Outcome
Scenario 1	Occupancy driven tourism	Luxury chain hotels	Reproduces problems in past policies
Scenario 2	Growth targeted tourism	Aruba average hotels	Accelerates approach to limits of tourism development
Scenario 3	Match growth to Aruban needs	Smaller boutique hotels	Provides starting point for framework

*Source: Cole, S. & Razak, V., Article How far, and how fast? Population, culture, and carrying capacity in Aruba.*

The following is a description by Cole & Razak (2009), about the different stages discussed during the conference. The National Tourism Council first stage assembled statistical studies, supplemented historical reviews, surveys, interviews, and projections. The second stage developed and evaluated three tourism scenarios (Table 4). These projected the previously suggested tourism strategies for the island: “Occupancy Driven”, “Grow faster than the Caribbean”, and “Matching growth to Aruban needs.” The aim was to understand the economic

and demographic impacts and growth dynamics inherent in each style of tourism development (3rd stage). This, primarily indicated by the “scale” of activity in terms of the “style” of accommodation and ownership, visitors and their activities, and the phasing of new constructions. The associated projections related to the comparison of growth of populations and accommodations across the National Tourism Council are illustrated in Figure 7.



**Figure 7: Comparison of growth of population and accommodation across NTC scenarios.**

*Source: Cole, S. & Razak, V., Article How far, and how fast? Population, culture, and carrying capacity in Aruba.*

A series of conferences followed till 2005, where similar strategies were proposed and discussed. Table 5 summarizes a timeline for policy-making over the history of tourism in Aruba. It is essential to highlight that the authors of the table were involved in the first three NTC stages of Aruba, while at the same time it must be emphasized that the development of

small scale, luxury “boutique” hotels, which was suggested by Cole (2001) was not implemented.

**Table 5: Timeline for Aruba tourism, tourism styles and policies.**

Stage/Approach	Policy/Event	Style of Accomodation	Objective/Outcome
Lete 1940s - 1960	Cruise ship visitors stay-over	Small and mid-scale accomodation	Familiarity of former US refinery employees
	Setting up of Aruba Tourism Commission		Identify tourism resources and style of tourism
Early 1960-1980	Initiation of Mass Tourism through Public Subsidy	Large Chain Hotel/Casinos oriented to US market	Offset unemployment due to refinery
Early 1980s			
-First Aruba Tourism Plan	Slowing growth and uncertain future	Shift to timeshare and upgrading of properties	Occupancy-driven investment prescription and physical plan for tourism corridor
-Macro-plan for independence	Adjust pace and style of tourism	Add Aruban scale and diversity	Cautioned agains rapid expansion given low unemployment
Mid-1980s- Emerging Crisis and Concerns	US Recession, refinery shutdown, transition to status aparte	Increasingly large scale properties based on "speed-up" of First Tourism Plan	Considerable overbuilding leading to delays and demolition of new properties and rapid immigration
National Tourism Council (NTC)	Public and tourism industry related concerns	Clarify existing tourism product and possible new options	NTC and annual conferences-bridge public, private, and political divides
NTC 1 (2002) Issues and goals	Consultants presentations and local brainstorming	Employment, income and revenue impacts of hypothetical alternatives	Exploration of past policies agreement on goals
NTC 2 (2003)			
-Scenario 1	Occupancy driven tourism	Luxury large chain	Reproduces variability and stop-go growth of past policies
-Scenario 2	Growth targeted tourism	Aruban-owned mid-size	Reduces variability but accelerates approach to limits of tourism development
-Scenario 3	Match growth to Aruban needs	Small boutique and increments to stock	Provides starting point for new style with smoother expansion
NTC 3 (2004) Culture Region Framework	Match to income, fiscal, demographic cycles	Improve existing style and successfully augment with new culture regions	Demonstrate smoother expansion paced to Aruba needs and carrying capacity with illustrative Aruba-centered projects
NTC 3 (2005) Variants and policy challenges	Match to contingencies, immigration policy, fiscal, policy etc.	Compare scale, composition, and timing of new accomodation and other policy	Anticipate surprises
			Island-wide focus groups Tourism education programs Quality improvement programs
Series of events, controversies, and delays	"Unforeseen" events, investments and policies	Stategic Tourism Plan	Implement first phase of evolved framework Begin strategic (mid-sized) plan
NTC future?	Regular strategic adjustment	Fine-tune visitor and Aruban needs	Extend time-horizons via

*Source: Cole, S. & Razak, V., Article How far, and how fast? Population, culture, and carrying capacity in Aruba.*

However, it was in 2009, that the Department of Economic Affairs, initiated the project “Nos Aruba 2025 National Integrated Strategic Plan”, which was funded by the “Fondo Desaroyo Aruba (Aruba Development Fund). The FDA, which is a funding strategy agreement between the Netherlands and Aruba, was established with the goal in mind that the Netherlands will gradually reduce the level of development aid to Aruba, where Aruba would become financially independent after a ten-year period ([www.government.nl](http://www.government.nl)).

The project is unique compared to previous NTC projects, as it chose a different methodology, where not only representatives the public and private sectors were involved, but this time representatives of the community in general were also involved. Members of the different political parties on the island, Parliament members, government representatives and public servants, stakeholders in the private sector, civil society and the community in general were consulted throughout a period of almost two years.

The framework “Nos Aruba 2025” was developed using the “Appreciative Inquiry (AI)” method (The Department of Economic Affairs Aruba, 2009), which is an organizational method which focuses on increasing what an organization does well rather than on eliminating what it does badly (Dick, 2004). However, one particular strategy, “Protecting the environment and promoting conscious use of natural resources” illustrates the importance on sustainability, and more specifically, to sustainable agricultural practices.

With this approach, it was suggested to reduce the dependency on the import of food where the island will be able to produce a part of their own food by 2025 (The Department of Economic Affairs Aruba, 2009). More specifically, by 2025, Aruba must have reduced its dependency on the import of food by 10% following policies such as: a) introduction of the “Programa Internacional di Agricultura (PIA-translated International Program for Agriculture);

b) create starters packages with seeds, with a soil food web analysis; c) ratified bio-safety protocol; d) implement protocols on organic growing; e) create a farmers market and a farmers' cooperative; f) rethink and implement the usage and storage of rainwater; and g) create an organic seed bank.

The following section discusses how the tourism industry, specifically the restaurant can contribute to support previous mentioned strategies towards a more agricultural sustainable development for the island of Aruba.

### Food and Tourism: going local, going back to nature.

Food consumption can be recognized as a collection of contextual and evolving social practices, where food no longer serves as nourishment but also a way to relate to other people's social, cultural and political terms (Mak, Lumbers, & Eves, 2011). However, the study of the social significance of food and eating, has mostly been investigated by social anthropologists and social historians (Reynolds, 1993). Their claim is that food is part of a physio-logical, psycho-sensorial, social and symbolic environment (Bessière, 1998). Food means more than eating as it relates to issues of identity, culture, production, consumption, and increasingly, issues of sustainability (Hall & Mitchell, 2000).

Food consumption acknowledged to bear 'symbolic' significance as for example as a marker of social distinction, and a way for encountering and experiencing other foodways and cultures (Mak, et.al., 2011). Therefore, it can be argued that food has come to be recognized as part of the local culture that tourists consume, as part of tourism promotion, a potential component of local agriculture and economic development, and as something at the local level

that is in itself affected by the consumption patterns and perceived preferences of tourists(Hall & Mitchell, 2000).

Tourism involves activities of both tourists (food consumption) as well as the activities of tourism suppliers (food production). Consumption of food, especially when dining out, is a pleasurable sensory experience, hence the pleasure factor or the “feel good” factor as a result of food consumption at a destination is a ”pull factor” and a marketing and merchandising tool that must not be underestimated (Kivela & Crofts, 2006). For example, local cuisines represent a core manifestation of a destination’s intangible heritage, and through its consumption, tourists can gain a truly authentic cultural experience (Okumus et al., 2007). Therefore, it can be argued that food consumption in tourism can be either the peak (core) experience or the supporting experience for tourists depending upon specific circumstances (Quan & Wang, 2004).

There are many examples of how the interrelationship between food/food and wine and tourism and regional development has been put into practice around the world, by either the development or promotion of a specific product, course, event, service or any combination of products and services (Du Rand & Heath, 2006). Also, several academic literature suggests that the success of a tourist destination is closely related to its gastronomic identity (Fox, 2007).

There have been several attempts to classify tourists in relation to their approach towards the consumption of food and beverages while on vacation. For example, in a study of the attitudes of tourist towards regional and local foods (Enteleca Research and Consultancy, 2000), tourists are grouped into five segments: food tourists (6-8%), interested purchasers (30-33%), the un-reached (15-17%), the un-engaged (22-24%) and laggards (17-28%).

Hjalager (2002, as cited by Okumus, Kock, Scantlebury, Okumus, 2009) offered four groupings that are categorized as; recreational, existential, experimental, and diversionary

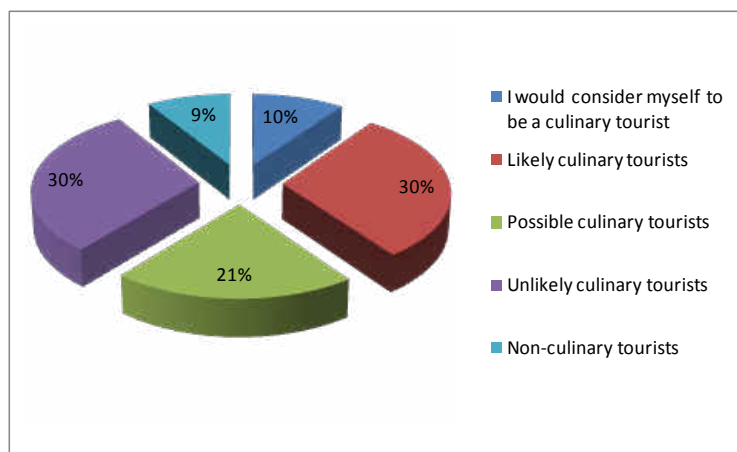


tourists. Recreational tourists are conservative and seek food and drinks similar to their own culture and traditions. Existential gastronomic tourists seek food and drink experiences that will not only help them to learn about food and drinks, but also about the local culture. Experimental gastronomic tourists try trendy food and drinks and use newly designed cafes and restaurants that serve innovative menus and chic service. The diversionary gastronomic tourists try to escape from the routine of everyday life with regard to shopping and cooking. They expect to have plenty of food without much hassle, but do not prefer exotic food (Okumus, Kock, Scantlebury, & Okumus, 2009).

On the other hand, in a study related to Canada's culinary tourism arena, Ignatov and Smith (2006) proposed three segments of culinary tourists: food tourists, wine tourists, and food and wine tourists. According to their findings, the food segment was the largest segment and had a higher proportion of females than other segments. The wine-oriented visitors were more evenly proportioned between male and female, had similar average ages and educational attainment, but reported higher incomes. Food and wine tourists were predominantly male, older, and had higher incomes and educational levels. The trip motivations and activities of each segment differed; for example, the food and wine segment showed the greatest diversity of motivations and activities.

In another study, McKercher, Okumus & Okumus (2008) categorized participants into one of five food segments based on their response to the question: "I would consider myself to be a culinary tourist, someone who travels to different places to try different foods." About 10% of respondents strongly agreed with this statement. Another 30% agreed with this statement and they were categorized as "Likely" culinary tourists. About 21% of those who answered on the mid-point of the scale were referred to as "Possible" culinary tourists. A further 30% disagreed with this statement, and were named "Unlikely" culinary tourists. Finally, the remaining 9% who

strongly disagreed were labeled “Non” culinary tourists (Figure 8). Surprisingly, McKercher et al (2008) found no differences among the five culinary tourist categories with regard to education and income level, gender profile, travel experience, travel party size, length of stay, trip duration, and average expenditure.



**Figure 8: Breakdown of McKercher’s study on Culinary Tourists in Hong Kong.**

*Source: Table created by author using McKercher’s study results.*

To conclude, Boyne et al. (2003) identified four different types of culinary tourists. For the first group, “food is an important factor in the vacation decision-making process”, this group actively searches for detailed information on the available local cuisines and the availability of different foods and drink in the area. Tourists in the second group also regard food as important, but need to be presented with food-related information. Yet, the tourists in the third group do not consider food to be a very important part of their holiday, but if there are opportunities, they may participate in some activities related to food and drink.

Finally, tourists in the final group have no interest in food and drink, and providing them with information will have no impact on their behavior (Okumus et al., 2009).

It is perhaps for the above-mentioned reasons that gastronomy related tourism are more and more being employed to diversify a destination's tourism portfolio and to strengthen areas' tourism products. In other words, an exclusive gastronomic identity is a requisite asset to any successful tourist destinations. However, to illustrate the relationship between local farmers, restaurants and tourists, the author would like to propose an alternative approach for the transformation of the traditional gastronomy tourism. Here, the supply chain process of locally produced foods do not only contribute to building a strong network of actors in the production and processing of the local product, focusing energies on managing production levels, while improving physical product quality and implementing effective marketing strategies, but will also focus on a value-based type of tourists which maximizes the impact of their consumer dollar to achieve economic, social and environmental change. Hence, the term "eco-gastronomy".

Towards a 21<sup>st</sup> Eco-Gastronomy  
Tourism Destination: Gastronomy and Local Food.

Before entering the literature on the relationship between food consumption, tourism and agriculture, the author therefore proposes "eco-gastronomy tourism" as a key term to illustrate the relationship between all three stakeholders involved in the supply chain. This is mainly because traditional definitions related to culinary tourism and wine tourism lack the description of tourists' desire to take part in the activities of the production phases of the food or beverage product, while learning and supporting the diminishing strategies related to economic, social and environmental concerns caused by traditional corporate agriculture.

Even though there is a very thin line between definitions of eco-gastronomy tourism and gastronomy tourism or culinary tourism, the latter is mainly defined as tourists visiting a destination to attend primary and secondary food exhibitions, food festivals, restaurants, and locations to specifically taste and experience food related to the destination's local cuisine (Hall & Mitchell, 2005). Cuisine on the other hand, also remains an illusive as it can be characterized by a wild dialectic of globalism within the local and localism within the global, as seen through the development of the "fusion" or "multicultural" cuisine (Hall & Mitchell, 2000). Cuisine has been constantly changing through its position within the developing networks of regional and global economic and cultural relations.

To transcend into the definition of Culinary Tourism, Long (2004) was the first who came with the term "Culinary Tourism" in 1998 to express the idea of experiencing other cultures through food, local cuisine, incidentally, wine. Specifically, culinary tourism is about individuals exploring foods new to them as well as using food to explore new cultures and ways of being. It is about groups using food to sell their histories and to construct marketable and publicly attractive identities, and it is about individuals satisfying curiosity. On the other hand, it was Wolf (2002, as cited by Kivela & Crofts, 2006), who defines "culinaria" and "gastronomy" tourism as "travel in order to search for, and enjoy prepared food and drink while enjoying unique memorable gastronomic experiences. "

Flowing into gastronomy, the term by itself remains a challenged endeavor to explain, yet, several definitions and variants exist. According to Revel (1982 p. 149, as cited by (Symons, 2002), gastronomy originated only when cuisine ceased to be collective, which happened in the second half of the XVII century, when the modern era heralded the 'reign of opinion' in 'cuisine, as in politics. The gastronomer or gastronome in those times was perceived as an artist of good

eating and drinking, and was not necessarily a scientist as there was no body of knowledge, or institutionalized practices or training to become a gastronomer. Neither was s/he a practitioner of the culinary art, even if this person had to have some knowledge of cooking methods to be able to pass judgment and to be familiar with the history of cooking and food of other countries.

The foundation for gastronomy encompassing both the enjoyment of excellent food and reflective eating and cooking was laid by Jean-Anthelme Brillat-Savarin back in the 1820's (Scarpato, 2002). Many aspects of Brillat-Savarin's work still have a high degree of currency today from his definition of gastronomy as the reasoned comprehension of everything connected with the nourishment of man.

For example, gastronomy is often referred to exclusively as the art of cooking and good eating, while others have suggested that gastronomy is the study of the relationship between culture and food (Kivela & Crotts, 2006). Gastronomy is also referred to as "the art, or science, of good eating", while being concerned with the total consumption of the meal and often denotes an affluent or aesthetically superior lifestyle (Ignatov & Smith, 2006). The focus on art or science translates as skill and knowledge, which neatly connects with the origins of the term.

On a more contemporary interpretation of gastronomy, Santich (2004) suggests that the focus of gastronomy is not the material substance of food and drink only, but rather it should be on the how, where, when and why of eating and drinking. Richards and Hjalager (2002, p.7) define gastronomy as the reflexive cooking, preparation, presentation of food to the extent that the act of consumption is a convivial rather than a solitary activity which extends to sociability and communication.

Gastronomy studies can then be classified as a trans-disciplinary perspective that does not replace, but complements, perspectives provided by the many disciplines studying food and

culture, food and society, and food and marketing (Scarpato, 2002). On the other hand, gastronomy studies is also related to their storage and transport and processing; in the political economy; the treatment of foods; their preparation and cooking; meals and manner; the chemistry of food; digestion and the psychological effects of food; food choices and customs and traditions; to the production of food, and the means by which foods are produced (Santich, 1996, as cited by Scarpato, 2002).

On a more scientific/laboratory level, gastronomy is for others the art of preparing and enhancing the value of distinguished foodstuffs, including the wine and the alcoholic and nonalcoholic drinks to avoid a more complicated term, which is “enogastronomy” (Gruia, 2008). In Gruia’s article, the author makes to attempt to emphasize on the difference between “molecular gastronomy (scientific perspective) and “culinary arts or culinology” (technological perspective), stating it as gastronomic engineering. Thus, gastronomic engineering is that part of the food engineering, which provides concepts and methodologies for all that, means intelligent sciences of human food, with regard to the esthetic and hygienic presentation and their distribution in the food service system.

The study of gastronomy might have eating and drinking at its core, however, contemporary understanding of gastronomy extends the scope of the study to the production and preparation of food and drink and how, where, and why they are consumed (Santich, 2004). While there is a general agreement on the meaning of ‘gastronomic’ – as in the gastronomic character of a country or region (referring to the kinds of foods and drinks produced and consumed), gastronomic specialties (the foods and drinks particular to a country, a region, a restaurant or a cook), and gastronomic tourism (a form of tourism focused on food and drink,

gastronomic specialties in particular), (Santich, 2004), there is a limited amount of literature exists to describe the conceptual definitions of eco-gastronomy.

Research with this innovative conceptual framework focuses on how communities can evolve socially and economically, keeping an eco-nutritional commitment to environmental sustainability and community members' optimal health (Scarpato, 2002). Eco-gastronomy derives from the prefix "eco" which refers to how organisms relate to their environment therefore representing consumers that are connected to the equilibrium they manage to preserve, and in many cases revive the environment they live in (Slow Food International, 2000). In other words, it is a philosophy that imposes the noblesse of gastronomic culture.

More specifically, eco-gastronomy is a concept suggested by Slow Food International highlighting techniques, philosophies and principles of sustainable agriculture and processing at farm level, with the aim at developing the manufacturing agriculture in terms of preserving biodiversity, food traditions, emphasizing quality and food taste (Gruia, 2008). In a 1994 published book of his work in 1825 "La physiologie du goût", Brillat-Savarin's description of gastronomy also relates to Slow Food's philosophy, stating that gastronomy is "the motive force behind farmers, winegrowers, fishermen, and huntsmen, not to mention the great family of cooks, under whatever title they may disguise their employment as preparers of food."

In gastronomic tourism terms, this has meant the promotion of regional and local cuisines in an attempt to attract tourists and differentiate the destination in the marketplace, as more and more tourists are traveling for the reason of gastronomy (Bessiere, 1998). This is the effect of a groundbreaking shift from traditional gastronomy as being merely the object of research by source discipline like psychology, history, sociology, and food sciences to economic type of research which includes the hospitality and tourism industry (Scarpato, 2002), with a pro-active

focal point in which other disciplines can come together to present new insights or new knowledge.

In recent years, the consumption of food and wine products has played an increasingly more important role in tourism. Not only are they featured in tourism promotions, but gastronomic tourism (also referred to as “food and wine tourism”, “culinary tourism” and “cuisine tourism”), has become a significant part of tourism in the past few decades (Santich, 2004). Many examples exist in the tourism related body of literature, but one common dominator persistently illustrates the interests of gastronomic tourism on locally produced foods.

One suggestion provided by Richards (2002, p. 16-17), highlights the possibilities where tourists can learn to cook, can learn about the local ingredients used, the way in which they are grown and appreciate how culinary traditions have come into existence. Interestingly enough, gastronomy tourists are increasingly emphasizing on the production rather than focusing on consumption. In France for example, there are “Discovery Farms” and “Learning Farms” which fulfill a pedagogic role, welcoming groups of visitors who want to see live animals or learn how olive oil is made. Another example is the “Produits de la Ferme” program, which encourages visitors to meet the producers and buy their produce (olive oil, goat’s cheese, honey, wine, poultry, fruits and vegetables) direct from the farm. Thus, all locally produced foods that are available directly from the farmers.

However, the sustainability behind food patterns, eating cultures and the economic, social and environmental characteristics related to gastronomy tourism or eco-gastronomy tourism as it relates to locally produced foods, has been largely ignored by tourism scholars. Telfer and Wall (1996) also support this notion by clearly stating that the contribution of local food to tourism has been largely neglected in spite of its apparent importance and potential. This is critical,

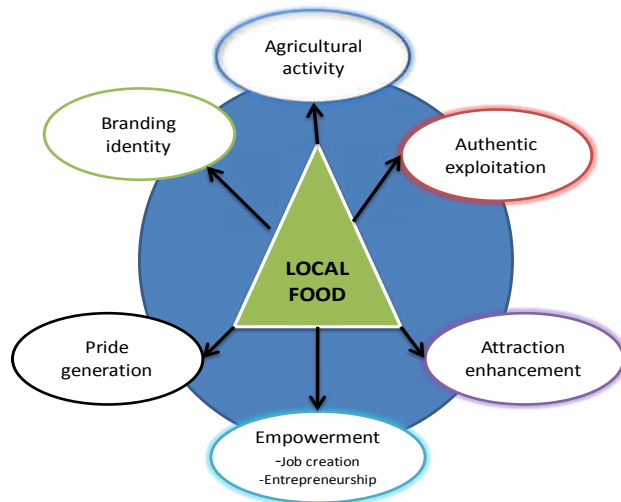


especially when local cuisines represent a core manifestation of a destination's intangible heritage, and though its consumption and production of locally produced foods (Okumus et al., 2007).

#### From farm to table: supporting locally produced foods.

There are claims that local food hold much more potential to enhance sustainability in tourism; contribute to the authenticity of the destination, strengthen the local economy, and provide for the environmentally friendly infrastructure (Gerrie, Rand, Heath, & Alberts, 2003). At an international conference dedicated to "Local Food and Tourism" in Cypress in 2000, an overwhelming majority of papers was dedicated to local food as an attraction in different destinations (Cohen & Avieli, 2004).

Tourists enjoy indigenous food, particularly items of local or ethnic nature (Wagner, 2001) as knowledge of the local, regional and national cuisine has become an interest for tourists (Gerrie et al., 2003). Additionally, the use of local food can directly or indirectly contribute to the various elements of sustainability in a particular area (Figure 9), namely: a) stimulating and supporting agricultural activity and food production; b) preventing authentic exploitation; c) enhancing destination attractiveness; d) empowerment of the community (by means of job creation and encouraging entrepreneurship); e) generating pride, specifically regarding food; and f) reinforcing brand identity of the destination with the focus on food experiences in that area (Telfer & Wall, 1996).



**Figure 9: The contribution of Local Food to Sustainable Development within a Destination.**

*Source: Table created by Gerrie, et. al., 2003. The role of Local and Regional Food in Destination Marketing: A South African Situation Analysis.*

Foods produced from sustainable agricultural practices have once become the main ingredient for the local cuisine not only as part of a consciously healthy diet, but also as an environmental awareness. It was because of contemporary globalization that the local and localization has become significant (Hall & Mitchell, 2000), and where competitive advantage is created and sustained through a highly localized process.

However, challenges arise as the current industrialization of food and cuisine had led to the loss of biodiversity and authentic food products as some varieties of plant and animal become favored for properties such as keeping or their ability to produce consistent program. To support this notion, and without going in depth about the organization, which is not the focus of this paper, Slow Food International is one of the key organizations worldwide that advocates the

reduction of authentic exploitation by defending local food traditions, protect local biodiversity and promote small scale quality products (Slow Food International, 2000).

Local foods become popular with most tourists only after they are to some degree, transformed on different dimensions and in various ways to suit tourists, where foreign dishes are introduced by tourism into the local cuisines and transformed to suit local tastes. Therefore, local food and beverages can play different roles in visitors' holiday experience. Its role can range widely from 'gastro-tourism' at one end of the scale, where people visit a region purely to experience regional food and beverages, to the simple satisfaction of the physical need to eat and drink at the other (Enteleca Research and Consultancy, 2000).

As it relates to empowerment and advocates of locally produced foods, many organizations now exist that promote local food by educating consumers and helping them locate it, by creating marketing opportunities and otherwise helping local growers produce what consumers want, and by performing myriad other functions that connect people to good, clean, and fair food (Thompson, E., Harper, A.M., Kraus, S., 2008, p. 30).

Recent expansion of public programs to support local food systems, suggests that interest in local foods goes beyond the motivation of consumers and producers (Martinez et al., 2010). For the case of Aruba, not only does the "Nos Aruba 2025" program indicate a desired outcome for the island to provide high quality culinary experiences, but the goal is to also teach the Aruban community how to grow their own vegetables, fruits, fishes and raise livestock. One key desired outcome is the "Programa Internacional di Agricultura (PIA)" which goal is to synergize the partnership between public and private entities to create an awareness program for the community (The Department of Economic Affairs Aruba, 2009, pg. 85).

According to Telfer and Wall (1996), one complementary way to enhance this strategic alliance between public and private entities is to advocate the benefits that the tourism industry can provide to the agricultural sector. Tourism and agriculture have the potential to work together in a symbiotic relationship, as tourism promotion can for example, focus on agricultural products which may stimulate export demand, while agricultural promotion may focus on the regional landscape and lead to a growth in tourism (Bowen, Cox, & Fox, 1991).

As it relates to pride generation, one can conclude that several movements had contributed to the continuous growing interest in local foods. The community food-security movement for example seeks to enhance access to safe, healthy, and culturally appropriate food for all consumers (Martinez et al., 2010). As stated earlier, a very influential advocate of local foods is the Slow Food movement. Based in Italy, this movement is a response to homogeneous, mass produced food production, and the “fast” nature of people’s lives, by encouraging traditional ways of growing, producing, and preparing food (Gaytán, 2004). Instead, local food movements reflect on an increasing interest by consumers in supporting local farmers, and in better understanding the origin of their food (Ilbery & Maye, 2006).

To support above-mentioned statement, in a research by Huang, Huang & Wu (1996), on the influence of national character upon the response to unsatisfactory hotel service, some 34 percent of all respondents made local cuisine a center of their quest for knowledge and experience. The emergence of tourism-oriented culinary establishments is a precondition for destination development for two reasons: 1) to provide tourists with familiar food that they are used to; and 2) to make novel and strange food accessible and attractive to “regular” (neophylic) tourists. Others suggest categorizing culinary oriented tourists into three types of dining experiences (Au & Law, 2002).

These are: a) experiential, experimental, and existential. In the experiential dining experience, the least active mode, the tourist will try some unknown foods and then decide to avoid consuming them again. In the experimental dining experience, the tourist tastes unknown food on a trial-and-error basis in order to find the ones complementing his aspirations. Finally, in the most active existential dining experience, a tourist is devoted to trying different restaurants, foods, and dining fashions.

It is therefore essential to differentiate between tourists who consume food as a part of the travel experience and those tourists whose activities and behavior are motivated and influenced by an interest in food (Hall and Sharples, 2003, as cited by Okumus et. al., 2007). It has been strongly suggested and supported with empirical research that tourism destinations tapping into the market of locally produced foods, can gain the competitive advantage by diversifying their tourism portfolio. However, the main question remains what created this trend towards locally produced foods, and why it's continuously on the agenda of many tourism destinations.

#### Local food and its role towards an eco-gastronomic tourism destination.

Many have claimed that if a destination is to prove sustainable in the face of tourism, then traditional and ethnic foods must be preserved, cultivated and marketed. To start with, it must be noted that the concept of 'local food' has the potential to generate several public benefits. These can be economic benefits, health or nutritional benefits, and environmental benefits, as the interest in local foods extends beyond the motivation of consumers and producers (Martinez et al., 2010).

As it relates to the economic impact, local food systems have the potential to positively impact the local economy. Recent literature claims of economic development impacts – in the form of income and employment growth – are common in local food research (Ikerd, 2009). Others suggest that expansion of local foods may be a development strategy for rural areas (Zepeda & Li, 2006).

Perhaps one of the most important factors related to small island destinations as it relates to locally produced foods is the farmers' retention of a greater share of the food dollar by eliminating money going through to the “middlemen”, and the encouragement of growth in local labor markets (Roininen et al., 2006). Also, the most direct way that expansion in local food systems could impact local economies is through import substitution (Martinez et al., 2010). Regretfully, the perception towards the tourism industry in small island destinations, is that it tends to generate increased food imports which simultaneously damage local agriculture and cause foreign exchange leakages (Rhiney, 2011).

Empirical studies have supported the above-mentioned strategies stating that local foods can have a positive impact on local economy activity through the localization of processing activities. Using an Input-Output Modeling approach, Swenson (2009) predicted that locally produced fruits, vegetables, and meat products would increase output, employment, and labor incomes in Iowa, which was due in part, to development of direct-marketing facilities and increases in local meat slaughtering and processing. Also, in a study related for the Liberty Economic Action Project (LEAP) in Liberty, New York, Mansury & Hara (2007) concluded that local organic agriculture has generated consistently higher profits than traditional farming, as the source of higher revenues is the purchasing power of upper-middle class consumers who are willing to pay a premium for locally produced organic foods.

As it relates to the health and nutritional aspect of local food, the relationship between local foods and healthy food items, such fresh fruits and vegetables, has led claims that local food systems may provide health benefits from improved nutrition, obesity prevention, and a reduced risk of chronic diet-related disease (Martinez et al., 2010). These benefits can be broken down in two main areas. First, local food systems may offer food items that are fresher, less processed, and retain more nutrients (e.g., because of shorter travel distance) than items offered in nonlocal systems (Lea, 2005). On the other hand, local food system may increase the availability of healthy food items in a community and encourage consumers to make healthier food choices (Morland, Wing, & Roux, 2002). However, this can only happen if two conditions are met: a) local foods systems must increase the availability of healthy food items in a way that is infeasible for non-local systems, and b) consumers who purchase local food must make different dietary choices that they would not have made without the local option available.

Related to the environmental benefits, many authors have suggested more in-depth studies to critically analyze if indeed there is a reduction of greenhouse gas GHG emission when locally produced foods are being produced and consumed. Pirog (2001), claims that food is traveling further from farmers to consumers as the food system increasingly relies on long-distance transport and global distribution networks. Concerns about fossil fuel use and greenhouse gas GHG emissions have increased scrutiny of the environmental impacts of transportation in the food system and the distance food travels to consumers (Martinez et al., 2010). Also, advocates of localization of the food system argue that reducing transport distances for food, or food miles, can reduce fossil fuel energy use, pollution, and greenhouse gas GHG emissions (Brown, 2003).

However, since this paper's focus is more concerned towards the economic impact of locally produced foods, and specifically related to the supply chain between farmers, restaurants and tourists, less focus will be put on the nutritional and environmental impact of locally produced foods.

Instead, the paper will first conceptualize the meaning behind 'local food'. Several dimensions exist trying to define what 'local food' really is. Yet, one of the challenges academics encounter is that there is no legal or universally accepted definition of 'local food' (Martinez et al., 2010). Smith & Xiao (2008) for example, provide a simple approach defining 'local food' as food or beverages that are produced in the region being visited and that are branded or promoted as such. Yet, for some tourists, there is often a very vague view of what is 'local', and this is further confused by the increasing universal availability of regional products. 'Local' is part of their definition of 'specialty', but most have not thought deeply about the difference between locally produced and specialty foods (Enteleca Research and Consultancy, 2000).

Another set of approaches are geographic proximity of producers and consumers, social characteristics and supply chain characteristics. In terms of geographic proximity, the New Oxford American Dictionary (NOAD) definition of 'locavore', describes it a local resident who tries to eat only food grown or produced within a 100-mile radius (Martinez et al., 2010). However, this 100-mile radius measure is not a standard for local markets, and many consumers disagree with the above-mentioned 'locavore' geographic conceptual definition (McCluskey, Durham, & Horn, 2009). Also, geographic proximity considerations have led to some controversies and very few researchers have attempted to construct a definition for 'local food'.



For example, Nabhan (2002) sets out a spatial definition of a 200-mile radius, while other propose units of analysis ranging from 12 miles (Pretty, Ball, Lang, & Morison, 2005) to 30 miles (Flint, 2004), to a day's round-trip drive (Devine, 2004). Based on a website campaign stated in Ostrom's (2006) article, the criteria used to rank degrees of 'local food' ranges from 1 to 3,000 miles, making it a bigger challenge to conceptualize the definition of 'local food'. Another example provided in his article is related to the local purchasing resolution passed by Woodbury County, which defines local as "that food which is grown and processed within 100-miles of Sioux City, Iowa. However, too much focus on "local" can be used to obscure socially or environmentally unsustainable production practices or reinforce parochial bias against outsiders or "others", a tendency referred to "defense localism" or "food patriotism"(Hinrichs, 2003). For the purpose of this study, and because of the geographic characteristics of small island destinations, where by definition small islands are entirely surrounded by coastal waters, this paper propose 'local food' as all food grown or processed locally (on each island), and within the boundaries of the coastal waters, purchased by restaurants from either from the local market or primarily through local producers.

Despite an increase interest in local agriculture by restaurants to purchase locally produced foods, there is limited research to compare and understand the efficiency aspects of using locally produced foods in terms of purchasing, production and customer service in restaurants (Sharma, Gregoire, & Strohbehn, 2009). The next of the literature review will elaborate on the consumer's perspective of local food and how the restaurant industry kept up with the demand, while section IV will elaborate on the supply chain perspective on local food as it relates to the linkage between agriculture, restaurants and tourists.

## Demand for locally produced foods-from farm to restaurants

### Restaurants' role to an eco-gastronomic tourism destination.

For the last couple of years, U.S.'s national economy dragged several other economies to a slump, which not only affected U.S.'s economies, but also internationally, when many regions were directly or indirectly hit by this recession. This has caused a dramatic pullback on consumer spending, even in many households where jobs weren't at risk (National Restaurant Association, 2010). However, unlike other industries, the depression did not reflect a prolonged decline in the restaurant industry (National Restaurant Association, 2011). As it was forecasted in the above-mentioned report, an improvement economic environment will drive the restaurant industry growth, and increasing jobs and income will strengthen consumer confidence.

Yet, the restaurant industry remains a highly competitive one, especially when it relates to the inter-relatedness that exists between restaurant industry and the tourism industry. Restaurant operators need a deep understanding of the wants, needs, and perceptions of the tourists visiting their establishments, as they are not only interested in the final product related to food and beverages, but also to the experience when visiting a restaurant (Josiam, Mattson, & Sullivan, 2004).

In a survey by Gyimothy (2000), 34-54% percent of all respondents indicated restaurants to be a significant and decisive reason for their choice of destination. Also, in an empirical study by Sparks (2003), about 60 percent of respondents indicated restaurants to be an important factor, and almost 20 percent an extremely important factor, when selecting a destination. Additionally, Sparks' study indicates that some 55 percent of the respondents emphasized the

importance of consuming healthy food while on holiday, and 50 percent stated the opportunity of trying “new exciting and different foods” and the opportunity to “spoil oneself” as key reasons for eating out.

An interest result of the above-mentioned study, and perhaps extremely relevant to this study, indicates that between 60 to 90 percent of those respondents who claimed that the quality of the food outlets did not influence their initial decision to visit a destination reported that their gastronomic experience would induce them to return to that destination. One of the main arguments is that food has become an increasingly important element where up to 25% of total expenditure is accounted for by foods (Quan & Wang, 2004). Besisle (1983) for example, has previously indicated that food represents approximately one-third of tourist expenditures and the degree to which the tourist industry relies on imported food can have a significant effect on the economic impacts of tourism.

Another example is a study related to the utilization of food as an attraction in South Africa, where tourism spending on food and dining out by international tourists averaged 8 percent of the total spending, while domestic tourists spends on average 24 percent. Specifically, some 55 percent of their respondents emphasized the importance of consuming healthy food while on holiday, and 50 percent stated the opportunity of trying “new exciting and different foods” and the opportunity “to spoil oneself” as key reasons for eating out.

In Australia, visitors from the U.S. spent about one-fifth of their total expenditure on food, drink and accommodation, around one-quarter on package tourist and just over a third on prepaid international airfares. People visiting for ‘other’ reasons spent 26 percent of their total expenditures on food, drink and accommodation (Hall & Sharples, 2003). Even though the author suggests more research to support the proposition that restaurants with high gastronomical

standards bring more tourists to a destination, one previous example of a case study performed by Las Vegas Convention and Visitors Authority in 2002, clearly supports such connotation. In this case study, Las Vegas' average visitor used to spend on food and beverages \$85 in 1993, and by 1998 the amount spent by tourists on food and beverages had jumped to \$141 and by 2001 it was \$213. Attracting over 30 million visitors, the increase in food and beverage spending resulted in a \$4 billion increase in expenditure by tourists (GLS Research, 2002). Today, Las Vegas is known as one of the top restaurant cities in the U.S., and as Rob Goldstein (senior vice-president of the Venetian) stated, "We never envisioned what a terrific draw food would be (Sparks et al., 2003). For the case of Aruba, no conclusion can be drawn from existing secondary data other than a similar pattern of each third quarter of the year, where on average, Food and Beverage expenditures are consistently higher than the other categories (Table 6). Further investigation is therefore suggested.

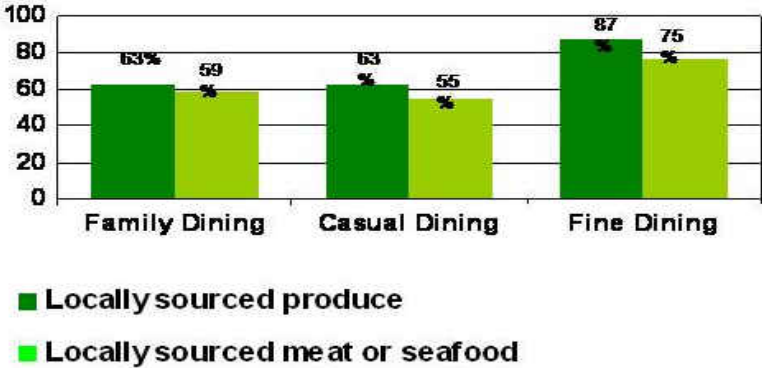
**Table 6: Average daily expenditure spent in Aruba per category (in U.S.\$).**

Categories of expenditures	Qtr. 1 2008	Qtr. 2 2008	Qtr. 3 2008	Qtr. 4 2008	Year 2008	Qtr. 1 2009	Qtr. 2 2009	Qtr. 3 2009	Qtr. 4 2009	Year 2009	Qtr. 1 2010	Qtr. 2 2010	Qtr. 3 2010	Qtr. 4 2010
Accommodation <sup>2)</sup>	21.66	14.82	18.22	16.61	17.83	19.84	17.28	20.46	29.10	20.98	26.96	11.62	14.01	15.55
Food & beverage	27.77	27.97	24.01	25.90	26.41	22.81	27.87	27.14	27.89	26.43	28.19	23.22	25.68	23.30
Groceries / sundries	3.79	4.23	4.35	4.43	4.20	4.42	4.59	4.96	4.40	4.59	4.71	4.47	4.42	4.21
Entertainment / recreation	6.39	6.68	5.28	6.02	6.09	5.40	7.58	8.57	6.94	10.15	7.40	8.13	7.49	7.58
Taxis	2.85	3.23	3.29	3.40	3.19	3.12	3.52	2.67	3.82	3.28	3.66	3.14	3.23	3.56
Car rental	6.66	5.40	5.04	5.93	5.76	6.51	5.38	6.06	5.96	5.98	4.99	6.54	6.30	5.59
Public transportation	0.22	0.23	0.23	0.23	0.23	0.17	0.23	0.24	0.29	0.23	0.22	0.24	0.18	0.20
Tax free shopping	1.69	2.37	2.69	3.43	2.55	2.15	1.79	2.47	2.47	2.20	0.98	2.01	2.47	3.02
Shopping	15.73	21.50	19.31	26.54	20.80	18.35	19.11	21.00	28.61	21.76	15.65	17.75	21.08	10.26
Casinos	10.65	8.75	6.48	8.25	8.53	8.96	8.17	8.39	7.96	8.37	7.91	10.18	8.77	11.34
Telephone / Internet	4.03	0.20	0.12	0.13	1.11	0.18	0.15	0.26	0.13	0.18	0.28	0.29	0.21	0.26
Other <sup>3)</sup>	1.38	1.76	1.57	0.83	1.39	0.97	2.73	1.86	1.41	1.74	0.79	0.41	0.50	0.98
<b>Total (In US\$)</b>	<b>98.95</b>	<b>96.23</b>	<b>90.79</b>	<b>100.74</b>	<b>96.70</b>	<b>91.93</b>	<b>98.91</b>	<b>104.09</b>	<b>115.97</b>	<b>102.74</b>	<b>101.12</b>	<b>87.61</b>	<b>93.67</b>	<b>94.49</b>

*Source: Tourist survey-Central Bureau of Statistics Aruba.*

Without any doubt, expenditure on food as a factor of travel and tourism is extremely significant and helps illustrate why both government and business should tap into this eco-gastronomic market, to diversify their tourism portfolio, increase spending, alleviate seasonality, and broaden the destination’s appeal. However, currently, tourists continue to sharpen their culinary body of knowledge and skills, as the focus is not just ‘food’, but food that enhances their quality of life by emphasizing on the cultural, culinary and artistic local traditions of each destination, hence the term ‘local food’.

In the “Food and Menu Trends” section of the National Restaurant Association’s 2010 Forecast Report, it is clearly stated that 78 percent of fine-, 65 percent of casual- and 59 percent of family-dining operators (Figure 10) said their customers were more interested in locally sourced menu items than they were two years ago (National Restaurant Association, 2010).

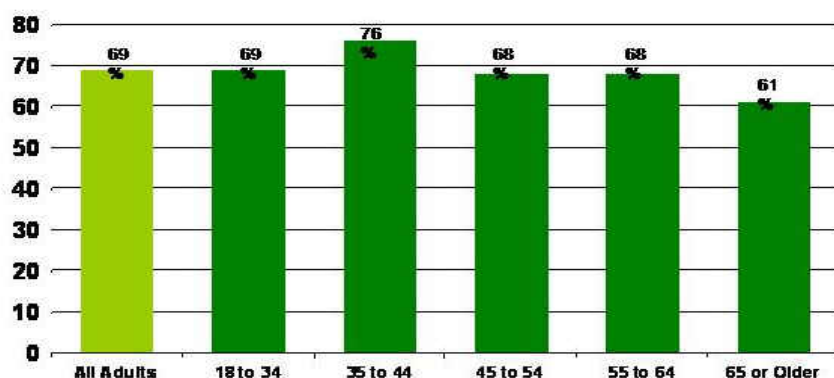


**Figure 10: Appetite growing for Local Foods.**

*Source: National Restaurant Association, Full Service Operator, Survey, 2010.*

Emphasis is laid on the fact that this phenomenon is often a point of differentiation for consumers, with 69 percent of adults saying they are more likely to visit restaurants that offer

locally produced food (National Restaurant Association, 2011). To attract those diners, 87 percent of fine-dining operators said they offer locally sourced produce, while 63 percent of casual- and family-dining operators reported similarly. Also, similar study indicated that the proportion of adults who said they are more likely to visit a restaurant that offers locally-sourced food items (Figure 11).



**Figure 11: Consumers of all ages like to eat Local Food.**

*Source: National Restaurant Association, Full Service Operator, Survey, 2010.*

Fact is that changes in the production, processing, transportation, and retailing of food over the last century has created substantial territorial, temporal and psychological space between producers and consumers, effectively masking consumers from changes in farming and the agricultural landscape (Inwood et al., 2009). Also, agriculture has been a focus of sustainable development work because it is a local of viral and intimate relations between culture, science, and nature (Starr et al., 2003).

However, for a local cuisine which includes locally produced foods to become a popular attraction in its own right, it has to be filtered through tourism-oriented culinary establishments (Cohen & Avieli, 2004), such as tourism related foodservice facilities.

According to Sharma, Gregoire and Strohbehn (2009), the phenomenon of eating locally grown foods has been on the increase in the U.S. and is expected to continue increasing as consumers become more socially-, health-, and environmentally conscious. However, restaurant owners and managers need to keep in mind that tourists base their travel destination choice on the variety and quality of restaurants, and as it relates to the promotion of locally produced foods, variety and quality cannot be the only two factors involved in the supply chain of locally produced foods.

Even though many case studies have documented the success of linking local producers with these culinary establishments (Strohbehn & Gregoire, 2003), the complex industry of restaurants makes it a challenging endeavor to analyze such linkages. Not only is it the role of the restaurant patrons to meet the tourists' expectation, but it is the responsibility of every stakeholder involved within the supply chain related to locally produced foods. One of the main reasons is the positive impact of new local markets for regional economies through retention of revenue in the community, reduced transportation miles and energy consumption, and service of fresher foods. Another factor is that in this competitive arena, restaurants are increasingly using 'local foods' as a differentiation strategy (Gregoire & Strohbehn, 2002).

Therefore, an improved understanding of the supply chain between agriculture, restaurants and tourists, could aid restaurants to continually increase production efficiencies with better vendor selection policies, where they will be able to make knowledgeable decisions about using local foods as a differentiation strategy (Gregoire & Strohbehn, 2002).

As it relates to the local farmers, the strength of the linkage with the restaurant industry is critical, as these food suppliers (farmers) can tap into the purchasing dollars spent by these producers (restaurants). In other words, lacking the ability to establish a strong linkage between local farmers and chefs of local restaurants can lead to inconsistent gastronomic experiences for tourists, therefore affecting sustainable tourism development of the island.

In many ways, chefs have been identified as potentially important partners in efforts to promote local food systems (Inwood et al., 2009). For example, the concept of ‘local food’ started back in the 1970’s, where nouvelle cuisine, which was developed by chef Paul Bocuse and other chefs in France, brought chefs’ attention back to ingredients whose flavor was allowed to stand on its own through simplification and reductions (Starr et al., 2003). In the U.S., it was chefs Jeremiah Tower and Alice Waters at Chez Panise in California who began in 1972 a novel practice of using the freshest vegetables they could find. The passion towards local food brought them to farms and farmers markets and caused them to re-write their menus weekly or daily in order to ensure they were only serving the freshest, seasonal ingredients (Starr, et al., 2003).

Another example is the establishment of the U.S. national organization called “Chefs Collaborative”. This is a nonprofit organization that works with culinary professionals to celebrate local foods and foster a more sustainable food supply (Chefs Collaborative, 2008). Established in Boston, Massachusetts, the organization inspires action by translating information about locally produced foods into tools for making knowledgeable purchasing decisions, to embrace seasonality, preserve diversity and traditional practices, and support local economies. Generally speaking, local foods have become increasingly popular in some sectors of the culinary arena (Carter, 2008), although the range of restaurants utilizing them is somewhat scarce.



One of the key international advocates of 'local food' is Mr. Carlo Petrini, who founded the Slow Food Movement in Italy. The organization was established to defend the "right to taste", while defending food heritage by acting on behalf of disappearing varieties and artisanal products (Gaytán, 2004). Established in 1989, Slow Food International realized that the industrialization of food was standardizing taste and leading to the destruction of thousands of food varieties and flavors.

Slow Food International, with its philosophy of promoting for that are good, clean and fair, promotes social contact between producers and consumers, and making knowledge of the producer and production process as important as knowledge of the food itself (Petrini, 2007). It is their belief to support the synergy among local growers, restaurants, distributors and consumers which is at risk of succumbing to the effects of the fast life, which also manifests itself through the industrialization and standardization of the food supply and degradation of the farmland ([www.slowfoodorlando.org](http://www.slowfoodorlando.org)).

One of Slow Food's philosophy, "food that is clean", was triggered for this exact same reason, where agriculture has been pictured as the primary destructive force of biodiversity (Lockwood, 1999), which are at risk of being destroyed by the rules of global market and by standardized large-scale agriculture. This movement also establishes a connection between buying food and understanding and valuing the conditions under which it was made (Pietrykowski, 2004). Perhaps, a bigger concern is the organization's perception towards mass-distributed agricultural production, and the effect of agricultural expansions on the biodiversity of food items. This phenomenon goes hand in hand with consumers' demand for food, where the tourism industry is not an exception of the rule.

More specifically related to gastronomy, Fordist mass tourism has been linked to theories of ‘McDonaldization’ or ‘Disneyfication’, which employ a modernist and postmodern perspectives to describe a ‘new means of consumption’ (Ritzer, 1983). However, even though the Fordist mode of production that has emerged as a product of modernity, several scholars suggest a paradigm shift in tourism production and consumption towards a more sustainable “post-Fordist” forms of specialized production and consumption. Post-Fordist tourism represents a movement from the classic, mass tourism “sun sea and sand” products to more diversified tourism commodities that fix the ‘tourist gaze’ upon unique environmental, cultural and social landscapes (Milne & Ateljevic, 2001).

In the Caribbean, limited amount of empirical research has been conducted to measure the impact of the restaurant industry on locally produced foods. Existing research includes general areas of food and beverage, which mainly emphasizes on the current status of food import and the potential lucrative source of income for local farmers when restaurants increase their sales of locally produced foods (Rhiney, 2011). For example, in the 1990s, Gomes (1993, as cited by Rhiney, 2011) calculated that food and beverages served in Caribbean hotels, including the cost of delivering the meals and drinks to visitors, accounted for 57 percent of the total revenue per room.

As it relates to local farmers, in Barbados, it was found that 24 hotels estimated that 46 percent of operating costs were spent on food and drink, whereas for restaurants (N=28), the figure was 49 percent, where both said that over 90 percent of chicken, eggs, vegetables, milk and soft drinks were local, while demand was highest for additional local vegetables and meat (Rhiney, 2011). In another study in Barbados, 21 hotels served local foods unfamiliar to foreign

tourists, and most hotels and restaurants felt that training chefs to use local foodstuffs was important (Richardson-Ngwenya, 2011).

Other studies focused on: a) the importance of establishing a strategic alliance between various stakeholders, which included tourism and agricultural stakeholders, local hotels and restaurants, local suppliers, regional farmers and private entrepreneurs (Torres & Momsen, 2004); b) creating backward linkages between tourism and agriculture (Torres, 2002b); and c) linking tourism and agriculture to achieve pro-poor tourism objectives (Torres & Momsen, 2004). The overall conclusion was disappointing as most results indicated a weak linkage between these two sectors. To conclude, these articles remain very general in terms of the restaurants' food and beverage purchasing behaviors and the existing linkage between the two sectors. Yet, specific factors related to the measurement of the strength of the linkages between restaurants and farmers remains limited for most of the Caribbean destinations.

For the case of Aruba, limited empirical research has been conducted specifically on the impact of the restaurant industry on the island's economy. Also, no empirical research was found related to the linkage between agriculture, restaurants and tourists for the island of Aruba. However, existing results related to tourism expenditures, food import, food export and leakage can be found on Aruba's Central Bureau of Statistics (CBS Aruba). The following section highlights the technical aspects of supply chain management in establishing the linkage between agriculture, restaurants and tourism. This section will also focus on the factors presented previously in Chapter 1, which form part of this proposed eco-gastronomic tourism supply chain.

## Sustainable Supply Chain Management for Locally Produced Foods

As claimed by various scholars (Torres, 2002a), the tourism industry can expand the backward economic linkages at a destination by increasing the amount of local food used in the tourism industry. Regretfully, there is paucity on literature to suggest that the tourism industry had successfully developed linkages with local host agriculture, yet. However, according to Dodman and Rhiney (2008), the linkage between agriculture and tourism remains an essential component of the Caribbean tourist attraction, particularly in a context of new tourist interests related to the search for authenticity.

In the context of the Caribbean region, the tourism sector can also lead to significant imports of goods and services not produced locally, which puts a strain on the efforts of establishing a stronger linkage between the two sectors. A handful of studies have emphasized on the failure of these predicted linkages to form (Momsen, 1998) as several constraints exist that inhibits the development of such linkages. For example, Belisle (1983), suggested that these constraints can include anything from physical, behavioral, economic, technological obstacles to marketing obstacles. Lack of marketing, transport, and storage facilities are also on the list, where in the context of Caribbean islands, environmental characteristics such as smallness, crowded islands with little physical variation that are vulnerable to climate extremes of drought and high winds all contribute to the challenges in strengthening such linkages (Momsen, 1998, p. 118).

Others (Britton, 1991), argued that the organizational structure of the tourism industry, in which foreign-owned hotel chains have strong links to overseas food suppliers, also acts as barrier to developing links with domestic suppliers (local farmers).

Factors such as menu offerings, geographic location, ownership status, purchasing and payment policies, package forms, convenience, and compliance with the state and government regulations for food safety also influence the selection of food supplier (Strohbehn & Gregoire, 2003)

For example, studies warn of the leakages that can occur when the tourist industry relies mainly on imported foods (Taylor, Morison, & Fleming, 1991). Tourists' consumption of food and beverages which are imported from their country of origin, in hotels owned and managed by fellow nationals, is a prime example of the leakages of receipts from a destination (Stabler, Papatheodorou, & Sinclair, 2010, p.237).

It is argued that much of the failure to establish a strong linkage between the two sectors is traced to historical factors and unequal power relations between farmers and consumers. According to Momsen (1998), the Caribbean region has always been trade dependent as captured in the old adage that "the Caribbean produces what it does not consume and consumes what it does not produce." If destinations, particularly those in the Caribbean region, are to maximize benefits from tourism development, ways must be found to increase backward economic linkages, including utilizing local food product in the tourism industry (Dodman & Rhiney, 2008). In other words, local production of food can make an important contribution to the balance of payments in a tourist-dependent economy such as those of many of the smaller islands of the Caribbean, including Aruba. To alleviate these constraints, this article proposed an Eco-Gastronomic Tourism (EGT) supply chain to identify the factors needed in the Aruban food supply chain as a means of encouraging a stronger relationship between local farmers, restaurants and tourists.

### Challenges within the local supply chain.

Food supply chains are increasingly being analyzed for their environmental impact and sustainability. Recent academic and corporate interest in sustainable food supply chain management has risen considerably in recent years. According to Seuring and Muller (2008, p.1700), the supply chain encompasses all activities associated with the flow and transformation of goods from raw materials stage (extraction), through to the end user, as well as the associated information flows.

Perhaps, one of the reasons is that most food products involve the assembly of multiple parts through multiple stages, beginning with raw materials, moving through successive stages of greater refining, processing, and assembly, typically each done by a different stakeholder (Murphy & Smith, 2009). Others include food safety issues; concerns about national food security due to increase in food imports; the food system being dependent on crude oil supplies; the health implications of poor diets; the ecological consequences of industrialized agricultural production; and the termination of small farmers and independent grocers (Jones, 2002).

The underlying concept is that it is only by mapping the whole food supply chain, and understanding the interactions within that chain as a 'system' that the most effective leverage points can be identified (Hawkes, 2009)

It is essential to understand what happens at each stage of the 'local' food supply chain, from the farm to the restaurant, to the tourists. The key characteristic is that locally produced foods reach the final consumer having been transmitted through a supply chain 'embedded' with value-laden information concerning the mode of production, provenance and distinctive quality assets of the product (Ilbery & Maye, 2006). Localized food systems that reduce the number of

intermediaries and spatial distances between producers and tourists are often described as strategies which redistribute value along the food supply chain (Bloom & Hinrichs, 2011). Therefore, this paper uses the value chain structure and its mechanisms as a foundation to examine the food distribution networks for the island of Aruba.

However, current strategies within the supply chain have evolved in an orderly manner from past practices. Also, owing to the globalization of markets, the diversification of customer needs, and the complexity of product components, additional macro-economic factors between these stakeholders, such as considerations for suppliers/supplier development, collaboration in production activities, and collaboration must also be taken into account (Park et al., 2010). As indicated in USDA's Local Food System Report (2010), several barriers to local food-market entry and expansions exists which small local farmers face. These include: a) capacity constraints and lack of distribution systems for moving local food into mainstream markets; b) limited research; c) education, and training for marketing local food; and d) uncertainties related to regulations that may affect local food production.

In the Caribbean, the most common constraints that presented itself in previous literature, were: a) price negotiation between farmers and restaurants; b) lack of marketing strategies from the farmers; c) safety and sanitation requirement; d) availability and delivery constraints; e) government policies; and f) background of Chef.

Therefore, the Supplier Relationship Management and Customer Relationship Management frameworks explained in Chapter 1 are used as the foundation of a proposed model for this study to determine the current constraints for the island of Aruba in terms of its food supply chain. By using the SRM/CRM framework, the author is able to identify and compare challenges related to the structure, organization and practices of the chain as well as relationship

between producers and consumers. More specifically, the following paragraphs elaborate on barriers present within the food supply chain other destinations, both in the U.S. and in the Caribbean region.

### Pricing Negotiations

The first constraint is related to the pricing strategies of locally produced foods within the supply chain, which starts from the local producers/local farmer. From the farmers' perspective, it can be difficult to meet intermediary demands for high volumes, consistent quality, timely deliveries, out of season availability and significant cost of direct marketing and on-farm processing (Abate, 2008), all which present obstacles to expansion of local food sales which affects their pricing strategies. Also, price competition from multiple sellers with the same product and local angle, rejection based on quality requirements, inability to meet logistical requirements, and buyers backing out on contract (Martinez, et al., 2010), also affects the farmers' ability to negotiate their pricing strategies with the consumers.

From the restaurants' perspective, a gap exists in the literature to assess process and production costs of menu items of locally produced foods, to evaluate their production efficiencies. In the context of using locally grown and produced food, restaurants and other foodservice establishments have suggested that these costs may be higher compared to food purchased from regular purveyors (Sharma et al., 2009). Restaurants also have to be alert for the market dynamics in their particular location, where prices from some products in local food markets may be comparable to or below prices in other markets in a community, but may be



higher for other products or in other locations (Pirog & Leopold Center for Sustainable Agriculture, 2001).

From the consumers' perspective, several authors investigated the characteristics and attitudes associated with local food purchase and willingness to purchase. According to Martinez (2010), motives for "buying local" include: perceived quality and freshness of local food and support for the local economy; the emphasis on nutritional value; methods of raising a product; the raising methods' effects on the environment; and the support for local farmers. In Brown (2003) study, female respondents were more likely to pay higher or lower price than the same price. In Hughes et al. (2007), respondents indicated that their motivation to purchase locally produced foods was based on their desire to help their State economically rather than concern with price or quality for produce and animal products.

Retailers have also tapped into this market, where in the U.S. for example, some have also contributed towards the pricing strategies behind locally produced foods. Wal-Mart for example, had expressed its commitment to source more local fruits and vegetables to keep produce prices down and provide affordable selections that are fresh and healthful (Martinez, et al., 2010).

### Marketing Ability

The cost of on-farm processing, such as labor and time, create serious obstacles for the expansions of local food sales for small farmers. Shortage of labor related specifically to marketing activities is consistently reported by farmers as being a barrier to direct marketing (Hardestry, 2008 as cited by Martinez et al., 2010). In Cancun for example, besides the fact that

the local farmers lacked the experience necessary to develop direct marketing linkages, the Cancun middlemen did not want competition and made it difficult for farmer/intermediaries to sell directly (Torres & Momsen, 2004). Yet, the same farmers did express a strong interest in producing local food products for tourism.

However, in the U.S., farmers markets have been a key strategy on how small farmers promote their products. For example, in 2007, direct-to-consumer marketing sales accounted for a larger share of sales for small farms, which amounted to \$1.2 billion in current dollar sales in 2007, according to the 2007 Census of Agriculture, compared with \$551 million in 1997 (National Agricultural Statistics Service, 2007). That same year, produce farms engaged in local marketing made 56 percent of total agricultural direct sales to consumers, which accounting for 26 percent of all farms engaged in direct-to-consumer marketing (Martinez, et al., 2010). More specific, direct-to-consumer sales were higher for those farms engaged in other entrepreneurial activities such as tourism, compared to other farms.

Yet, lack of marketing ability for small farmers is not easily managed, particularly for farmers on small island destinations. A possible solution for these farmers would be to follow similar strategies applied in the U.S. related to farmers markets. In the U.S., local food markets typically involve small farmers, heterogeneous products, and short supply chains in which farmers also perform marketing functions, including storage, packaging, transportation, distribution, and advertising (National Agricultural Statistics Service, 2007).

## Safety and Sanitation

Producing and selling fresh locally produced foods includes several risks. Uncertainties related to food safety are one of the many that also affect the strength of the linkage between the three sectors. During the International Conference on “Local Food and Tourism”, one of the issues related to the linkage between “Local Food and Tourism” was the concern with health and hygiene standards in both sectors (Agriculture and Tourism), but the prevailing attitude was that such problems are temporary and can be easily resolved (Cohen & Avieli, 2004).

In a study done by Oklahoma Food Policy Council in (2003), which purpose was to investigate the top motivations towards locally produced foods, found that the top concerns and barriers were food safety (49 percent), cost (47 percent), supply reliability (46 percent), and lack of local producers (44 percent). Their interest also derives from their preference for high-quality fresh produce, yet still concerned about food safety (Martinez, et.al., 2010). Perhaps, one of the main reasons is that local food systems can reduce food safety risks by decentralizing production (Peters, Bills, Wilkins, & Fick, 2009).

Also, tourists are generally primarily preoccupied with immediate, unwanted effects of food on their wellbeing, rather than with some long-range threats such as the presence of dangerous chemicals in the food (Cohen & Avieli, 2004). In a study done in Cancun, results indicated that fear of food and water-related illness leads tourists to avoid consumption of fresh fruits and vegetable (items that hold the greatest potential for local production)(Torres, 2003).The same survey revealed that tourists expressed greatest concern with consuming fresh vegetable, which clearly can lower the demand for products that could be grown locally.

From the restaurants' point of view, chefs also limit procurement of certain fresh products because they believe that local products are grown and handled in less sanitary conditions than those being imported (Belisle, 1983). Based on a survey conducted by Torres (2003), 41% of chefs report deliberately limiting direct procurements from local producers due to health and sanitation concerns.

However, it can be stated that food safety rules and regulations and inspection requirements can facilitate the successful operation of a farmer's production facility. The above-mentioned concerns are a topic rarely addressed in the literature, but clearly deserve more attention, especially for small island destinations.

### Availability and Delivery

Delivery and the logistics behind the delivery of locally produced foods to hotels and restaurants have also lacked the attention of researchers with a few exceptions. These concerns are echoed in some surveys on topics related to year-round availability, obtaining adequate supply, reliable food quantity, and on-time delivery (Martinez, et al., 2010), where the lack of delivery capacity of local farmers can create a serious problem for many restaurants.

The procedure of billing and contract requirements have also been indicated in some reports as major constraints for establishing a strong supply chain. Common barriers included the convenience of current ordering methods, complicated logistics for negotiations, unreliable supply and on-time delivery due to small farm size that make planning difficult for these restaurants (Day-Farnsworth, 2009).

As it relates to Caribbean islands, small producers on the island of Jamaica faced similar constraints as the three major source of food are wholesalers (69 percent), small local suppliers (27.9 percent) and supermarkets (3.1 percent). However, this can be argued to be an advantage or disadvantage to the local farmers on the island (Belisle, 1983), as hotels purchase as much as 80 percent of their food from four dominating wholesalers, while small local suppliers were found to account for up to 63 percent of individual hotel purchases. Generally speaking though, wholesalers are preferred because of more reliable delivery schedules.

In a report related to establishing a food supply chain for the Dominican Republic, several barriers and challenges were presented. Local producers: a) were not sufficiently aware of hotel requirements; b) could not access credit to invest in upgrading their delivery process for the tourism sector; and c) could not operate with 30 to 90 days pay periods practiced by hotels and restaurants as farmers lack working capital (Ashley, Goodwin, & McNab, 2005).

Developing a consistent supply capability would allow farmers to secure regular and established market for product delivery throughout the year. Restaurants place particular emphasis on the reliability of the supply chain, as the benefits they reap can be from improved co-ordination from supplier to customer, reduced lead times, greater productivity and efficiency, smaller inventories, lower costs, and increased delivery reliability (Murphy & Smith, 2009).

Surprisingly there is a research gap related to this linkage, given the fact that the success of the supply chain between local farmers and restaurants is so fundamental in the tourism industry. From the restaurants' perspective, a properly managed availability and delivery strategy is so essential for the chef to build better relationships with suppliers, identify new sources and finally manage consistent supplier relationships.

By a better appreciation of this linkage, strategic decisions for product development (both sectors), marketing (both sectors), and delivery can be made more effectively and efficiently.

### Government Policies

Another significant barrier identified in literature related to the linkage between local farmers and restaurants is the lack of government support. According to Torres (2003), research must draw on a diversity of voices including government officials among others, to understand the nature of linkages as well as the potential for their creation and existing constraints. Lately, this has been the case in the U.S., but the lack of it has been a common denominator in the literature related to some Caribbean islands and other tourist destinations in the region.

Lack of supply from domestic agriculture remains a key constraint to the formation of linkages with tourism in the Caribbean (Timms, 2011). In Barbados, local government constitutes an deep-rooted challenge to the development of supply relationships between local farmers and tourist venues (Richardson-Ngwenya, 2011). Inconsistency in government policies can also add another thorn in the local food supply chain. For example, in Cancun, government support for projects did not extend beyond promises, partly due to the climate of political corruption in which promoting small-scale production was perceived to offer little value (Torres, 2003). It is more than obvious that changes in government policies are required to encourage farmers to facilitate the development of local economic linkages and to maximize national revenues from tourism (Ashley, Goodwin, McNab, Scott, & Chaves, 2006).

Local government policies and strategies that address barriers to local food production and directly support local food purchases can serve as a liaison for growth of the local food

market. For example, in 1996, U.S.'s Department of Defense (DoD) "Fresh Program", in conjunction with the United States Department of Agriculture (USDA), acquired produce for institutions that was grown within their State, with preferences increasingly given to small and medium-sized farms (Martinez, et al., 2010). Similar report highlights the Community Food Security Act, and the Community Food Project Grants Program, which is part of the 1996 Farm Act, which awards grants for training and technical assistance to increase the capacity of local food production and promote "buy local" campaigns, and support to better understand the opportunities and obstacles to local food production and consumption (Martinez, et al., 2010)..

#### Background of Chef.

In addition to the constraints related to government policies, the preference of the chef of a restaurant or hotel restaurant also plays a significant role within the supply chain. Torres (2003) study in Quantana Roo, Mexico, found that foreign chefs purchased more imported food than local chefs, particularly due to the convenience of packaged foods and lack of familiarity and comfort in using local products. Chefs also have concerns about food safety of local sources, whether or not these concerns are supported by evidence (Timms, 2011).

Much of this is due to unfamiliarity of chefs with local products and producers, which is in part explained by the social differentiation between elite hotel professionals and what are perceived to be traditional local farmers (Gomes, 1993).

Combined with above-mentioned preferences of foreign chefs, large foreign-owned hotels tend to rely more heavily on imported products than small locally owned hotels (Momsen, 1998).

Rhiney's (2011) results also indicated similar results, where foreign chefs are more likely to express dissatisfaction with local products and are less inclined to prepare local dishes compared with local chefs. This fieldwork data also confirmed that the hiring of foreign-born and overseas-trained chefs might have serious implications for the incorporation of indigenous specialty food items in hotel menus. Also, interviews revealed that foreign-born and overseas-trained chefs were less willing to incorporate local specialty items such as yam, sweet cassava and okra in their menus. These chefs generally complained about product quality, primarily produce appearance, and size (Rhiney, 2011).

In the same study, the chefs often complained about sanitation standards and seasonality of food products, while they also pointed out that some local vegetables such as lettuce and green cabbage are often infested with pests and that they usually end up discarding a significant portion of these products. This widely held perception of lower quality creates a systematic bias against local products in wholesale supplier and hotel food purchasing. This biased perception can be eliminated if further studies are conducted, by investigating each of the above-mentioned factors related to the food supply chain of small island destinations.



## CHAPTER THREE: METHODOLOGY

This study focuses on the fundamental relationships between local farmers, restaurants and tourists, which directly and indirectly form part of the food supply chain of the island of Aruba. More specifically, the primary objective of this research is to explore the factor, which affects the linkages between each one of the above-mentioned sectors in Aruba, where factors such as pricing, marketing, sanitation, delivery, government policy and background of chefs will be investigated. However, in order to investigate this complex arena of the island's food supply chain, the methodology is divided in three phases. This paper takes an integrated approach to capturing the complexity of the intersection of local farms, the plethora of the restaurant community with their complex global cuisines, and international tourism flows.

### Phase 1 Farmers' Perception

In this section, the paper incorporates a qualitative and quantitative approach, which comprises of an extensive survey that draws primarily on the six factors (Product Price/Cost, Marketing Ability, Safety/Sanitation, Availability/Delivery, Government Policy, Background Chef) presented in the literature review. A five point Likert scale was used to identify the farmers' perception towards the establishment and or reinforcement of a linkage between farmers, restaurants and tourists when promoting Locally Produced Foods (LPF). The goal is to identify the key factors that influence the promotion and sales of locally produced food products and at the same time identify the challenges faced during this process. It important to highlight that no dependent variable included in the survey, as the main purpose of Phase 1 of this research

project was to explore the underlying structure of the set of five factors presented in Chapter 2, and to verify if it is useful to reduce the large number of related questions (variables) to a smaller, more manageable, number of dimensions or components (Pallant, 2005, p.114).

To ensure confidentiality of the local farmers, personal information and farm names were omitted from the survey. A convenience sampling technique was used based on the list of local farmers obtained by the Aruba's Department of Agriculture (Direktie Landbouw Veeteelt Visserij Markthallen DLVVM). However, it is important to highlight that the existing list of farmers creates a challenge for researchers, as the Department of Agriculture of Aruba (Santa Rosa) doesn't have an up to date list of all the local farmers on the island. One of the main reasons is that several small farmers are not registered at the Local Chamber of Commerce, as they are concerned with current tax policies by the local government for small amount of production that they are accustomed to. However, the list of the total population of local farmers is currently being compiled during several sporadic meetings organized by the Department of Agriculture (Santa Rosa), which is mainly based on individual and mass media invitation.

The author of this research project conducted the survey during one of the above-mentioned gatherings organized by the Department of Agriculture (Santa Rosa), where a total sample of 55 farmers, from a current population of 102 famers was obtained, using a combination of the traditional focus group approach, in conjunction with a survey techniques using the structured questionnaire technique using six factors presented in the literature review section. To facilitate the farmers with the questions being asked, each question was presented on an overhead projector, then read to the farmers, and explained if necessary. Several students assisted during the process to make sure all the questions were responded properly.

Prior to conducting any inferential statistical procedures, basic descriptive analyses (Mean and Standard Deviation) were performed on the six factors proposed in the literature review section in order to present information about the data set being studied. Computing descriptive statistics is an advisable preliminary step in data analysis, in order to summarize, organize and describe the collected data. The goal of descriptive statistics is to provide a representation of the data that describes in a graphical and or numerical form, the results of this research. However, based on the limited amount of the population of farmers on the island of Aruba, and because of the total sample of 55 farmers obtained during the data collection process, no factor analysis was conducted to underlie the patterns of correlation and to look for “clumps” or groups of closely related items presented on the survey.

### Phase 2 Restaurants’ perception

Phase 2 explores the restaurant industry’s perception towards the promotion, production and consumption of Locally Produced Foods (LPFs) in conjunction with the logistical challenges faced when purchasing LPFs from local farmers. Hotel restaurants, restaurants, restaurant owners, F&B managers and chefs were interviewed using a semi-structured list of questions to define the restaurant industry’s characteristics, food supply and demand, and linkages to local agriculture in Aruba. Similar six factors (Product Price/Cost, Marketing Ability, Safety/Sanitation, Availability/Delivery, Government Policy, and Background of Chef) as presented on the farmers’ survey was used. However, this time, a dependent variable (Willingness to Negotiate) was added to the questionnaire, to identify current patters of the restaurant industry’s willingness to negotiate and purchase LPFs from local farmers.

This was performed based on a list of the population of restaurants obtained by the Central Bureau of Statistics (CBS Aruba), which consisted of a total of 695 restaurants. The list includes mainly commercial restaurant operations, which included independent restaurants, chain restaurants, and franchises (upscale, casual service, family service, and quick-service). A convenience sampling technique was used of restaurants operations located in the tourist area of Aruba, which is classified by the Central Bureau of Statistics as Zone 1, Area 11. This area consists of a total of 130 registered restaurants. Some challenges were faced with the database of restaurants, as not all restaurants had up-to-date contact information (telephone numbers and email), and because of lack of manpower within this department, and because of an assumed high failure rate of restaurants, it is currently a tedious task to have a detailed database of all restaurants on the island. From the total population of 130 registered restaurants, a total sample of 56 restaurants was obtained, which is a 43% response rate.

Several data collection method was used to obtain the majority of the restaurants to participate with this research project. First, email and telephone communications were sent to the restaurant industry representatives to invite them for a focus group/questionnaire session, which had similar structure and approach that was used during the data collection with the local farmers. However, two sessions had to be organized, as only a few representatives (15 total) were present during the first session. Followed by the two above-mentioned sessions, individual sessions were also conducted with the remainder restaurant operations in Zone 1, however, with a few exceptions of restaurants located in other areas on the island. According to the author, it was essential to also obtain the perception of these unique restaurants that served promote themselves as “local restaurants”, but that were not located in Zone 1. Additional to the individual and group sessions, an online survey was created and sent to the remainder restaurants

listed in Zone 1. Data collection was performed during the months of August, September and October of 2012.

In order to respond to the research questions stated in chapter 1, basic descriptive analyses (Mean and Standard Deviation) was performed on the variables proposed in the literature review. Important to indicate here is that the approach is similar with the one used for local farmers which consisted of computing descriptive statistics to summarize, organize and describe the data collected. The goal of descriptive statistics is to provide a representation of the data that describes in a graphical and or numerical form, the results of this research.

Additional to the above-mentioned descriptive statistical techniques, an independent sample t-test was conducted to compare the mean scores between farmers and restaurants. Independent t-tests are normally used when there are two experimental conditions and or different subjects are assigned to each condition (Field, 2000) page207. Basically, an independent-samples t-test is used when you want to compare the mean score, on some continuous variable, for two different groups of subjects (Pallant, 2005), as it will confirm if there is a statistically significance difference in the mean scores for the two groups. For this scenario, the data was collected on only one occasion, but from only two different sets of groups.

### Phase 3 Tourists' perception

To address the gap in research related to Locally Produced Foods, especially for small island destinations, the author of this study attempted to determine the perception of repeat visitors regarding their willingness to pay for Locally Produced Foods (LPF), and to examine what factors predict their interest in buying Locally Produced Foods in foodservice operations on

the island. To obtain a solid sample size of repeat visitors, the author partnered with the local Destination Management Organization of the island, namely the Aruba Tourism Authority (ATA). Upon an agreement with the CEO, a structured survey was created which included the five factors presented in the literature review. Also with this survey, independent variables such as pricing, marketing, sanitation, delivery, government policy and background of chefs related to Locally Produced Foods were investigated to mainly identify the potential factors, which will stimulate new demand for locally grown food products. More specifically, the survey will focus on determining existing patterns of demand, and to identify any possible obstacles and potentials for stimulating new demand for locally grown foods within the island's food supply chain.

The online survey was conducted during the months of December 2012 to February 2013 and was sent by email using ATA's current database of the last three years of repeat visitor. As a strategy to obtain a high response rate, ATA decided to provide the respondents with an incentive to participate in a raffle once they provide their email address and completed the survey. Also, a "thank you" note by the Minister of Tourism, Transportation and Labor, Mr. Otmar Oduber, and the Chief Executive Officer of ATA, Mrs. Ronella Tjin Asjoe, was added on the introduction section of the survey.

The respondents' email address was then used to merge with an already existing database, which included additional demographic data obtained from previous data collection conducted by ATA. The raffle consisted of raffle to win a two round-trip airfare ticket (coach), and seven nights accommodation in Aruba, where the winner was announced on ATA's Facebook page.

Also with this sample, an independent-sample t-test was conducted to compare the mean scores between two set of variables. Independent t-tests are normally used when there are two

experimental conditions and or different subjects are assigned to each condition (Field, 2000, p.207), which for this sample, consisted on measuring factors that are statistically significant with respondents who chose “Yes” and “No” for the question related to the tourists’ interest in exploring Locally Produced Foods from Aruba during their stay on the island.

Additional to the independent-sample t-test, Logistic Regression was conducted to test the predictive power of a set of variables and to assess the relative contribution of each individual variable (Pallant, 2005), More specifically, Logistic Regression allows you to test models to predict categorical outcomes with two or more categories, where the predictor (independent) variables can be either categorical or continuous, or a mix of both in the model. For this scenario, the questionnaire consisted of a nominal (categorical) dependent variable. A total of 2181 samples were used for the analysis.

## **CHAPTER FOUR: FINDINGS.**

The following section describes the results of this study, which addresses the perceptions of farmers, restaurant operators, and tourists regarding the six constructs – Product/Price, Marketing Ability, Safety/Sanitation, Availability/Deliver, Government Policy, and Background of Chef – presented in the before-mentioned proposed framework. Study results address the gap in research by determining the perceptions of farmers and restaurants regarding the promotion and sale of locally produced food (LPF) items to stakeholders to the tourism industry.

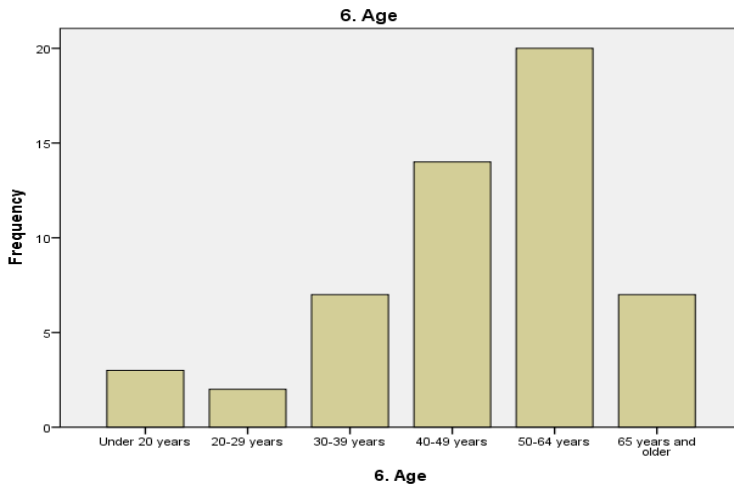
### Phase 1 Farmers' Perception Results

During the focus group session, a total of 55 farmers completed the list of 59 structured and semi-structured questions. There are 102 officially registered farmers at the Department of Agriculture in Aruba (Noord 18, Santa Cruz 36, San Nicolas 13, Savaneta 9, Paradera 17, Piedra Plat 4, Pos Chiquito 3, and Oranjestad 2), and having 55 of them respond to the survey interview represents a 53.92% response rate.

The majority of respondents were males (96.2%), while 3.8% were females. There were several age groups represented in the sample. In descending order by number of respondents, the age groups were: 50-64 years (37.7%), 40-49 years old (26.4%), 30-39 years old (13.2%), 65 years and older (13.2%), under 20 years old (5.7%), and 20-29 years (3.8%). The demographic details are presented below in Table 7.



**Table 7: Age group demographic information about farmers**



*Source: Table created by the author using SPSS results from descriptive analysis.*

Another demographic question asked was related to farmers' export of their production. Responses to the question "Do you export your production?" showed that all respondents' production remains in Aruba. However, when a related demographic question was asked about the farmers' interest in exporting their production, 19.1% of the respondents reported that they do wish to export their production to other countries, 72.3% of the respondents do not wish to export their production, and 8.5% respondents indicated that their production is mainly for their own usage.

Also, a descriptive analysis was conducted to measure the mean scores and standard deviations of the items presented on a survey to represent the variables of Product/Price, Marketing Ability, Safety/Sanitation, Availability/Delivery, Government Policy, and Background of Chef. The purpose of the descriptive analysis was to describe the characteristics of the farmers' sample in terms of their perceptions of each item presented in the proposed framework. Respondents were also asked about their perceptions of each of the items presented

in the proposed framework by using a Likert scale of 1-5, where 1=completely disagree, 2=disagree, 3=neutral, 4=agree, and 5=completely agree.

A total of six (6) questions were presented for the item “Product Price/Cost.” Table 8 summarizes the mean scores and standard deviations of this item.

The highest mean rating, on the question “As a farmer, I am willing to negotiate with Hotels and Restaurants,” was (M=3.80, SD=.890), with the lowest mean rating of (M=2.07, SD=.900) for the statement “Locally Produced Foods Perishes sooner than Imported Foods.” The high mean score of 3.80 indicates that the majority of the farmers rated that statement between “neutral” and “agree.”

**Table 8: Descriptive results of the item “Product/Price”**

Product/Price Farmers			
Descriptive Statistics			
	N	Mean	Std. Deviation
22. As a farmer, I am willing to negotiate with H and R	55	3.80	0.890
25. LPF perishes sooner	55	2.07	0.900
Valid N (listwise)	53		

*Source: Table created by the author using SPSS results from descriptive analysis.*

For the item “Marketing Ability,” a total of six (6) questions were presented. Table 9 summarizes the mean scores and standard deviations of this item. The highest mean, on the

statement “If hotels and restaurants buy Locally Produced Foods, it will benefit the local economy,” was (M=4.22, SD=.762), with the lowest mean ratings of (M=2.90, SD=1.142) for the statement “As a farmer, I have the knowledge to market my products to hotels and restaurants.”

Similar to “Product Price/Cost,” the high mean score of 4.22 indicates that majority of the farmers agreed with the statement “if hotels and restaurants purchase more Locally Produced Foods (LPF), it would benefit the local economy.” Also similarly, and with a mean score of 4.21, local farmers also responded that if hotels and restaurants purchased more LPF, it would also benefit the primary sector of the island.

**Table 9: Descriptive results of the item “Marketing Ability”**

Marketing Ability Farmers			
Descriptive Statistics			
	N	Mean	Std. Deviation
31. If H&R buy LPF it would benefit economy	55	4.22	0.762
27. As a farmer, I have the knowledge to market my products to H&R	52	2.90	1.142
Valid N (listwise)	51		

*Source: Table created by the author using SPSS results from descriptive analysis.*

For the item “Safety/Sanitation,” a total of four (4) questions were presented. Table 10 summarizes the mean scores and standard deviations of the item presented. The highest mean rating was (M=4.55, SD=.538), for the statement “As a local producer, it is important to produce

hygienic foods for human consumption,” while the lowest mean rating was (M=4.11, SD=.904), for the statement “It is my own responsibility to educate myself to produce hygiene foods.”

Famers also agreed on the importance of producing food products that are healthy for human consumption, with another high mean score of 4.51, while with a mean score of 4.55, the majority of the farmers agreed with the statement that “local farmers need to produce food products that are hygiene for human consumption.”

**Table 10: Descriptive results of the item “Safety/Sanitation”**

Farmers Safety & Sanitation			
Descriptive Statistics			
	N	Mean	Std. Deviation
34. As local producer, it is important to produce hygiene food for hum	55	4.55	0.538
36. It is my own responsibility to educate myself to produce hygiene foods	54	4.11	0.904
Valid N (listwise)	54		

*Source: Table created by the author using SPSS results from descriptive analysis.*

For the item “Availability/Delivery,” a total of seven (7) questions were presented to the local farmers. Table 11 summarizes the mean scores and standard deviations of this item. The highest mean rating, on the statement “Hotels and restaurants do not communicate with local farmers,” was (M=3.78, SD=1.058), with the lowest mean rating of (M=3.09, SD=1.170) for the statement “Farmer has transportation resources to deliver to hotels and restaurants during the week.” Similar to “Product Price/Cost,” the high mean score of 3.78 indicates that the majority of the farmers were very close to agreeing with the statement “hotels and restaurants do not

communicate with local farmers. Also interesting to illustrate, perhaps supporting the previous survey item, is that farmers also came very close to agreeing with the statement “Farmer is willing to sell products to hotels and restaurants located in the touristic area,” with a mean score of 3.78.

**Table 11: Descriptive results of the item “Availability/Delivery”**

Farmers Availability/Delivery			
Descriptive Statistics			
	N	Mean	Std. Deviation
43. H&R do not communicate with farmers	54	3.78	1.058
40. Farmer has transportation resources to deliver to H&R during week	54	3.09	1.170
Valid N (listwise)	51		

*Source: Table created by the author using SPSS results from descriptive analysis.*

For the item “Government Policy,” a total of nine (9) questions were presented to the local farmers. Table 12 summarizes the mean scores and standard deviations of each survey item presented. The highest mean rating, on the statement “Farmer need additional funds from the government,” was (M=3.96, SD=.981), with the lowest mean rating of (M=3.30, SD=1.238) for the statement “Government is the only entity responsible to sustain consistent production.” The high mean score of 3.96 indicates that majority of the farmers rated that statement between “neutral” and “agree.”

**Table 12: Descriptive results of the item “Government Policy”**

Farmers Government Policy			
Descriptive Statistics			
	N	Mean	Std. Deviation
44. Farmer needs additional funds from the government	55	3.96	0.981
45. Government is the only entity responsible to sustain consistent produc	54	3.30	1.238
Valid N (listwise)	53		

*Source: Table created by the author using SPSS results from descriptive analysis.*

Finally, for the item “Background of Chef,” a total of five (5) questions related to this item were presented to the local farmers. Table 13 summarizes the mean scores and standard deviations of this item. The highest mean rating, on the statement “A chef has to be the main one interested to buy Locally Produced Foods,” was (M=3.96, SD=.868), with the lowest mean rating of (M=3.20, SD=1.219) for the statement “A chef has to be an Aruban to have interest in Locally Produced Foods.” Previous research in the Caribbean (Torres, 2011) has indicated similar results, claiming that the chef is the most responsible for establishing this linkage between a restaurant and farmers in order to promote and sell LPF in the restaurant.

**Table 13: Descriptive results of the item “Background of Chef”**

Farmers Background of Chef			
Descriptive Statistics			
	N	Mean	Std. Deviation
55. Chef has to be the main one interested to buy LPF	54	3.96	0.868
53. Chef has to be Aruban to have interest in LPF	54	3.20	1.219
Valid N (listwise)	52		

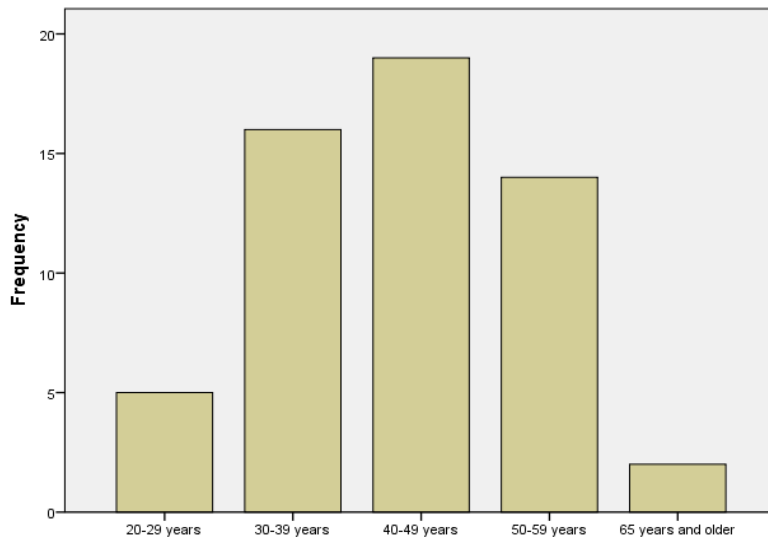
*Source: Table created by the author using SPSS results from descriptive analysis.*

### Phase 2 Restaurants’ Perception Results

Similar to the methodology used for the local farmers, the following exploratory study results also addresses the gap in research by determining the perceptions of restaurant operators regarding the promotion and sale of Locally Produced Food (LPF) items to stakeholders in the tourism industry. Several data collection methods were used to obtain the sample of the restaurants that participated in this research project. As described earlier, a convenience sampling technique was used of restaurant operations located in the tourist area of Aruba, which is classified by the Central Bureau of Statistics Aruba as Zone 1, Area 11. From the total population of 130 registered restaurants, a total sample of 56 restaurants was obtained, which is a 43% response rate. Some challenges were faced with the database of restaurants: because not all restaurants had up-to-date contact information (telephone numbers and email), because of lack of manpower within the Central Bureau of Statistics Aruba, and because of an assumed high failure rate of restaurants, it is currently a tedious task to have a detailed database of all restaurants on the island.

Also for this sample group, the majority of the respondents were males (83.9%), while (16.1%) were females. There were also several age groups presented in the sample, with the largest group being respondents aged 40-49 (33.9%), followed by respondents 30-39 years old (28.6%), 50-59 years old (25%), 20-29 years old (8.9%), and 65 years and older (3.6%). The demographic details are presented below in Table 14.

**Table 14: Age group demographic information about restaurant/foodservice operators.**



*Source: Table created by the author using SPSS results from descriptive analysis.*

Similar to the farmers' analysis, a descriptive analysis was conducted to measure the mean scores of the items presented together with the standard deviation. The purpose of the descriptive analysis was to describe the characteristics of the farmers' perceptions of each item presented in the proposed framework. Respondents were also asked about their perceptions of each of the items presented on the proposed framework by using a Likert scale of 1-5, where 1=completely disagree, 2=disagree, 3=neutral, 4=agree, and 5=completely agree.



A total of six (6) questions were presented for the item “Product Price/Cost.” Table 15 summarizes the mean scores and standard deviations of this item.

The highest mean rating, on the statement “As a hotel or restaurant owner, I am willing to negotiate with local farmers,” was (M=4.25, SD=.745), with the lowest mean rating of (M=2.46, SD=1.026) for the statement “Local farmers are not interested to negotiate with hotels and restaurants in the touristic area.” The high mean score of 4.25 indicates that the majority of the restaurant operators rated that statement between “neutral” and “agree.”

**Table 15: Descriptive results of the item “Product/Price”**

Product/Price Restaurants			
Descriptive Statistics			
	N	Mean	Std. Deviation
8.As H&R, I am willing to negotiate with local farmers	56	4.25	0.745
9.Local farmers are not interested to negotiate with H&R	56	2.46	1.026
Valid N (listwise)	56		

*Source: Table created by the author using SPSS results from descriptive analysis.*

For the item “Marketing Ability,” a total of six (6) questions were presented. Table 16 summarizes the mean scores and standard deviations of this item. The highest mean rating was (M=4.30, SD=.537), for the statement “If hotels and restaurants buy Locally Produced Foods, it would benefit the primary sector,” with the lowest mean rating of (M=2.71, SD=.967) for the statement “Farmers have the knowledge to market their products with hotels and restaurants.”

Similar to “Product Price/Cost,” the high mean score of 4.30 indicates that majority of the restaurant operators rated the statement “If hotels and restaurants purchase more Locally Produced Foods (LPF), it would benefit the local economy” between “agree” and “completely agree.” Notably, local farmers responded with an identical high mean score of 4.30 to the similar statement that if hotels and restaurants purchased more LPF, it would benefit the primary sector of the island.

**Table 16: Descriptive results of the item “Marketing Ability”**

Marketing Ability Restaurants			
Descriptive Statistics			
	N	Mean	Std. Deviation
13. Farmer have the knowledge to market their products with H&R	56	2.71	0.967
18.If H&R buy LPF it would benefit primary sector	56	4.30	0.537
Valid N (listwise)	56		

*Source: Table created by the author using SPSS results from descriptive analysis.*

For the item “Safety/Sanitation,” a total of four (4) questions were presented. Table 17 summarizes the mean scores and standard deviations of this item. The highest mean rating was (M=4.57, SD=.499), for the statement “As hotel and restaurant operators, it is important that farmers produce hygiene foods for customers,” and the lowest mean rating of (M=3.71, SD=.967) for the statement “It is the farmers’ own responsibility to educate themselves to produce healthy foods.” The high mean score of 4.57 indicates that majority of the restaurants rated that statement between “agree” and “completely agree.” Important to highlight is another

high mean score of 4.57 that indicates that restaurants also agreed on the importance of producing food products that are healthy for human consumption.

**Table 17: Descriptive results of the item “Safety/Sanitation”**

Restaurants Safety & Sanitation			
Descriptive Statistics			
	N	Mean	Std. Deviation
20.As H&R, it is important that farmers produce hygiene food for customers	56	4.57	0.499
21.Farmers own responsibility to educate themselves to produce healthy foods	56	3.71	0.967
Valid N (listwise)	56		

*Source: Table created by the author using SPSS results from descriptive analysis.*

For the item “Availability/Delivery,” a total of seven (7) questions were presented to the restaurants and foodservice representatives. Table 18 summarizes the mean scores and standard deviations of this item. The highest mean rating was (M=4.12, SD=.935), for the statement “Farmers cannot keep up with local produce demand,” with the lowest mean rating of (M=3.13, SD=.854) for the statement “Farmers have transportation resources to deliver to hotels and restaurants in the touristic area,” Similar to “Product Price/Cost,” the high mean score of 4.12 indicates that the majority of the restaurants rated that statement between “agree” and “completely agree.” Also interesting to illustrate, perhaps questioning previous related statements in the literature review section, is the low mean score of 3.13, indicating that restaurant operators believe that transportation does not influence the availability of these Locally Produced Foods to the hotels and restaurants.

**Table 18: Descriptive results of the item “Availability/Delivery”**

Restaurants Availability/Delivery			
Descriptive Statistics			
	N	Mean	Std. Deviation
25.Farmers have transportation resources to deliver to H&R touristic area	56	3.13	0.854
28.Farmers cannot keep up with local produce demand	56	4.12	0.935
Valid N (listwise)	56		

*Source: Table created by the author using SPSS results from descriptive analysis.*

For the item “Government Policy,” a total of seven (7) questions were presented to the restaurant representatives. Table 19 summarizes the mean scores and standard deviations of the survey items presented. The highest mean rating was (M=4.00, SD=.853), for the statement “Farmers need additional funds from the government,” with the lowest mean rating of (M=3.27, SD=1.036) for the statement “Government is the only entity responsible to sustain consistent production.” The high mean score of 4.00 may indicate that the majority of the restaurant operators rated that statement between “agree” and “completely agree.”

**Table 19: Descriptive results of the item “Government Policy”**

Restaurants Government Policy			
Descriptive Statistics			
	N	Mean	Std. Deviation
30.Farmer needs additional funds from the government	56	4.00	0.853
31.Government is the only entity responsible to sustain consistent produc	56	3.27	1.036
Valid N (listwise)	56		

*Source: Table created by the author using SPSS results from descriptive analysis.*

For the item “Background Chef,” a total of four (4) survey items related to this item were presented to the restaurant representatives. Table 20 summarizes the mean scores and standard deviations of this item. The highest mean rating was ( $M=3.73$ ,  $SD=.751$ ), for the statement “Chefs in Aruba are interested to put Locally Produced Foods on their menu,” with the lowest mean rating of ( $M=1.84$ ,  $SD=.949$ ) for the statement “Chefs have to be a native Aruban to have interest in Locally Produced Foods.” The high mean score of 3.73 indicates that the majority of restaurant operators rated that statement between “neutral” and “agree.” Previous research in the Caribbean (Torres, 2011) has indicated similar results, suggesting that the chef in charge is the most responsible for establishing this linkage between the restaurant and farmers in order to promote and sell Locally Produced Foods.

**Table 20: Descriptive results of the item “Background of Chef”**

Restaurants Background of Chef			
Descriptive Statistics			
	N	Mean	Std. Deviation
37.Chef has to be Aruban to have interest in LPF	56	1.84	0.949
40.Chefs in Aruba are interested to put LPF on their menu	56	3.73	0.751
Valid N (listwise)	56		

*Source: Table created by the author using SPSS results from descriptive analysis.*

Finally, the additional factor/construct “Willingness to Negotiate” was added to this questionnaire with seven (7) survey items. Table 21 summarizes the mean scores and standard deviations of this item. The highest mean ratings was (M=3.61, SD=1.039), for the statement “The lack of availability and delivery of local farmers will limit restaurant operators willingness to negotiate with local farmers,” with the lowest mean rating of (M=2.14, SD=.841) for the statement “The background of the Chef will limit its willingness to negotiate with local farmers.” Contradicting the previous results in Table 18, which indicated that lack of transportation didn’t play an important role in the supply chain, the high mean score on this statement illustrates that both availability and delivery do play a role.

**Table 21: Descriptive results of the item “Willingness to Negotiate”**

Restaurants Willingness to Negotiate			
Descriptive Statistics			
	N	Mean	Std. Deviation
41.Higher prices of LPF compared to imported foods limit your WTN	56	3.25	1.031
42.Lack of marketing ability farmers limit your WTN	56	3.41	0.910
43.Lack of hygiene and sanitation standards farmers limit your WTN	56	2.96	1.044
44.Lack of availability and delivery farmers limit your WTN	56	3.61	1.039
45.Lack of government funding to farmers limit your WTN	56	2.96	1.144
46.Background of your chef limits WTN	56	2.14	0.841
47.Inability of farmers to provide tax receipt WTN	56	2.95	1.197
Valid N (listwise)	56		

*Source: Table created by the author using SPSS results from descriptive analysis.*

In addition to the above-mentioned descriptive statistical techniques, an independent sample t-test was conducted to compare and evaluate whether there was statistical significance in the mean scores between the survey items of the local farmers and restaurants. Independent t-tests are normally used when there are two experimental conditions and/or when different subjects are assigned to each condition (Field, 2000). Basically, an independent-samples t-test is used to compare the mean score, on some continuous variable, for two different groups of subjects (Pallant, 2005), as it will confirm whether there is a statistically significant difference between the mean scores for the two groups. For this scenario, the data were collected on only one occasion, but from two different sets of respondents (farmers and restaurants).

Results indicate several statistically significant differences in scores between farmers and restaurant operators. The following 10 survey items reported a statistically significant difference.

First was for the survey item “The agriculture of Aruba went downwards due to competition for land and infrastructure, as it is being used for other economic purposes such as hotel and restaurant buildings,” for farmers (M=2.95, SD=1.224) and restaurants [M=3.96, SD=1.078;  $t(109)=-4.657$ ,  $p=.000$ ]. Second was for the survey item “Locally produced foods perishes sooner than imported produce,” for farmers (M=2.56, SD=.898) and restaurants [M=2.07, SD=.892,  $t(109)=2.898$ ,  $p=.005$ ].

Another survey item that was different between the groups was “It is the farmers’ own responsibility to educate themselves on how to produce healthy foods,” for farmers (M=3.71, SD=.975) and restaurants [M=4.25, SD=.837,  $t(109)=$ ,  $p=.002$ ]. Fourth difference was for the survey item “It is the farmers’ own responsibility to educate themselves on how to produce hygiene foods,” for farmers (M=3.76, SD=.962) and restaurants [M=4.11, SD=.896,  $t(108)= -1.949$ ,  $p=.054$ ]. Fifth was for the survey item “Farmers so have the resources (transportation) to deliver their products to hotels, restaurants, and other foodservice facilities located in the touristic area,” for farmers (M=3.11, SD=.854) and restaurants [M=3.60, SD=.993,  $t(108)= -2.781$ ,  $p=.006$ ].

Additional items that were statistically different were “Farmers cannot keep up with the local produce demand to hotels, restaurants, and other foodservice facilities,” for farmers (M=4.11, SD=.936) and restaurants [M=3.44, SD=.977,  $t(108)=3.687$ ,  $p=.000$ ]; “A Chef has to be an Aruban to have interest in Locally Produced Foods,” for farmers (M=1.84, SD=.959) and restaurants [M=3.18, SD=1.219,  $t(108)= -6.438$ ,  $p=.000$ ]; “A Chef has to be educated in local foods from Aruba, in order for him/her to buy Locally Produced Foods,” for farmers (M=3.05, SD=1.283) and restaurants [M=3.70, SD=1.160,  $t(107)= -2.770$ ,  $p=.007$ ]; and “The Chef has to be the main person interested to buy Locally Produced Foods,” for farmers (M=3.31, SD=1.169)



and restaurants [M=3.93, SD=.900,  $t(108) = -3.109$ ,  $p = .002$ ]. The last item that was different between farmers and restaurants was the survey item “The Chefs in Aruba (now and in the past) are interested to put local products on their menu,” for farmers (M=3.73, SD=.757) and restaurants [M=3.39, SD=.998,  $t(107) = 1.997$ ,  $p = .048$ ]. Table 22 summarizes the above-mentioned results of the independent samples t-test.

**Table 22: Independent Samples t-test results**

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
4. Agri Aruba Downwards due Comp Land	Equal variances assumed	8.016	0.006	-4.657	109	0.000	-1.019	0.219	-1.452	-0.585
	Equal variances not assumed			-4.652	106.79	0.000	-1.019	0.219	-1.453	-0.585
11. LPF perishes sooner than imported foods	Equal variances assumed	2.880	0.093	2.898	109	0.005	0.492	0.170	0.156	0.829
	Equal variances not assumed			2.898	108.931	0.005	0.492	0.170	0.156	0.829
21. Farmers own responsibility to educate themselves to produce healthy foods	Equal variances assumed	1.602	0.208	-3.138	109	0.002	-0.541	0.172	-0.883	-0.199
	Equal variances not assumed			-3.134	105.941	0.002	-0.541	0.173	-0.883	-0.199
22. Farmers own responsibility to educate themselves to produce hygiene foods	Equal variances assumed	0.328	0.568	-1.949	108	0.054	-0.345	0.177	-0.697	0.006
	Equal variances not assumed			-1.949	107.465	0.054	-0.345	0.177	-0.697	0.006
25. Farmers have transportation resources to deliver to H&R touristic area	Equal variances assumed	2.148	0.146	-2.781	108	0.006	-0.491	0.177	-0.841	-0.141
	Equal variances not assumed			-2.781	105.633	0.006	-0.491	0.177	-0.841	-0.141
28. Farmers cannot keep up with local produce demand	Equal variances assumed	1.826	0.179	3.687	108	0.000	0.673	0.182	0.311	1.034
	Equal variances not assumed			3.687	107.807	0.000	0.673	0.182	0.311	1.034
37. Chef has to be Aruban to have interest in LPF	Equal variances assumed	7.530	0.007	-6.438	108	0.000	-1.345	0.209	-1.760	-0.931
	Equal variances not assumed			-6.438	102.287	0.000	-1.345	0.209	-1.760	-0.931
38. Chef has to be educated in LPF in order to buy LPF	Equal variances assumed	4.144	0.044	-2.77	107	0.007	-0.649	0.234	-1.114	-0.185
	Equal variances not assumed			-2.773	106.283	0.007	-0.649	0.234	-1.113	-0.185
39. Chef has to be the main one interested to buy LPF	Equal variances assumed	13.885	0.000	-3.109	108	0.002	-0.618	0.199	-1.012	-0.224
	Equal variances not assumed			-3.109	101.371	0.002	-0.618	0.199	-1.013	-0.224
40. Chefs in Aruba are interested to put LPF on their menu	Equal variances assumed	5.610	0.020	1.997	107	0.048	0.338	0.169	0.002	0.674
	Equal variances not assumed			1.992	98.787	0.049	0.338	0.170	0.001	0.676

Source: Table created by the author using SPSS results from inferential statistical analysis.

### Phase 3 Tourists' Perception Results

In order to explore Aruba's repeat visitors' perceptions of Locally Produced Foods, a logistic regression was conducted to assess how well the set of predictor variables (Product Price/Cost, Marketing Ability, Safety/Sanitation, Availability/Delivery, Government Policy, Background Chef, and Willingness to Purchase) predicts or explains the categorical dependent variable "Interest in Exploring Locally Produced Foods." The logistic regression technique provides an indication of the adequacy of the set of predictor variables by assessing the "goodness of fit." It also provides an indication of the relative importance of each predictor variable, or the interaction among the predictor variables (Pallant, 2005, p.163). It is important to highlight that the logistic regression does not make assumptions concerning the distribution of scores for the predictor variables; however, it is sensitive to high correlations among the predictor variables, which is also referred to as multicollinearity (Pallant, 2005, p. 163).

A test for the full model against a constant-only model was statistically significant, indicating that the predictors as a set reliably distinguished between acceptors and decliners of their interest (chi square = 261.201,  $p < 0.000$  with  $df = 17$ ). Nagelkerke's  $R^2$  of .200 indicated a moderate relationship between prediction and grouping. Prediction success overall was 98.8% for "yes" respondents and 11.9% for "no" respondents. The Wald criterion demonstrated that question 12 c (It is important that farmers, restaurants and other foodservice facilities produce Locally Produced Foods that are healthy and meet international sanitation standards)  $p = .047$ , question 13 a (As a tourist, you are willing to explore local farmer markets or visit local farmers

to purchase Locally Produced Foods)  $p = .000$ , question 13 c (A government approved seal of quality for local farms and restaurants producing Locally Produced Foods, will stimulate your interest in exploring with Locally Produced Foods)  $p = .034$ , question 14 c (I am willing to pay more for Locally Produced Foods, if farmers, restaurants and other foodservice facilities produced Locally Produced Foods that are healthy and meet international sanitation standards)  $p = .034$ , and question 14 d (I am willing to pay more if farmers and restaurants have a government approval seal)  $p = .048$  each made a significant contribution to prediction.

Tables 23 (The classification table), 24 (Variables in the equation table), 25 (Variables not in the equation table), 26 (Omnibus tests of model coefficients), 27 (Model summary), 28 (Hosmer and Lemeshow test), 29 (Contingency table for Hosmer and Lemeshow test), 30 (Classification table), and 31 (Variables in the equations table).

**Table 23: The Classification Table**

Classification Table <sup>a,b</sup>					
Observed			Predicted		
			Interest in LPF 1 (yes)	0 (no)	Percentage Correct
Step 0	Q10: Are you interested in exploring LPF items and menu dishes during your stay on the island	1 (yes)	1862	0	100
		0 (no)	319	0	0
Overall Percentage					85.4

a. Constant is included in the model.

b. The cut value is .500

*Source: Table created by the author using SPSS results from inferential statistical analysis.*

**Table 24: Variables in the equation**

		Variables in the Equation					
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-1.764	0.061	847.653	1	0	0.171

*Source: Table created by the author using SPSS results from inferential statistical analysis.*

**Table 25: Variables not in the equation table**

	Score	df	Sig.
Q11a: How would you rate the overall "Quality of service" of the island restaurant menus?	3.450	1	0.063
Q11b: How would you rate the overall "Variety of entrees" of the island restaurant menus?	2.365	1	0.124
Q11c: How would you rate the overall "Offerings of Local/Authentic Cuisine" on the menus presented on the island restaurant menus?	8.410	1	0.004
Q12a: Restaurants and other foodservice facilities on the island have the knowledge on how to market locally produced foods on their menus.	22.194	1	0.000
Q12b: If restaurants and other foodservice facilities purchase, produce, and promote the locally produced foods, the primary sector and the local economy would be benefited.	81.085	1	0.000
Q12c: It is important that farmers, restaurants and other foodservice facilities produce locally produced foods that are healthy and meet international sanitation standards.	79.937	1	0.000
Q13a: As a tourist, you are willing to explore local farmer markets or visit local farmers to purchase locally produced foods.	199.673	1	0.000
Q13b: Hotels, restaurants and other foodservice facilities communicate sufficiently with tourists about locally produced foods.	15.752	1	0.000
Q13c: A government approved seal of quality for local farms and restaurants producing locally produced foods, will stimulate your interest in exploring with locally produced foods.	88.998	1	0.000
Q13d: A Chef has to be local (an Aruban) to have interest in providing locally produced foods on his restaurant menus.	1.299	1	0.254
Q13e: A Chef has to be educated in locally produced foods from Aruba, in order for him to purchase, prepare and market these food products on his/her menus.	47.939	1	0.000
Q14a: I am willing to pay more for locally produced foods sold in local grocery stores and those offered on restaurant	81.259	1	0.000
Q14b: I am willing to pay more for local produced foods if they are properly promoted by farmers, restaurants and other foodservice facilities	82.306	1	0.000
Q14c: I am willing to pay more for locally produced foods, if farmers, restaurants and other foodservice facilities produce locally produced foods that are healthy and meet international sanitation standards.	105.744	1	0.000
Q14d: I am willing to pay more if farmers and restaurants have a government approved seal	55.722	1	0.000
Q14e: I am willing to pay more for locally produced foods, regardless of the background of the chef in charge at the restaurant	61.082	1	0.000
Q14f: I am willing to pay more if the staff members are educated on how to produce locally produced foods that are healthy and meet international sanitation standards.	89.702	1	0.000
Overall Statistics	286.368	17	0

*Source: Table created by the author using SPSS results from inferential statistical analysis.*

**Table 26: Omnibus tests of model coefficients**

<b>Omnibus Tests of Model Coefficients</b>				
		Chi-square	df	Sig.
	Step	261.201	17	0
	Block	261.201	17	0
Step 1	Model	261.201	17	0

*Source: Table created by the author using SPSS results from inferential statistical analysis.*

**Table 27: Model Summary**

<b>Model Summary</b>			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	1554.142 <sup>a</sup>	0.113	0.200

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

*Source: Table created by the author using SPSS results from inferential statistical analysis.*

**Table 28: Hosmer and Lemeshow test**

<b>Hosmer and Lemeshow Test</b>			
Step	Chi-square	df	Sig.
1	14.889	8	0.061

*Source: Table created by the author using SPSS results from inferential statistical analysis.*

**Table 29: Contingency Table for Hosmer and Lemeshow test**

Contingency Table for Hosmer and Lemeshow Test						
		Interested LPF=yes		Interested LPF=no		Total
		Observed	Expected	Observed	Expected	
Step 1	1	206	210.274	12	7.726	218
	2	210	207.873	8	10.127	218
	3	209	205.356	9	12.644	218
	4	208	202.681	10	15.319	218
	5	194	199.84	24	18.16	218
	6	204	195.878	14	22.122	218
	7	183	188.948	35	29.052	218
	8	169	176.879	49	41.121	218
	9	159	157.332	59	60.668	218
	10	120	116.939	99	102.061	219

Source: Table created by the author using SPSS results from inferential statistical analysis.

**Table 30: Classification table**

Classification Table <sup>a</sup>				
	Observed	Predicted		
		Interested in LPF		Percentage Correct
		(1) Yes	(0) No	
Step 1	Interest LPF 1 (yes)	1839	23	98.8
	0 (no)	281	38	11.9
	Overall Percentage			86.1

a. The cut value is .500

Source: Table created by the author using SPSS results from inferential statistical analysis.



**Table 31: Variables in the equation**

	Variables in the Equation						95% C.I. for EXP(B)	
	B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Q12c: It is important that farmers, restaurants and other foodservice facilities produce locally produced foods that are healthy and meet international sanitation standards.	-0.234	0.118	3.958	1	0.047	0.791	0.628	0.997
Q13a: As a tourist, you are willing to explore local farmer markets or visit local farmers to purchase locally produced foods.	-0.490	0.057	73.197	1	0.000	0.612	0.547	0.685
Q13c: A government approved seal of quality for local farms and restaurants producing locally produced foods, will stimulate your interest in exploring with locally produced foods.	-0.150	0.070	4.509	1	0.034	0.861	0.750	0.989
Q14c: I am willing to pay more for locally produced foods, if farmers, restaurants and other foodservice facilities produce locally produced foods that are healthy and meet international sanitation standards.	-0.283	0.134	4.498	1	0.034	0.753	0.580	0.979
Q14d: I am willing to pay more if farmers and restaurants have a government approved seal.	0.229	0.116	3.913	1	0.048	1.257	1.002	1.578
Constant	3.669	0.597	37.731	1	0.000	39.225		

*Source: Table created by the author using SPSS results from inferential statistical analysis.*

## **CHAPTER FIVE: DISCUSSION.**

This study's results can help academics, but in particular, practitioners to focus their attention on factors that either constrain or enhance the current food supply chain of small island destinations, and to address the areas on which industry stakeholders and tourist visitors place highest priority. Results can also provide stakeholders in both the agricultural and restaurant industries the necessary information to establish a sustainable food supply chain that focuses on economic, nutritional and environmental benefits. This research, which conducted a 360-degree exploratory study on the three main stakeholders involved (farmers, restaurants, and tourists) in this supply chain, can be considered an initiation ceremony for many more in-depth studies related to the establishment, application, and sustaining of such a food supply chain for small island destinations. This is particularly needed in small islands in the Caribbean, the vast majority of which are heavily dependent on imported food supplies. The following conclusions and future research recommendations are intended for all three stakeholders (Farmers, Restaurants, and Tourists).

As anticipated, the majority of farmers sampled were males (96.2%), compared to females (3.8%). However, according to recent reports from USDA, women now have a growing presence in U.S. agriculture, running more farms and ranches, operating more land, and producing greater values of agricultural products than they were in previous years (USDA, 2007). A recommendation for the local government would be that since the projected 2013 population growth for females in Aruba is estimated to be around 54.7%, compared to 45.2% for males, an opportunity exists for the local government to promote a diversification of the local

female workforce. This should be in conjunction with sustainable tourism growth strategies executed by the local government. However, future research must be conducted to explore these opportunities, while investigating what barriers exist to promoting more female entrepreneurs in the agricultural sector. More specifically, it can be recommended to the female workforce to participate in modern or innovative type of farming, which are less labor intensive and can include operational approaches such as horticulture or hydroponics.

Demographic information related to restaurant operators is not necessarily the main focus of this research study, regardless of the fact that the majority of the respondents were males (83.9%), while (16.1%) were females. However, it would be suggested to investigate whether there is a difference between male restaurant operators/Chefs and female restaurant operators/Chef, in terms of their perceptions of, and commitment to, promoting and producing Locally Produced Foods.

Similar to the restaurant operators, demographic information related to tourists visiting the island is not necessarily the main focus of this research study. However, it is interesting to highlight the fact that the demographic characteristics for this particular sample are quite unique, as there was only a difference of 24 between males and females (males =1431, females = 1455).

Several interesting results were obtained when measuring stakeholders' perceptions toward the constructs "Product/Price," "Marketing Ability," "Safety/Sanitation," "Availability/Delivery," "Government Policy," and "Background of Chef."

From the farmers' perspective and for the construct "Product Price/Cost," the highest mean score (M=3.8) out of a total of six survey items for this construct was obtained for the survey item "As a local farmer, I am willing to negotiate prices with the hotels and commercial

restaurants.”. From the restaurants’ perspective, “I am willing to negotiate with local farmers” also obtained the highest mean score ( $M=4.25$ ,  $SD=.745$ ).

Additionally, an independent-samples t-test was also conducted for both the local farmers and restaurant operators. For this construct, and more specifically for the question “Locally Produced Foods perishes sooner than imported foods,” statistical significance was obtained ( $p<0.05$ ). This highlights the fact that both groups are aware of the challenges related to keeping Locally Produced Foods fresh. However, these results cannot confirm that restaurant operators prefer imported food products, mainly because of the challenge of perishability of Locally Produced Foods.

For the construct “Marketing Ability,” the survey items “If the hotels and restaurants buy local produce, it would benefit our economy” ( $M=4.22$ ) and “If the hotels and restaurants buy local produce, it would benefit the primary sector” ( $M=4.21$ ) produced the highest mean scores out of the six survey items for this construct. Interesting enough, on items directly related to their own marketing ability to promote their locally produced food, all farmers scored “neutral” ( $M=3.70-4.40$ ), even disagreeing on the survey item “As a local farmer, I have the knowledge how to market my product with the hotels and commercial restaurants.”

From the restaurants’ perspective, the item “If hotels and restaurants buy Locally Produced Foods, it would benefit the primary sector” also obtained a high mean score ( $M=4.30$ ,  $SD=.537$ ). The recently mentioned high mean scores are highly related in previous literature on consumers’ demand for Locally Produced Foods, where support for the local economy is one of the main attributes consumers associate with the term “local.” In Lawless’ (1999) study, farmers also indicated that if retailers sourced more local products, it would benefit the local economy

and also provide environmental benefits. For the “neutral” results and directly related to the marketing ability of local farmers, it has been suggested in previous literature that it is not a matter of “know-how,” but a matter of “time constraints” and “planning”. Additionally, an independent-samples t-test was also conducted for both the local farmers and restaurant operators. However, for this construct, no statistical significance was found between local farmers and restaurant operators.

For the construct “Safety/Sanitation,” farmers agreed on all four survey items. Two survey items, “As a local producer, it is important to produce food that is hygienic to the human being” (M=4.55) and “As a local producer, it is important to produce food that is healthy for the human being” (M=4.51), are important to discuss as a basis for proposing alternatives to address this concern. From the restaurants’ perspective, the highest mean score (M=4.57) was obtained for the item “As hotel and restaurant operators, it is important that farmers produce hygiene foods for customers.”

Additionally, an independent-samples t-test was also conducted for both the local farmers and restaurant operators. For this construct, “Safety/Sanitation,” and more specifically for the questions “It is the farmers’ own responsibility to educate themselves to produce healthy foods” and “It is the farmers’ own responsibility to educate themselves to produce hygiene foods,” statistical significance was obtained ( $p < 0.05$ ). This illustrates the importance that both stakeholders place on hygiene/sanitation and health concerns related to Locally Produced Foods. The remaining two questions did not reach statistical significance.

As it relates to the construct “Availability and Delivery,” study results indicate that for the survey item “The hotels and restaurants do not communicate sufficient with local farmers,”

with a mean score of 3.78 ( $M = 3.78$ ), farmers expressed concern about the communication barriers between themselves and restaurant operators. From the restaurants' perspective, the highest mean score was obtained for the item "Farmers cannot keep up with local produce demand" ( $M=4.12$ ,  $SD=.935$ ).

For this construct, "Availability and Delivery," an independent-samples t-test was also conducted for both the local farmers and restaurant operators. For this construct, and more specifically for the questions "Farmers do have the resources (transportation) to deliver their products to hotels, restaurants, and other foodservice facilities located in the touristic area" and "Farmers cannot keep up with the local produce demand to the hotels, restaurants, and other foodservice facilities," statistical significance was reached ( $p<0.05$ ). Both farmers and restaurants highlighted the importance of the delivery aspect within the food supply chain of Aruba. Yet, it is not clear who should be responsible for addressing the importance of delivering food produced by farmers to the restaurant operators. Results related to keeping up with the local demand are also important to highlight, as many hotels and restaurants on the island indicated their interest in purchasing and serving Locally Produced Foods. However, the current situation with the local farmers' production processes clearly indicates a gap within the food supply chain of the island. It is important that these results indicate that both stakeholders are concerned about the current status.

The construct "Government Policy" also indicated interesting results from the farmers' perspective. The highest mean rating was ( $M=4.00$ ,  $SD=.853$ ) for the item "Farmers need additional funds from the government," which was similar to the restaurants' perspective, with the highest mean score of ( $M=4.00$ ,  $SD=.853$ ) for the item "Farmers need additional funds from

the government.” An independent-samples t-test was also conducted for both the local farmers and restaurant operators. However, for this construct “Government Policy,” no statistical significance was found between local farmers and restaurant operators.

For the construct “Background of Chef,” the highest mean score among local farmers was obtained for the item “A chef has to be the main one interested to buy Locally Produced Foods” (M=3.96, SD=.868), while for the restaurant operators it was for the item “Chefs in Aruba are interested to put Locally Produced Foods on their menu” (M=3.73, SD=.751).

Also for the construct “Background of Chef,” an independent-samples t-test was also conducted for both the local farmers and restaurant operators. Interesting results were found for this construct, as all four questions – “A Chef has to be Aruban to have interest in locally produced foods,” “A Chef has to be educated in local foods from Aruba, in order for him/her to buy Locally Produced Foods,” “The Chef has to be the main person interested to buy Locally Produced Foods,” and “The Chef in Aruba (now and in the past) are interested to put Locally Produced Foods on their menus” – reached statistical significance ( $p < 0.05$ ). Both farmers and restaurant operators believe that the backgrounds of the Chefs in charge at the foodservice facilities on the island play an important role in the purchasing, preparation and promotion of food items produced by local farmers. Previous literature (Torres, 2011) briefly mentioned this construct as a possible cause that could affect the food supply chain, and it can now be suggested to continue investigating this construct in a more detailed manner.

The construct “Willingness to Explore Locally Produced Foods” obtained a high mean score (M=3.61, SD=1.039) for the item “The lack of availability and delivery of local farmers will limit restaurant operators willingness to negotiate with local farmers.”

However, no statistically significant results were obtained when comparing the mean scores of the local farmers and restaurants.

For the tourist sample, overall, respondents held a positive perception and attitude toward their interest in exploring the use of Locally Produced Foods (98.8% yes, 11.9% no). Interesting results were obtained for questions related to the constructs “Safety/Sanitation,” with questions “It is important that farmers, restaurants, and other foodservice facilities produce foods that are healthy and meet international sanitation standards” ( $p < 0.047$ ) and “I am willing to pay more for Locally Produced Foods, if farmers, restaurants and other foodservice facilities produced Locally Produced Foods that are healthy and meet international sanitation standards” ( $p < 0.034$ ). As stated in the literature review sections, customers are becoming more critical and demanding about the sanitation standards of restaurant operations. However, the above-mentioned results also indicate that farmers have to comply with international food safety standards.

Also for questions related to the construct “Government Policy,” two questions obtained statistical significance, which were “A government approved seal of quality for local farmers and restaurants producing Locally Produced Foods, will stimulate your interest in exploring with Locally Produced Foods” ( $p < 0.034$ ) and “I am willing to pay more if farmers and restaurants have a government approved seal” ( $p < 0.048$ ). Tourists expect local government to take notice of these results, and to promote these strategies among farmers and restaurants, as they can provide mutual and equitable benefits for directly and indirectly related stakeholders within the local food supply chain.



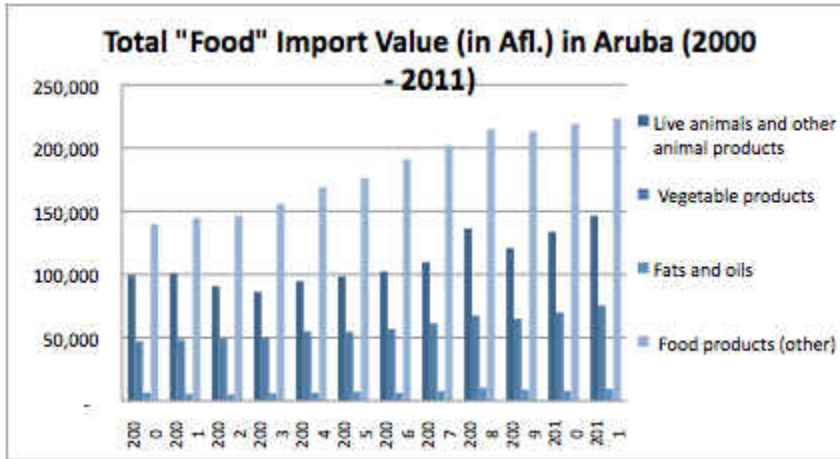
## **CHAPTER SIX: RECOMMENDATIONS, FUTURE RESEARCH, LIMITATIONS AND CONCLUSION.**

The purpose of this study was to reveal the perceptions of three main stakeholders within the food supply chain of Aruba, and how it is related to the promotion of Locally Produced Foods being produced by small farmers on the island. Results clearly indicate that there is room for improvement in promoting the distribution of Locally Produced Foods within the food supply chain of the island. The following section provides recommendations for practitioners and researchers, limitations, and a conclusion.

### Recommendations and Future Research

One of the biggest challenges for local farmers, related to the construct Product/Price, is to keep their prices at a competitive level compared to prices of imported food products. Because of the economic growth Aruba has faced over the last decade or two, which resulted in increased consumer demand and a growth in the immigrant population, imports of food products have grown considerably, making it more challenging for farmers to keep up with the demand and the competitive prices of imported foods (Table 33).

**Table 32: Total “Food” import value (in Afls) in Aruba (2000-2011)**



However, both local farmers and restaurants expressed their concern about perishable challenges related to Locally Produced Foods, and this can also impact pricing strategies between the two partners. Also, both had high mean scores for their willingness to negotiate prices; the positive attitude both parties had toward addressing pricing challenges between local farmers and restaurants should be applauded.

Future research should be conducted to investigate pricing strategies for imported food items and for food items produced locally. Informal sessions with the Department of Agriculture produced several interesting strategies that can alleviate price competition among farmers and local food distributors. More specifically, a five-year tax holiday to local farmers, reduced import taxes on agricultural equipment and supplies, and pricing incentives are ideas that need to be further explored and investigated. Imported foods are currently the biggest competitor to domestically produced products; however, by increasing the demand for Locally Produced Foods by promoting them as menu items of local restaurants is just one option. Innovative strategies in

the mainstream local food supply chain should be supported by producing more local food items, as literature of the U.S. consumer market keeps suggesting a demand for Locally Produced Foods.

Marketing Locally Produced Foods remains critical to local farmers, as consumers are demanding a more “direct contact” approach with the local farmers. The above-mentioned results indicate that both parties agreed that a more aggressive marketing campaign for Locally Produced Foods will benefit the primary sector and the local economy. Yet surprisingly and not as anticipated based on previous literature, neither the farmers nor restaurants agreed that farmers do not have the time or finances to market their products. However, during a formal session organized by the University of Aruba and including both professionals representing the restaurant and hotel industry of the island and local farmers, one of the most discussed concerns was the lack of marketing ability that local farmers currently have. Both parties agreed during the session that the local farmers need to market their products in a more effective manner, but at the same time, local farmers are also aware that they lack the time and finance to execute the requests stated by restaurant operators. It was suggested at the end of the session to have the local agricultural department (Santa Rosa) act as an intermediary, as the department is aware of most of the local farmers that are currently producing food staples.

Countries such as Italy are well known for using intermediaries as a liaison between farmers and consumers. However, farmers need to be aware that “intermediaries” could have an impact on the final price of the product produced, and their participation can result in a more expensive journey than anticipated.

It is therefore strongly suggested to use the business models of countries that are already using intermediaries between farmers and restaurants, and reach a communication balance between the two stakeholders. Regretfully, this scenario currently lacks empirical support, and it is therefore suggested to organize continuous focus group sessions until a consensus between both parties is reached.

With the increased cases of food borne outbreaks, sanitation and hygiene standards have emerged as a critical component in the food supply chain (Martinez et al., 2010). Currently, however, not related to small farmers, there is a major recall of products produced by Foster Farms, which has caused a salmonella outbreak of at least 338 persons, including in Puerto Rico (Food Safety News, 2013). Because of this phenomenon, customers, and in this particular case, tourists are becoming more aware and critical about the sanitation standards of both farmers and restaurants. The above-mentioned results clearly indicate tourists' willingness to pay more for Locally Produced Foods if and when they are produced in a healthy manner and meet international sanitation standards.

As this construct relates to "Government Policy," the local government needs to pay special attention to it, as current local sanitation standards for restaurants are outdated and the local department of health does not have sufficient manpower to audit restaurants and foodservice-related entities, at least not on a consistent basis. Also, there are no current sanitation standards specifically created for local farmers. While there is a demand for Locally Produced Foods by consumers in the international arena, the consequences of poor hygiene standards in conjunction with poor practices can be catastrophic for the brand name of the island.

Previous studies related to the sanitation standards of restaurants and other foodservice operators (Murphy, DiPietro, Kock, & Lee, 2011) have indicated that restaurants that follow a mandatory food safety-training program establish consistent positive results in food safety inspection performed by foodservice inspectors. In other words, it is essential to have a well-structured sanitation-training standard for both stakeholders (farmers and restaurants) within the food supply chain of Aruba.

Similar to Murphy's study, future related research should be conducted to evaluate the formulation, implementation and evaluation of food safety inspection standards for local farmers and restaurants on the island. Incentive strategies can also be implemented: if farmers comply with government regulations related to sanitation and hygiene standards, they can receive a government seal of approval, which in turn can be used as a marketing strategy for attracting tourists to those farmers. Results indicated that both farmers and restaurants agreed that farmers need to produce food that is hygienic and healthy for human consumption.

Related to the construct "Availability and Delivery," future research needs to investigate the participation of farms and restaurants within the local food supply chain on the island, in order to obtain more detailed information on the types of products sold between the farmers and restaurants. Farmers indicated their concern that the restaurant industry does not communicate sufficiently with them, even though they are interested in selling their products to the restaurant industry, especially those in the touristic area of the island. Restaurants, on the other hand, indicated that they are concerned with the supply side of the Locally Produced Foods being produced on the island, yet they do express their interest in partnering with these local farmers.

Obtaining more information about the production processes in terms of quantity and quality, and in combination with valid data, would provide a more complete picture of the magnitude, small or large, of the local products produced by each local farmer. More specific to the issue at hand, exploratory research is suggested to investigate both the farmers and restaurant operators' perceptions as to whether an intermediary organization is indeed needed to facilitate availability and delivery process between the two stakeholders in the island's food supply chain. Several examples can be obtained on websites of international organizations that promote Locally Produced Foods demonstrating how these communication barriers can be reduced or eliminated.

Internationally, and more specific to the U.S., many government-supported programs and policies exist to support local food initiatives and advocates, and the numbers are continuously growing. These include the "Community Food Project Grants Program," the "Women, Infants, and Children (WIC) Farmers' Market Nutrition Program," the "Senior Farmers' Market Nutrition Program," the "Federal State Marketing Improvement Program," the "National Farmers' Market Promotion Program," the "Specialty Crop Block Grant Program," and the "Community Facilities Program" (Martinez et al., 2010). However, very limited research exists to measure the impact of government intervention or lack thereof. It would be interesting, for example, to investigate: a) the intervention of government in the local food system of the island, and what impact it has on increased employment in the food supply chain; b) what impact awareness and implementation of LPF has on the improvement of the diet quality of local citizens or on the local food security; and c) the environmental impact of a sustainable food supply chain on the island.

The latter should investigate the reduction of greenhouse gas emission by simulating a decrease in imported food to the island of Aruba. The current government has been advocating the reduction of greenhouse gas emission by becoming less dependent on fossil fuel. For example a series of ten wind turbines has already been built, with a second phase in the pipeline. A paradigm shift of government policy, but more towards a sustainable food supply chain, is suggested, which in turn could reduce current social, environmental, and entrepreneurial issues.

However, the confusion in policy analysis relates to the chicken and egg dilemma. Short-term strategies need to be implemented immediately to reduce the intimidated perception local farmers have toward producing food products on a larger scale. Both farmers and restaurants agreed that the local government can play an important role in this manner, agreeing that additional funds need to be allocated to support local farmer with operational challenges.

Under a tentative Stakeholders' Analysis report being produced by the local agricultural department (Santa Rosa), several strengths, weaknesses, opportunities, and threats were stated.

One of the biggest challenges is the availability, quality and pricing of the island's water supply. The quality of the groundwater is poor and brackish, due to both seawater mixing and the semi-arid climate of the island (van Sambeek, Eggenkamp, & Vissers, 2000). This is challenge that involves several governmental departments; therefore, reaching a consensus for a policy to either protect or control the quality of this groundwater can be a tedious task. In the report's SWOT analysis, one of the major weaknesses stated is the lack of natural water, and the cost of water supplied by the local desalination company W.E.B. (Water en Energie Bedrijf). Immediate government intervention is critical, and the above-mentioned concerns needs to be addressed in order to facilitate more aggressive production by local farmer of Locally Produced Foods. More

hotel rooms/condos are being built, and the above-mentioned results of tourists' perceptions clearly indicate the importance of government intervention. The population also keeps increasing, so this could be the perfect opportunity to implement a sustainable food supply chain for the island of Aruba and promote the island as the first in the region to do so.

In regard to the construct "Background of Chef," both results illustrate that the Chef in charge plays a cardinal role within the food supply chain. Most respondents in the restaurant category indicated their interest in the production and promotion of Locally Produced Foods, which resonates with the perception of the local farmers. Industry reports in the U.S., and more specific to the above-mentioned construct, the "What's Hot-2013 Chef Survey," created by the National Restaurant Association, clearly indicates that Chefs are more and more interested in locally sourced meats (ranked first) and seafood and locally grown produce (ranked second), and other directly and indirectly trends related to Locally Produced Foods (National Restaurant Association, 2013). Also, in 2008, for example, Chipotle Mexican Grill, one of the fastest-growing quick-service chains, began purchasing 25 percent of at least one produce item for each of its stores from farms located within 200 miles (Martinez et al., 2010).

However, this is slightly contrary to previous academic research, in which chefs have indicated their dissatisfaction with local products, as they were concerned about unsanitary production, product quality and produce appearance. To reinforce the interest of local chefs in Locally Produced Foods, organizations such as the "Chefs Collaborative" can be formed on the island, which can follow similar philosophies that support sustainable cuisines and promote sustainable purchasing strategies, which in turn can support the local farmers with their sale of Locally Produced Foods. Similar to international hotels and restaurant Corporate Social



Responsibility programs, Chefs can also play a key role in stimulating “Farm-to-School” programs. This can represent an important component of locally grown production, where school authorities can buy or produce their own fresh produce, while implementing nutritional education within their curriculum. Farm-to-School programs have grown rapidly over the last decade, and not only in the U.S. Chile, for example, has implemented the “5 al día” program, which promotes the consumption of five fruits or vegetables on a daily basis in their elementary schools. Chefs in general can act as important advocates, and have enormous influence on the purchasing patterns of produce in these large hotel and restaurant operations. More islands in the Caribbean are promoting their local cuisine, with a focus on local produce, as a strategy to remain competitive in this hyper-dynamic industry.

For the construct “Willingness to Negotiate,” results illustrates that this is a key factor within the local food supply chain. More in-depth research could be implemented to better understand the demand side of restaurants and tourists when it comes to their willingness to explore with Locally Produced Foods. This way, better incentives can be created amongst the three stakeholders to make the flow within the food supply chain more feasible. In general, all five constructs – Product/Price,” “Marketing Ability,” “Safety/Sanitation,” “Availability/Delivery,” “Government Policy,” and “Background of Chef” – should be further investigated to explore what jeopardizes the relationship amongst stakeholders within the food supply chain.

## Limitations

This research project is not free from limitations. The first limitation is technical and related to sampling errors. Data for this study were gathered through a combination and series of focus group sessions with local farmers and restaurant operators. Almost half of the total registered farmers were obtained for the focus group session, but the ideal would be to obtain the complete list of registered farmers. The other challenge with this sampling error is that there are a number of small famers with limited production that are not officially registered at the local department of agriculture nor at the local Chamber of Commerce.

For restaurant operators, three separate focus group sessions were organized. However, during these sessions, the number of participants for each focus group was very limited. The sampling technique was then modified into individual visits to restaurant operators in order to reach an acceptable percentage representing the total amount of restaurants in the touristic area. An online survey was also created to collect as many samples as possible, especially for those who were not available for personal interviews. In other words, access to restaurant operators on the island was an unforeseen problem and beyond the control of the researcher.

The tourist survey was created in conjunction with the local Destination Management Organization “ATA” (Aruba Tourism Authority). ATA was interested in collecting expenditure-related data, and was interested in merging two sets of questions into one survey. This created a challenge for the proposed framework, as it was requested, if not demanded, by ATA to remove some of the questions of the proposed framework. At the end, when both set of questions were merged, it was sent to management for readability for internal consistency.

However, additional questions of the framework was removed, as ATA management believed that some of the questions had too much of a political inclination to them. This created tremendous tension in obtaining results that would support the relationship with the constructs presented in the framework. Because of the time constraint and feasibility of the study, and the risk of being denied access to the database of repeat visitors of the island of Aruba, it was agreed to continue in this way.

Even though statistical significance was found for both the independent samples t-test between farmers and restaurants and the tourist sample as it relates the constructs presented in the proposed framework, such framework must be further refined, as both reliability and external validity of the framework must be tested with additional samples, and even different types of sample characteristics. The limitations mentioned above also limit the generalizability of the findings. Once an increased power is found within the proposed framework, which promotes a sustainable food supply chain for the island of Aruba, it would be desirable to conduct similar studies in neighboring islands in the region.

Also, this survey briefly touches the surface on the direct economic impact of Locally Produced Foods, as the main purpose was to measure the perception of local farmers. Future research, which could include using more sophisticated economic models such as the Input-Output Model, can more precisely estimate the economic benefits of Locally Produced Foods. The model can also provide several simulation exercises with increases or decreases in demand, which could then assist policymakers with the adjustment of their pricing strategies while supporting local production.

## Conclusion

The purpose of this study was to examine the perception toward Locally Produced Foods of three different stakeholders in the tourism industry of the island of Aruba. Using the data collected through a series of in-depth focus groups sessions, individual consultation with industry professionals, and an online survey, local farmers, restaurants, and tourists' perception were analyzed and presented. The study is just one step toward a thorough consideration and identification of similarities and general differences of perception between the three stakeholders investigated in this research. Therefore, this study holds the potential for helping the local leadership, particularly from governments and public and private entities directly and indirectly related to the island's food supply chain.

More interest in the local food supply chain must be developed, along with the desire to understand how the expansions of Locally Produced Foods impact local farmers, restaurants, and tourists. Food supply chains are becoming a key component of food and agriculture policy, as consumers demand more unique products from local farmers and producers explore additional viable revenue streams. Yet, for the island of Aruba, it still represents a small portion of the local agriculture, and much remains to be explored about the future role of private and public entities in Aruba.

Local government and its corresponding agencies related to local agriculture should address this research gap on Locally Produced Foods, in particular related to public policies and programs that will support this sustainable food supply chain. With current challenges related to diet-related health issues, pressure from environmental food advocates (Slow Food

International), food insecurities, and lack of food access, a well-developed sustainable food supply chain for small island destinations may reduce these challenges. The above-mentioned results provide a foundation on the importance of promoting a strong linkage between local farmers, restaurants, and tourists, in conjunction with desired sustainable public policy outcomes.

Finally, the results of this study will hopefully serve as a foundation for more comprehensive and complex research related to sustainable food supply chain for small island destinations.

## **APPENDIX A: SURVEY FARMERS**

Date:

Place:

**General Questions**

1. Are you: **An Agrarian**  **Stock & Cattle Cultivator**  **Both**  **Other**   
Mark an "X" for the correct answer

2. In which district is your farm/cultivation located?

Please mark a circle "○" where your property is located.

**Noord/Tanki Leendert**

Palm Beach/Malmok  
Washington  
Alto Vista  
Moko/Tanki Flip  
Tanki Leendert  
Otro: \_\_\_\_\_

**Paradera**

Shiribana  
Paradera  
Ayo  
Piedra Plat  
Otro: \_\_\_\_\_

**Santa Cruz**

Hooiberg  
Papilon  
Cashero  
Urataca  
Macuarima  
Balashi/Barcadera  
Otro: \_\_\_\_\_

**San Nicolas Panord**

Brasil  
Rooi Congo  
Watapana Gezag  
Rooi Hundo  
Kustbatterij  
Juana Morto  
Otro: \_\_\_\_\_

**San Nicolas Pazuid**

Zeewijk  
Village  
Essoville  
Lago/Esso Heights  
Seroe Colorado  
Otro: \_\_\_\_\_

**Savaneta**

Pos Chiquito  
Jara/Seroe Alejandro  
De Bruynewijk  
Cura Cabai  
Otro: \_\_\_\_\_

**Oranjestad Pabou**

Klip/Mon Plaisir  
Sivdivi  
Seroe Blanco/Cumana  
Dakota/Portero  
Tarabana  
Sabana Blanco/Mahuma  
Simeon Antonio  
Otro: \_\_\_\_\_

**Oranjestad Pariba**

Post Abao/Cunucu Abao  
Eagle/Paardenbaai  
Madiki Kavel  
Madiki/Rancho  
Paradijswijk/Santa Helena  
Socotoro/Rancho  
Ponton  
Companashi/Solito  
Otro: \_\_\_\_\_

**3. Mark an "X" for the right answer.**

You are: Male  Female

**4. The property where your plantation / cattle are located on: owned property or long lease?**

Own property  Long Lease  Other:

**5. Is this property on your name?**

Yes  No

**6. Your age? \_\_\_\_\_**

**7. Do you have employees?**

Yes  No  Part-time  Other:

**8. If your answer at question 7 was "YES", how many employees do you have in your production?**

Between 1-5  Between 6-10  Between 11-15  More than 16

**9. Do you have another job next to your Cultivation-Cattle production?**

Yes  No  Other:

**10. What is the monthly income that you receive from your production?**

Between Afls 100 pa 500  Between Afls 500-1000  Between Afls 1000-2000   
Between Afls 2000 pa 3000  More than di Afls 3000  Other

**11. Does your final product stay in Aruba or is it being exported for general sales purposes?**

Product is exported  Product stays in Aruba  Both

**12. If your product is not being exported yet, do you wish to export your local product overseas?**

Yes  No  Other:



### Specific Questions

Please, mark a circle ○ around one of the numbers which indicates your perception of the below mentioned phrases. The number indicates if you:

(1) Completely disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Completely agree.

---

**13. Historically, the refinery sector weakened our primary sector.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**14. Historically, the tourism sector weakened our primary sector.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**15. Our labor market is concentrated only on the tourism sector and the refinery sector.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**16. The actual Aruban agriculture is far more developed technically than what it used to be in the past.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**17. The agriculture of Aruba went downwards due to competition for land because it is being used for other economic purposes.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

**18. Locally produced foods (vegetables and fruits for example) is synonymous to organic foods (vegetables and fruits for example).**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**\_19. Local produce (for instance vegetables and fruits) are healthier than imported foods.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**20. Local produce (for instance vegetables and fruits) are less harmful to our environment.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**Specific questions: produce and its costs and selling price**

**21. Hotels and restaurants prefer to buy imported produce because locally bought produce compared to imported produce is more expensive.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**22. As a local farmer, I am willing to negotiate prices with the hotels and commercial restaurants.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**23. Hotels and commercial restaurants are not interested to negotiate with local producers.**

1	2	3	4	5
---	---	---	---	---

**24. Prices of local produce are higher than imported produce.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**25. Local produce perishes sooner than imported produce.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**26. Hotels and commercial restaurants do not benefit financially negotiating with local farmers.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**Specific questions: Marketing your product**

**27. As a local producer, I have the knowledge how to market my product with the hotels and commercial restaurants.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**28. As a local producer, I do not have the time to market my product with the hotels and commercial restaurants.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**29. As a local producer, I do not have the finances to market my product with the hotels and commercial restaurants.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**30. Aruba Tourism Authority (ATA), who is responsible for marketing our tourism industry, should be held responsible to market our local produce as well.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**31. If the hotels and restaurants buy our local produce it would benefit our economy.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**32. If the hotels and restaurants buy our local produce it would benefit our primary industry.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**Specific questions: Food safety and hygiene of the food product.**

**33. As a local producer, it is important to produce food that is healthy for the human beings.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**34. As a local producer, it is important to produce food that is hygienic to the human beings.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**35. It is my own responsibility to educate myself how to produce healthy foods.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**36. It is my own responsibility to educate myself how to produce hygienic foods.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**Specific questions: The ability to deliver produce to hotels and restaurants.**

**37. Are you willing to sell your products with the hotels and restaurants located in the touristic area?**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**38. Do you prefer to sell your products directly with the hotels and restaurants located in the touristic area?**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**39. As a local producer, do you have the resources (transportation) to deliver your products with the hotels and restaurants located in the touristic area?**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**40. As a local producer, do you have the resources to deliver your products with the hotels and restaurants located in the touristic area during the week?**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**41. As a local producer, do you have the resources to deliver your products with the hotels and restaurants located in the touristic area during the week but also during the weekend?**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**42. As a local producer, I cannot keep up with the local produce demand to the hotels and commercial restaurants.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**43. The hotels and commercial restaurants do not communicate sufficient local farmers.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**Specific questions: The governments' responsibility**

**44. As a local producer, you need additional funds from the government.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**45. The government is the only entity to sustain consistent production of the local products.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

## **APPENDIX B: SURVEY RESTAURANTS**

## The Restaurant Industry Perception of Locally Produced Foods

*These following questions are part of a research project in collaboration with the University of Aruba (UA), the Aruba Tourism Authority (ATA), the Department of Agriculture, Fisheries, and Market Halls (DLVVM), and Mr. Gerald (Gino) Kock, Doctoral student at the University of Central Florida's Rosen College of Hospitality Management.*

*The survey takes an in-depth look at the perception of tourists visiting Aruba towards locally produced foods. Locally produced food is a "collaborative effort to build more locally based, self-reliant food economies, one in which sustainable food production, processing, distribution, and consumption is integrated to enhance the economic, environmental, and social health of a particular community" (Feenstra, G., 2002).*

*Study findings will contribute to future improved service delivery and quality in both the local agricultural sector and the tourism sector, and to a better distribution of tourism benefits to the local people. The information you provide on this questionnaire will be maintained in the strictest confidentiality. Your name is not required. THIS IS NOT A COMMERCIAL STUDY.*

### General Questions related to agriculture

**Please, mark a circle  around one of the numbers which indicates your perception of the below mentioned phrases. The number indicates if you:**

**(1) Completely disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Completely agree.**

**1. Historically, the refinery sector weakened our primary sector (agriculture).**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**2. Historically, the tourism sector weakened our primary sector (agriculture).**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**3. Our labor market is concentrated only on the tourism sector and the refinery sector.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**4. The agriculture of Aruba went downwards due to competition for land and infrastructure, as it is being used for other economic purposes such as hotel and restaurant buildings.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---



**5. Local produce (for instance vegetables and fruits) are healthier than imported foods.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**6. Local produce (for instance vegetables and fruits) are less harmful to our environment.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**Specific questions: Product price/Cost**

Please, mark a circle  around one of the numbers which indicates your perception of the below mentioned phrases. The number indicates if you:

(1) Completely disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Completely agree.

**7. Hotels and restaurants prefer to buy imported produce because locally produced foods are more expensive.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**8. As a hotel, restaurant or a foodservice operator, I am willing to negotiate food prices with local farmers.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**9. Local farmers are not interested to negotiate with hotels and restaurants or other foodservice facilities.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**10. Prices of locally produced foods are higher than imported food products.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**11. Locally produced foods perishes sooner than imported produce.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**12. Local farmers do not benefit financially from negotiating with hotels, restaurants and other foodservice facilities do (in terms of pricing and purchasing locally produced foods).**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**Specific questions: Marketing ability**

Please, mark a circle ○ around one of the numbers which indicates your perception of the below mentioned phrases. The number indicates if you:

(1) Completely disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Completely agree.

**13. Local farmers have the knowledge on how to market their products with the hotels, restaurants, and other foodservice facilities.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**14. Farmers do not have the time to market their products with the hotels, restaurants, and other foodservice facilities.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**15. Farmers do not have the finances to market their products to the hotels, restaurants, and other foodservice facilities.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**16. Aruba Tourism Authority (ATA), who is responsible for marketing our tourism industry, should be held responsible to market our locally produce foods (those produced by our local farmers).**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**17. If hotels, restaurants, and other foodservice facilities purchase, produce and market our locally produced foods, it would benefit our local economy.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**18. If hotels, restaurants, and other foodservice facilities purchase, produce and market our locally produced foods, it would benefit our primary industry (agriculture).**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**Specific questions: Food Safety and Sanitation.**

**Please, mark a circle  around one of the numbers which indicates your perception of the below mentioned phrases. The number indicates if you:**

**(1) Completely disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Completely agree.**

**19. As a hotel, restaurant or a foodservice facility operator, it is important that farmers produce food that is healthy for the human being and for our customers.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**20. As a hotel, restaurant or a foodservice facility operator, it is important that farmers produce food that is hygienic to the human beings and our customers.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**21. It is the farmers' own responsibility to educate themselves on how to produce healthy foods.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

**22. It is the farmers' own responsibility to educate themselves on how to produce hygienic foods.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**Specific questions: Availability and Delivery of locally produced foods to hotels, restaurants, and other foodservice facilities.**

Please, mark a circle  around one of the numbers which indicates your perception of the below mentioned phrases. The number indicates if you:

(1) Completely disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Completely agree.

**23. Farmers are willing to sell their products with the hotels, restaurants, and other foodservice facilities located in the touristic area?**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**24. Farmers prefer to sell their products directly to the hotels, restaurants, and other foodservice facilities located in the touristic area?**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**25. Farmers do have the resources (transportation) to deliver their products to hotels, restaurants, and other foodservice facilities located in the touristic area.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**26. Farmers have the resources to deliver their products to the hotels, restaurants and other foodservice facilities located in the touristic area during the week?**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

**27. Farmers have the resources to deliver their products to the hotels, restaurants and other foodservice facilities located in the touristic area during the weekend?**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**28. Farmers cannot keep up with the local produce demand to the hotels, restaurants, and other foodservice facilities.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**29. Hotels, restaurants and other foodservice facilities do not communicate sufficiently with local farmers.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**Specific questions: Government Policy**

Please, mark a circle ○ around one of the numbers which indicates your perception of the below mentioned phrases. The number indicates if you:

(1) Completely disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Completely agree.

**30. Local farmers need additional funds from the government.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**31. The government is the only entity responsible to sustain consistent production of the locally produced foods by local farmers.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**32. The government is the only entity responsible to develop our primary sector (agriculture and fisheries).**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

**33. The government is the only entity responsible to finance the welfare of our primary sector (agriculture and fisheries).**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**34. The government is the only entity responsible to take the initiative to lower operational expenses from the local producers.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**35. The government is the only entity responsible to protect local producers against unfair competition.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**36. Historically, the local government did not have the primary sector as their major attention.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**Specific questions: Background Chef**

Please, mark a circle ○ around one of the numbers which indicates your perception of the below mentioned phrases. The number indicates if you:

(1) Completely disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Completely agree.

**37. A Chef has to be an Aruban to have interest in locally produced foods.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**38. A Chef has to be educated in local foods from Aruba, in order for him/her to buy locally produced foods.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

**39. The Chef has to be the main person interested to buy locally produced foods.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**40. The Chefs in Aruba (now and in the past) are interested to put local products on their menu.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

**Specific questions: Willingness to Negotiate.**

Please, mark a circle  around one of the numbers which indicates your perception of the below mentioned phrases. The number indicates if you:

(1) Completely disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Completely agree.

**41. Higher prices of locally produced foods compared to imported foods limit your “willingness to negotiate” with the farmers.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**42. The lack of marketing ability farmers have to market their locally produced foods limit your “willingness to negotiate” with them.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**43. Lack of health and sanitation concerns of local farmers limit your “willingness to negotiate” with them.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**44. The lack of availability and delivery standards farmers have limits your “willingness to negotiate” with them.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**45. The lack of government funding to local farmers limit your “willingness to negotiate” with them.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**46. The background of your property’s chef (educational and ethnic/cultural) limits your “willingness to negotiate” with the local farmers.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

**47. The inability of small farmers or producers to provide a “tax-receipt” reduces your “willingness to negotiate” approach with local farmers.**

1	2	3	4	5
Completely disagree	Disagree	Neutral	Agree	Completely agree

---

---

### DEMOGRAPHICS

Please check all that applies using the “√” symbol.

**48. What is your gender?**

- Male
- Female

**49. What is your race/ethnicity?**

- Local (Aruban)
- Black
- Hispanic
- Native American
- White
- Pacific Islander
- Asian
- Other. Please specify \_\_\_\_\_



**50. Which country were you born in?**

- Aruba
- Curaçao
- Bonaire
- St. Maarten
- St. Eustatius
- Saba
- Dominican Republic
- Haiti
- Venezuela
- Colombia
- Peru
- Ecuador
- Suriname
- United States of America
- Canada
- The Netherlands
- Belgium
- France
- Italy
- China
- Philippines
- OTHER \_\_\_\_\_

**51. What is your highest level of education?**

- Primary
- Secondary/high school
- Associate
- Bachelor
- Master
- Other. Please specify \_\_\_\_\_

**52. How many years have you worked in this field? (Hotel, Restaurant or other Foodservice facilities)**

- 0-5 years
- 5-10 years
- 10-15 years
- 15-20 years
- 20-25 years
- more than 25 years

**53. Which country did you receive your official training in this field?**

- Country A: \_\_\_\_\_
- Country B: \_\_\_\_\_
- Country C: \_\_\_\_\_
- Country D: \_\_\_\_\_

**54. Which country did you work prior to this position?**

Country A: \_\_\_\_\_

Country B: \_\_\_\_\_

Country C: \_\_\_\_\_

Country D: \_\_\_\_\_

**55. What is your age group?**

Less than 20

20-29

30-39

40-49

50-59

60-69

Above 70

**56. What is your annual income?**

Under \$10,000

\$10,000-\$14,999

\$15,000-\$24,999

\$25,000-\$34,999

\$35,000-\$49,999

\$50,000-\$74,999

\$75,000-\$99,999

\$100,000-\$149,999

Over \$150,000

**GENERAL INFORMATION ABOUT YOUR RESTAURANT**

**57. District/Zone in which you are located:** \_\_\_\_\_ (see for example GAC 11).

**58. How would you classify your restaurant/F&B facility? (Please check all that applies using the "√" symbol)**

*a) Commercial restaurant /F&B facility*

Table service - Fine Dining

Table Service - Casual Dining

Table Service - Family Dining

Quick Service

Fast Casual

Pizza

Bar/Tavern/Pub/Brewery

Coffee shop/Donut/Baker/Chocolatier

Ice Cream/Frozen Novelty

Buffet/Cafeteria/Banquets

Catering -On/Off Premise

Clubs - Social/Country/Golf

Concessions -Theme Parks/Sports/Entertainment

Conference/Convention Centers

Mobile Foodservice & Vending

Airlines/Commissary

Lodging/Casino/Cruise ship       Other      Please specify \_\_\_\_\_

OR

*b) Non-Commercial restaurant /F&B facility*

- Business Industry/Other Contract Foodservice
- College/University Foodservice
- Correctional Institution/Prison
- Health Care/Retirement Homes
- Military/Military Clubs
- School Foodservice

OR

*c) Retail*

- Convenience Store
- Specialty Store/Gourmet/Deli
- Supermarket

**59. Using the  $\sqrt{\quad}$  symbol, checkmark the type of cuisine your restaurant or foodservice facility offers?**

- Burger/Pizza/Hotdog
- Caribbean
- Asian/Indian/Thai
- Central/South American
- European/Dutch
- Local
- North American
- Seafood
- Steaks
- Beach/Al Fresco
- International
- Italian
- Breakfast/Brunch

**60. Do you use a single food distributor do you use multiple food distributors? Or do you buy directly from a local farmer?**

- Single distributor
- Multiple distributors
- Local Farmer

**61. If you use a food distributor or multiple food distributors, do they offer or feature locally produced foods?**

- Yes
- No

**62. Do you offer any locally produced food items on your menu?**

- Yes
- No

**END OF SURVEY  
THANK YOU FOR COMPLETING THIS SURVEY**

## **APPENDIX C: SURVEY TOURISTS**



# Survey

[www.aruba.com](http://www.aruba.com)

On Aruba we take pride in promoting our local food. The local food survey takes an in-depth look at the perception and experience of tourist visiting Aruba for the enjoyment of our culinary diversity. Locally produced food is a “collaborative effort to build more locally based, self-reliant food economies, one in which sustainable food production, processing, distribution, and consumption is integrated to enhance the economic, environmental, and social health of a particular community” (Feenstra, g., 2002).

Study findings will contribute to future improved service delivery and quality in both the local agricultural sector and the tourism sector. The information you provide on this questionnaire will be maintained in the strictest confidentiality.

**SECTION 1: INFORMATION ABOUT YOUR TRIP**

---

**3. What was the main purpose of your visit to Aruba? (Please check  $\surd$  only one)**

- Vacation or Pleasure
- Business/ Convention/ Conference
- Honeymoon
- Wedding
- Incentive/ Award
- Visit friend/ relative
- Cultural Events/ Festivals
- Aruba Culture
- Explore the local cuisine
- Other \_\_\_\_\_

**4. Including yourself, how many people are traveling in your immediate group? (E.g. wife, kids, family, etc.)**

Adults \_\_\_\_\_ Children \_\_\_\_\_

**5. Did you buy a travel package?**

- Yes                       No      →    *If No, please skip to question number #19*

**6. What was the total cost of your tourism package? Please enter the amount for your immediate group in US\$. If you cannot recall the exact price of the travel package please provide an approximate US\$ amount for the tourism package(s).**

- Under US\$ 1,000
- US\$ 1,001- US\$ 2,500
- US\$ 2,501 – US\$ 4,000
- US\$ 4,001 – US\$ 5,500
- US\$ 5,501 or more

**7. What was included in the package? (Please check  $\surd$  all that apply)**

- Airfare
- All-inclusive
- Accommodation/room
- Car
- Breakfast
- Lunch
- Dinner
- Dive trips
- Cultural Activities
- Transfer to hotel/airport
- Island Tours
- Other \_\_\_\_\_

**8. Please indicate how much (or the approximate value) that was spent by you and your group in Aruba.**

**Please enter the amounts in US\$ and include all of the expenses for your entire immediate group. For example, include the expenses of your travel companion(s) such as your wife, children, or other individuals for which you covered the travel expenses.**

**Expenditures**

1) Lodging (only room expenses)	<u>US\$ _____</u>	8) Local Arts/Cultural Events	<u>US\$ _____</u>
2) Food/Beverage (inside hotel)	<u>US\$ _____</u>	9) Shopping	<u>US\$ _____</u>
3) Food/Beverage (outside hotel)	<u>US\$ _____</u>	10) Activities	<u>US\$ _____</u>
4) Car Rental	<u>US\$ _____</u>	11) Groceries/sundries	<u>US\$ _____</u>
5) Transportation	<u>US\$ _____</u>	12) Other Expenses	<u>US\$ _____</u>

**SECTION 2: INFORMATION ABOUT LOCAL FOOD**

**9. Have you visited other Caribbean islands for the purpose of exploring their local cuisine prior to your trip to Aruba?**

- No →
- Yes → If Yes, how many times in the last 5 years? \_\_\_\_\_ (enter number)
- Please mention at least 2 (two) Caribbean destinations \_\_\_\_\_

**10. Are you interested in exploring with locally produced food items and menu dishes from Aruba during your stay on the island?**

- Yes
- No →
- Not Sure →

**11. Please rate your level of dissatisfaction or satisfaction related to your dining experience with restaurants on the island of Aruba.**

Attributes	Completely dissatisfied	Dissatisfied	Neutral	Satisfied	Complete Satisfied
How would you rate the overall "Quality of service" of the island restaurant menus?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How would you rate the overall "Variety of entrees" of the island restaurant menus?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How would you rate the overall "Offerings of Local/Authentic Cuisine" on the menus presented on the island restaurant menus?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**12. Please rate your level of disagreement or agreement related to the following statements about Locally Produced Foods:**

Attributes	Completely disagree	Disagree	Neutral	Agree	Complete Agree
Restaurants and other foodservice facilities on the island have the knowledge on how to market locally produced foods on their menus.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If restaurants and other foodservice facilities purchase, produce, and promote the locally produced foods, the primary sector and the local economy would be benefited.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is important that farmers, restaurants and other foodservice facilities produce locally produced foods that are healthy and meet international sanitation standards.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**13. Please rate your level of disagreement or agreement related to the following statements about restaurants and Locally Produced Foods:**

Attributes	Completely disagree	Disagree	Neutral	Agree	Complete Agree
As a tourist, you are willing to explore local farmer markets or visit local farmers to purchase locally produced foods.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hotels, restaurants and other foodservice facilities communicate sufficiently with tourists about locally produced foods.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A government approved seal of quality for local farms and restaurants producing locally produced foods, will stimulate your interest in exploring with locally produced foods.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A Chef has to be local (an Aruban) to have interest in providing locally produced foods on his restaurant menus.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A Chef has to be educated in locally produced foods from Aruba, in order for him to purchase, prepare, and market these food products on his/her menus.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**14. Please rate your level of disagreement or agreement related to the following statements related to your willingness to pay and Locally Produced Foods:**

Attributes	Completely disagree	Disagree	Neutral	Agree	Completely Agree
I am willing to pay more for locally produced foods sold in local grocery stores and those offered on restaurant menus.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am willing to pay more for local produced foods if they are properly promoted by farmers, restaurants and other foodservice facilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am willing to pay more for locally produced foods, if farmers, restaurants and other foodservice facilities produce locally produced foods that are healthy and meet international sanitation standards.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am willing to pay more if farmers and restaurants have a government approved seal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**SECTION 3: DEMOGRAPHIC INFORMATION**

15. What is your age? \_\_\_\_\_ (Years)

16. What is your gender?  Male  Female

17. Where do you currently live? (Please check  only one)

- |  |                                    |                                      |
|--|------------------------------------|--------------------------------------|
| <input type="checkbox"/> The Netherlands | <input type="checkbox"/> Argentina | <input type="checkbox"/> Colombia    |
| <input type="checkbox"/> United States   | <input type="checkbox"/> Brazil    | <input type="checkbox"/> Germany     |
| <input type="checkbox"/> Venezuela       | <input type="checkbox"/> Canada    | <input type="checkbox"/> Italy       |
| <input type="checkbox"/> Curacao         | <input type="checkbox"/> Spain     | <input type="checkbox"/> Other _____ |

17. Check the box next to the range that applies to your total annual household income before taxes (In US\$):

- |   |  |  |  |
|---|--|--|--|
| <input type="checkbox"/> Less than US\$20,000   | <input type="checkbox"/> US\$20,001-US\$30,000 | <input type="checkbox"/> US\$30,001-US\$50,000 | <input type="checkbox"/> US\$50,001-US\$75,000 |
| <input type="checkbox"/> US\$75,001-US\$100,000 | <input type="checkbox"/> US\$100,001 and over  | <input type="checkbox"/> Unknown               | <input type="checkbox"/> Prefer not to state   |

***“Thank you for your cooperation! We wish you a safe flight home and look forward to seeing you back soon!”***



***Masha danki, until next time!***

***Have a safe trip  
home!***



## **APPENDIX D: LOGISTIC REGRESSION**

The difference between multiple regression and logistic regression is that the linear part of the equation is NOT the end itself, but is used to find the odds of being in one of the categories of the dependent variable given the combination of scores on the Xs.

### **Calculating the Logit Value**

The odds variable solves the problem of making probability estimates between 0 and 1, but we have another problem: how do we keep the odds values from going below 0, which is the lower limit of the odds (there is no upper limit). The solution is to compute what is termed the logit value – calculated by taking the logarithm of the odds. Odds less than 1.0 will have a negative logit value, odds greater than 1.0 will have positive logit values, and odds ratio of 1.0 (corresponding to a probability of 0.5) has a logit value of 0. Moreover, no matter how low the negative value gets, it still can be transformed by taking the antilog into an odds value greater than 0. With the logit value, we now have a metric variable that can have both positive and negative values, but that can always be transformed back to a probability value that is between 0 and 1. This value now becomes the dependent variable of the logistic regression model.

### **Model Estimation**

Once we understand how to interpret the values of either the odds or logit measures, we can proceed to using them as the dependent measure in our logistic regression. The process of estimating the logistic coefficients is similar to that used in regression, although in this case only two actual values are used for the dependent variable (0 and 1). Moreover, instead of using ordinary least squares as a means of estimating the model, the maximum likelihood method is used.

## Estimating the Coefficients

The estimated coefficients for the independent variables are estimated using either the logit value or the odds value as the dependent measure. The formulation is shown here:

$$\log \textit{it} = \ln \left[ \frac{\textit{prob}_{event}}{1 - \textit{prob}_{event}} \right] = b_0 + b_1 x_1 + b_2 x_2 + \dots + b_k x_n$$

Where 
$$\textit{prob}_{event} = \frac{e^u}{1 + e^u}$$

This process can accommodate one or more independent variables, and the independent variables can be either metric or nonmetric (binary). The coefficients reflect both direction and magnitude of the relationship.

In other words, the linear regression equation is the natural log ( $\log_e$ ) of the probability of being in one category divided by the probability of being in the other category.

## Assessing the Goodness-of-Fit of the Estimated Model

The goodness-of-fit for logistic regression model can be assessed in two ways. One way is to assess model estimation fit using “pseudo” R<sup>2</sup> values, similar to that found in multiple regression. The second approach is to examine predictive accuracy (like the classification matrix in discriminant analysis). The two approaches examine model fit from different perspectives, but should yield similar results.

## Model Estimation Fit

The basic measure of how well the maximum likelihood estimation procedure fits is the likelihood value, similar to the sums of squares values used in multiple regression. Logistic regression measures model estimation fit with the value of -2 times the log of the likelihood value, referred to as -2LL or -2 log likelihood. The minimum value for -2LL is 0, which

corresponds to a perfect fit (likelihood=1 and -2LL is then 0). Thus the lower the -2LL value, the better the fitting the model. The -2LL value can be used to compare between equations for the change in fit or used to calculate measures comparable to the R<sup>2</sup> measure in multiple regression.

### **Chi-square**

The Chi-square test and the associated test for statistical significance are used to evaluate the reduction in the log likelihood value. However, these statistical tests are particularly sensitive to sample size (for small samples it is harder to show statistical significance, and vice versa, for large samples). Therefore, researchers must be particularly careful in drawing conclusion solely based on the significance of the chi-square test in logistic regression.

### **Interpreting the Direction of Exponentiated Coefficients.**

One of the advantages of logistic regression is that we need to know only whether an event occurred or not to define a dichotomous value as our independent variable.

Exponentiated coefficients must be interpreted differently because they are the logarithms of the original coefficients. By taking the logarithm, we are actually stating the exponentiated coefficient in terms of odds, which mean that exponentiated coefficients will not have negative values. Since the logarithm of 0 (no effect) is 1.0, an exponentiated coefficient of 1.0 actually corresponds to a relationship with no direction. Thus, exponentiated coefficients above 1.0 reflects a positive relationship and values less than 1.0 represents negative relationships.

To determine how much the probability will change given a one-unit change in the independent variable, the numeric value of the coefficient must be evaluated. Just as in multiple regression, the coefficients for metric and nonmetric variables must be interpreted differently because each reflects different impacts on the dependent variable.


For metric variables, (independent), the question is: How much will the estimated probability change for each unit change in the independent variable? In multiple regression, we knew that the regression coefficient was the slope of the linear relationship of the independent and dependent measure. A coefficient of 1.35 for example, indicated that the dependent variable increased by 1.35 units each time that independent variable increased by one unit. In logistic regression, we know that we have a nonlinear relationship bounded between 0 and 1, so the coefficient are likely to be interpreted somewhat differently. Moreover, we have both the original and exponentiated coefficient to consider.

### **Assumptions**

Assumptions of Logistics Regression are: 1) Linearity between predictor variables and logit of the dependent variable, 2) Absence of multicollinearity [the independent variables should not be highly correlated with each other], 3) Absence of outliers [outlying cases can be observed by examining residuals, Cook's distance, and leverage values in addition to other producers covered in the data screening module], and 4) Independent errors [responses of cases are independent of each other and random samples meet the assumption of independence].

There are no assumptions regarding the distributions of predictors for logistic regressions (e.g. normality and linearity). However, if the assumptions of multivariate normality and linearity are met, power may be increased because a linear combination of the predictors is used to form the exponent. Also, no assumptions of homogeneity are there (variances do not have to be the same).

## **APPENDIX E: EXEMPTION DETERMINATION**

	<b>CHECKLIST: Exemption Determination</b>		
	<b>NUMBER</b>	<b>DATE</b>	<b>PAGE</b>
	HRP-412	6/19/2009	1 of 2

The purpose of this checklist is to provide support for individuals in determining whether an activity is Human Research or how it is regulated. When used by a Designated Reviewer to provide a determination. This checklist is to be completed, attached to CHECKLIST: Administrative Review, and retained.

**1 GENERAL EXCLUSIONS FROM EXEMPTIONS (All must be "Yes")**

**Yes**  **No** The research is not FDA-regulated.<sup>1</sup> (Look for whether data from the research will be submitted to or held for inspection by FDA. Beware of research that is commercially sponsored.)

**Yes**  **No** The research does not involve prisoners as participants.

**2 THE RESEARCH FALLS INTO ONE OR MORE OF THE FOLLOWING CATEGORIES (One or more items in the left most columns must be "Yes")**

Category (1) Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

Category (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human participants can be identified, directly or through identifiers linked to the participants; and (ii) any disclosure of the human participants' responses outside the research could reasonably place the participants at risk of criminal or civil liability or be damaging to the participants' financial standing, employability, insurability, or reputation. In addition:

**Yes**  **No** If the research involves children, the procedures are limited to (1) the observation of public behavior when the investigator(s) do not participate in the activities being observed and (2) the use of educational tests.

Category (3) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if: (i) the human participants are elected or appointed public officials or candidates for public office; or (ii) Federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.

Category (4)<sup>4</sup> Research involving the collection or study of data, documents, records, pathological specimens, or diagnostic specimens, if these exist at the time the research is proposed, and if the information is recorded by the investigator in such a manner that participants cannot be identified, directly or through identifiers linked to the participants.

Category (5) Research and demonstration projects which are conducted by or subject to the approval of Department or Agency heads, and which are designed to study, evaluate, or otherwise examine: (i) Public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs; (iii) possible changes in or alternatives to those programs or procedures; or (iv) possible changes in methods or levels of payment for benefits or services under those programs. In addition:

**Yes**  **No** The program under study delivers a public benefit (e.g., financial or medical benefits as provided under the Social Security Act) or service (e.g., social, supportive, or nutrition services as provided under the Older Americans Act).

**Yes**  **No** The research or demonstration project is conducted pursuant to specific federal statutory authority.

**Yes**  **No** There is no statutory requirement that the project be reviewed by an IRB.

**Yes**  **No** The project does not involve significant physical invasions or intrusions upon the privacy of participants.

**Yes**  **No** The funding agency concurs with the exemption.

Category (6)<sup>5</sup> Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.



## **APPENDIX F: INFORMED CONSENT**



### ***Informed Consent for an Adult in a Non-medical Research Study***

Researchers at the University of Central Florida (UCF) study many topics. To do this, we need the help of people who agree to take part in a research study. You are being invited to take part in a research study which will include about 200 industry professionals. You can ask questions about the research. You can read this form and agree to take part right now, or take the form home with you to study before you decide. You will be told if any new information is learned which may affect your willingness to continue taking part in this study. You have been asked to take part in this research study because you are either a restaurant member of a Slow Food Florida State Chapter, a sole proprietorship of a restaurant, a partner of a restaurant owner, a representative of a public restaurant corporation, a representative of a private restaurant corporation, and must be 18 years of age or older to be included in the research study and sign this form.

The person doing this research is Marcelino Gerald Kock (*Principal investigator, The University of Central Florida, Rosen College of Hospitality Management*), Dr. Tadayuki Hara, (*Chair of Dissertation Committee, The University of Central Florida, Rosen College of Hospitality Management*)

**Study title:** Food and Tourism – Slow Food’s role in promoting sustainable agriculture.

**Purpose of the research study:** The purpose of this study is to estimate the economic and environmental impact of traditional corporate agriculture and agriculture on a smaller scale (local farmers). More specifically, primary and secondary data will be used to simulate the effects of the two methods of supply chain, using distance as the main proxy to calculate these impacts. The study proposes the Environmental Input-Output (EIO) model as a tool for measuring these impacts.

**What you will be asked to do in the study:** You will be requested to fill in the printed or online surveys, where you will be asked to list your operation’s purchasing percentages of locally produced food commodities to your overall operation’s expenses, and or, your operation’s purchasing percentages of food produced from other regions (non-locally produced food commodities), which are purchased through regional wholesale corporation. This also, as it relates to their overall operation expenses.

**Voluntary participation:** You should take part in this study only because you want to. There is no penalty for not taking part, and you will not lose any benefits. You have the right to stop at any time. You will be told if any new information is learned which may affect your willingness to continue taking part in this study.

**Location:** The study will be conducted at a restaurant facility, or at a farmer's market, or online.

**Time required:** The total time required for the above mentioned techniques are about 30-45 minutes.

**Audio or video taping:** You will not be audio taped during this study.

**Risks:** The only risk involved in this study is the breach of confidentiality. While it is the intent of the researchers to maintain the confidentiality of the information that you reveal as part of your participation in this project, we cannot guarantee that the other participants in this will maintain their confidentiality. However, we ask that all participants maintain the confidentiality and not share the information that is revealed here. No other risks are associated with this study. You do not have to answer every question or complete every task. You will not lose any benefits if you skip questions or tasks.

**Benefits:** There are no expected benefits to you for taking part in this study, besides learning more about how research is conducted.

**Compensation or payment:** There is no compensation or other payment to you for taking part in this study.

**Confidentiality:** Your identity will be kept confidential. The researcher will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. Your information will be combined with information from other people who took part in this study. When the researcher writes about this study to share what was learned with other researchers, he will write about this combined information. Your name will not be used in any report, so people will not know how you answered or what you did.

There are times when the researcher may have to show your information to other people. For example, the law may require the researcher to show your information to a court [*if applicable*] or to tell authorities if the researcher believes you have abused a child or are in danger to yourself or to someone else. Also, the researcher may have to show your identity to people who check to be sure the research was done right. These may be people from the University of Central Florida or state, federal or local agencies or others who pay to have the research done.

**Study contact for questions about the study or to report a problem:** Marcelino Gerald Kock, Doctoral Student, Hospitality Management Program, Rosen College of Hospitality Management, (407) 903-8070 or by email at [geraldko@mail.ucf.edu](mailto:geraldko@mail.ucf.edu), Dr. Tadayuki Hara, Associate Dean for Administration & Finance, University of Central Florida, Rosen College of Hospitality Management, (407) 903-8174, or by email at [thara@mail.ucf.edu](mailto:thara@mail.ucf.edu).

**IRB contact about your rights in the study or to report a complaint:** Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901.

**How to return this consent form to the researcher:** By signing this letter, you give me permission to report your responses anonymously in the final manuscript to be submitted to my faculty supervisor as part of my course work.

- I have read the procedure described above
- I voluntarily agree to take part in the procedure
- I am at least 18 years of age or older

\_\_\_\_\_

Signature of participant	Printed name of participant	Date
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Principal Investigator	Date
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